

# Green Advertising on Social Media: A Systematic Literature Review

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**Abstract:** Consumer interest in environmental protection has grown in recent decades, alongside a shift in companies' strategies to embrace a greener way of doing business. Green advertising is rapidly expanding and gaining popularity. With more and more consumers being actively involved in social media searching and purchasing products, social media advertising is transformed into a principal way of communication. Although prior research has addressed green marketing and advertising, their presence in social media has been largely neglected. Based on a systematic review approach, the present study addresses recent trends and developments in green advertising on social media. We used PRISMA for the systematic review of eighty-one articles published between 2011 and 2022. Green advertising content, and greenwashing in particular have attracted significant research interest. Green skepticism and the role of generations are gaining popularity. The descriptive analysis provides article, author, and journal-related information (i.e., citations, year of publications, journals, etc.). This systematic literature review reports the trends in the topic, highlights existing research gaps, and suggests future research avenues. Research and managerial implications are discussed.

**Keywords:** green advertising; consumer behavior; social media; systematic literature review (SLR); research agenda; citation; greenwashing



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## 1. Introduction

Green advertising and green marketing have attracted significant interest among researchers [1–5] following the increasing concern among consumers and companies, in recent years, about sustainability issues and green practices. Any form of advertising emphasizing the relationship between a product or service and the biophysical environment is defined as green advertising [6]. Green advertising includes “promotional messages that can address the needs and desires of consumers interested in the environment” [7]. It is not limited to the placement of environmentally friendly products [8], but also supports and promotes a green lifestyle and creates an image of responsibility. In addition to promoting the product, green advertising gives equal emphasis to the production method [9].

An equally significant uprising trend in recent years is the rapid increase of social media and internet use by both consumers and companies. Brands are required to have a presence in online and social media communication due to the widespread use and significance of both media. “We are Social” and “Hootsuite” [10], report 4.62 billion (58.4% of the population) active social media users, while the average amount of time spent daily on social media is almost 2 and a half hours. Among the primary reasons people use social media platforms is to browse and seek inspiration for things to buy and do (27.7%) and to find products to purchase (26.3%). Hence, as Kumar et al. [11] suggest, business-generated social media content may have an impact on consumer behavior.

The need for businesses to promote their green strategy and green products, among others, places emphasis on green advertising approaches. With social media emerging as an important means of advertising, and revenues from social media advertising projected to

increase by 7.6% on an annual basis over the next 5 years [12], there is a significant increase in the research interest around green advertising on social media. In recent years, literature reviews in green marketing and green advertising highlight research trends and gaps. Interest in mapping research in the specific field has started to increase from 2020 onwards. Agarwal and Kumar [13] provide a discussion of green advertising trends over the past 30 years. Taylor and Carlson's [14] literature review highlights the importance of green advertising and the research carried out on social media advertising.

Although interest in both green advertising and social media has been a significant uprising trend in recent years, there has not been a literature review focusing on green advertising in social media. Hence, it is the objective of the present study to fill in this research gap and provide a comprehensive discussion of green advertising in social media, and the trends and gaps in the literature. A total of 221 relevant articles published between 2011 and 2022 have been located for the systematic literature review in order to compile the most recent research on green advertising in social media. The results are analyzed and presented in light of the trends in the field, the classification of the ten most-cited articles, the geographic distribution of research, the journal activity, the articles, and the most important thematic categories. As consumer awareness of environmental issues is dramatically increasing, it is vital to explore the research trends and gaps in the topic alongside the implications for advertisers and practitioners.

In particular, the following research questions are addressed:

**RQ1:** What are the most basic definitions of green advertising and what are the main variables (independent/dependent) used?

**RQ2:** What are the theories that have been used in research for the specific field?

**RQ3:** To what extent has green advertising on social media received attention in the current literature?

**RQ4:** What are the major themes in the existing research in green advertising on social media?

**RQ5:** What are the research gaps and directions for future research?

## 2. Research Methodology

### 2.1. Research Strategy

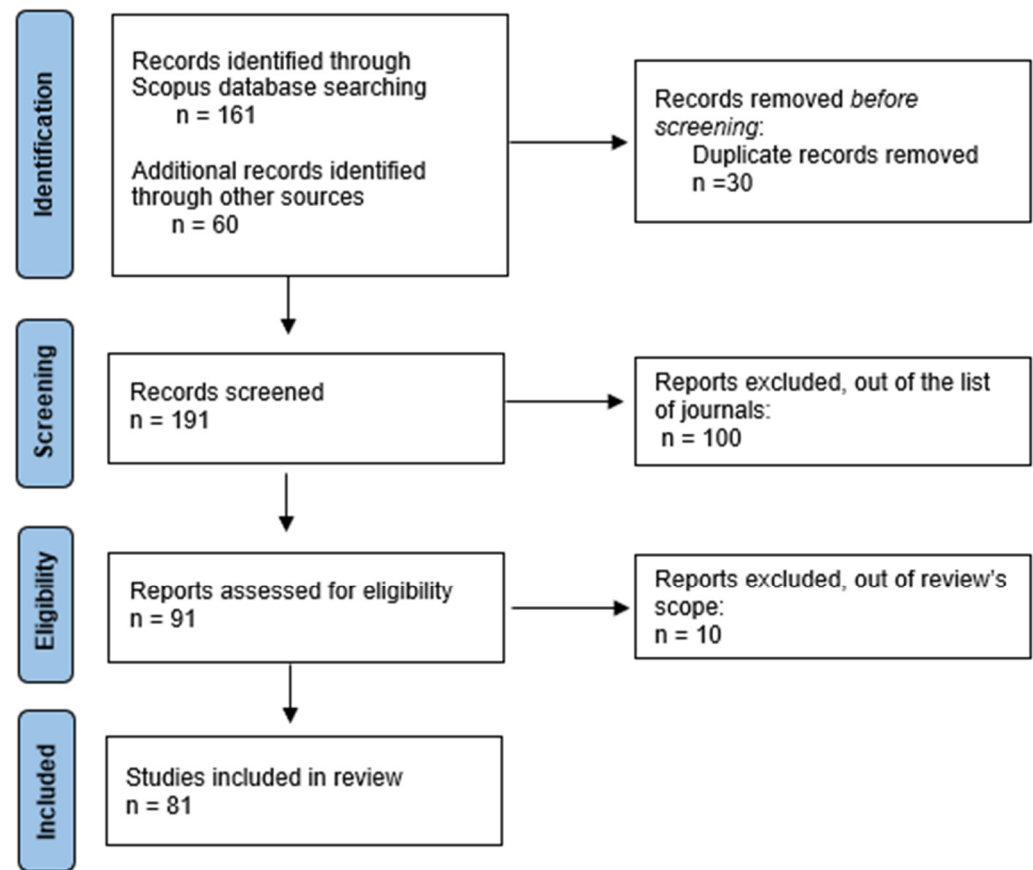
We conducted a systematic literature review to collect all pertinent data that comply with the pre-established eligibility requirements to respond to the study questions. The review was conducted according to the recommended reporting items for the systematic reviews and meta-analyses (PRISMA) approach [15]. The PRISMA technique guarantees clarity and transparency when reporting systematic literature reviews by using an evidence-based checklist and a four-phase flow diagram. The PRISMA method limits bias, minimizes chance effects, and strengthens the veracity of the data analysis (Figure 1).

Systematic literature reviews are preferred by researchers over other types of literature reviews because of their transparency, reliability and replicability of results, and limited bias [16].

### 2.2. Data Collection

Due to its extensive coverage and multidisciplinary nature, Scopus and Google Scholar databases were initially used to find papers to be included in the systematic review [17]. To locate the pertinent articles, a combination of words associated with these fundamental terms was used based on the following formula: TITLE-ABS-KEY ("green advertising" OR "green" OR "sustainable" OR "eco-friendly") AND TITLE-ABS-KEY ("social network" OR "social media" OR "Instagram" OR "Facebook" OR "Twitter" OR "LinkedIn" OR "digital marketing") AND TITLE-ABS-KEY ("consumer behavior" OR "consumer behaviour").

Tracking the publications and using practical screening were the next steps in the process. Only journal publications were included in the systematic literature evaluation guaranteeing that only peer-reviewed articles were taken into consideration. Additionally, only papers written in English were considered for the study.



**Figure 1.** Flow diagram for the selection of literature reviewed based on PRISMA.

In total, 221 articles were collected. Of them, 161 articles were tracked in Scopus and 60 articles in Google Scholar. Duplicate studies (30 articles) were removed prior to the screening stage which led to the rejection of one hundred articles not included in the “ABS 2021 Journal List” [18]. During data collection, the *Sustainability Journal* exhibited a significant coverage of sustainable/green marketing and green advertising. Ten articles related to the topic under study had been published in *Sustainability*. Hence, the specific journal, its profile, and the specific articles identified were included in the literature review. Subsequently, nine articles were discarded as they were outside the scope of the research. After careful consideration, 81 articles were selected for further analysis to provide answers to the research questions and to identify future directions and research gaps.

### 2.3. Data Synthesis and Analysis

All the pertinent articles underwent a descriptive and thematic analysis. A deductive approach was used in the descriptive analysis to classify the papers by year and journal of publication, the number of citations, and the methodology used. In contrast, the thematic analysis focused on analyzing the existence of green advertising in social media and was more inductive in character.

## 3. Descriptive and Thematic Analysis

### 3.1. Descriptive Analysis

To identify trends within this body of literature, the 81 selected papers were assessed with respect to the year of publication, journal, field of study, country of publication, citations, and methodological approach.

### 3.2. Year, Journal, and Geographic Distribution of the Literature

The chronological distribution of the papers and the number of citations are shown in Figure 2. All analyzed papers were released between 2011 and 2022. Seventy studies on the topic were published between 2015 and 2022. However, 2014 had only five articles, yet with 1339 citations. Between 2020 and 2022, the interest in green advertising and social media has skyrocketed as posts on the topic have reached double digits.

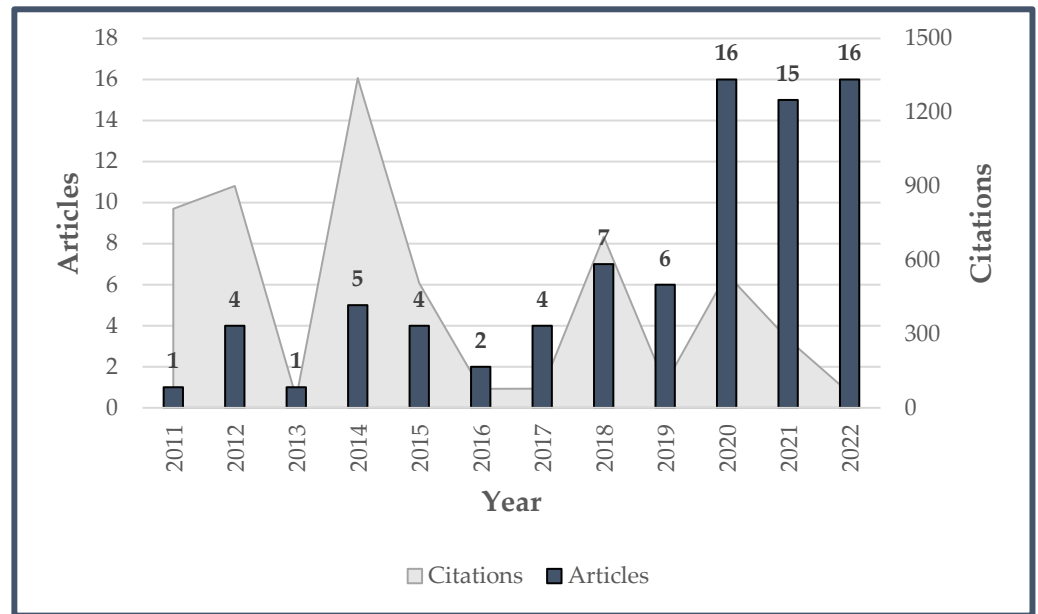


Figure 2. Publication volume and citations in the literature up to 2022.

We initially examined the distribution of the literature across several periodicals to ascertain the knowledge stocks and flows among experts. Table 1 presents the journals according to the number of papers published, their impact factor, and the total number of citations they receive (data were computed in August 2022). The Clarivate Analytics database was used to derive the journal impact factor (IF) (2022). Citations are the total number of times published works in each journal have been referenced as of August 2022. The eighty-one articles in our database appeared in a total of forty-eight journals. Only eleven of these journals published two papers or more, showing a high degree of fragmentation in the literature. The Sustainability Journal and the International Journal of Advertising were the most circulated with nine and five articles each.

The ten most-cited publications are listed in Table 2. Of them, the work of Parguel, Benoit-Moreau, and Larceneux [19] emerged as the most influential, with 808 citations, followed by the study of Nyilasy, Gangadharbatla, and Paladino [20] with 498 citations. The work of Kronrod, A., Grinstein, A., Wathieu [21] on the importance of the message and the use of assertive language on environmental communications ranked third with 451 citations.

In recent years, the most cited article was the study of Sun and Wang with ninety-six citations [22] in 2020. The most cited article in 2021 was related to sustainability and social media communication in luxury fashion brands [23]. Finally, in 2022, a study on green advertising in social media with purchase intention and digital engagement as mediators, has gathered fourteen citations to date [24].

**Table 1.** Journals–impact factor–citations.

Journal Title	No Articles	Impact Factor	Citations
<i>Sustainability</i>	9	3.889	162
<i>International Journal of Advertising</i>	5	5.888	609
<i>Journal of Advertising</i>	4	6.528	564
<i>Business Strategy and the Environment</i>	4	10.801	101
<i>Journal of Business Research</i>	4	10.969	93
<i>Journal of Cleaner Production</i>	4	11.072	329
<i>Journal of Marketing Communications</i>	4	5.5	63
<i>Journal of Advertising Research</i>	3	3.0341	68
<i>Journal of Business ethics</i>	3	6.331	1.365
<i>Global Business Review</i>	2	2.195	18
<i>Journal of Current Issues &amp; Research in Advertising</i>	2	0	24
<i>Others</i>	37	-	-

**Table 2.** Classification of the ten most-cited articles.

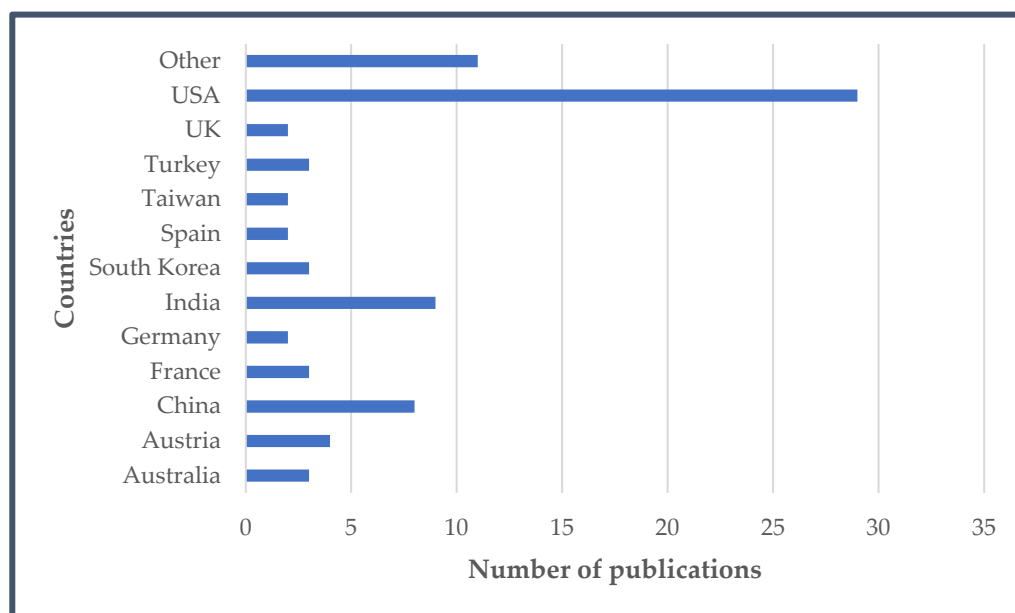
Article	Authors	Year	No of Citations	References
How Sustainability Ratings Might Deter ‘Greenwashing’: A Closer Look at Ethical Corporate Communication	Parguel, B, Benoît-Moreau F, Larceneux F	2011	808	[19]
Perceived greenwashing: The interactive effects of green advertising and corporate environmental performance on consumer reactions	Nyilasy G, Gangadharbatia H, Paladino A	2014	498	[20]
Go Green! Should Environmental Messages be So Assertive?	Kronrod A, Grinstein A, Wathieu L	2012	451	[21]
Green Claims and Message Frames: How Green New Products Change Brand Attitude	Olsen M, Slotegraaf R, Chandukala S	2014	450	[25]
Sustainable marketing and social media: A cross-country analysis of motives for sustainable behaviors	Minron E, Lee C, Orth U, Kim C, Kahle L	2012	268	[26]
Corporate communication, sustainability, and social media: It’s not easy (really) being green	Reilly A, Hynan K	2014	262	[27]
Message framing in green advertising: The effect of construal level and consumer environmental concern	Chang H, Zhang L, Xie G	2015	247	[28]
The influence of greenwashing perception on green purchasing intentions: The mediating role of green word-of-mouth and moderating role of green concern	Zhang L, Li D, Cao C, Huang S	2018	217	[29]
Misleading consumers with green advertising? An affect–reason–involvement account of greenwashing effects in environmental advertising	Schmuck D, Matthes J, Naderer B	2018	206	[30]
Can evoking nature in advertising mislead consumers? The power of ‘executional greenwashing’	Parguel B, Benoit-Moreau, F., & Russell, C. A.	2015	203	[31]

All papers were classified according to the methodological approach. As indicated in Table 3, most studies were research papers (96.34%) and only 3.66% were classified as literature reviews.

**Table 3.** Paper type and method of choice.

Paper Type	Method	Total	Percentage %
Theoretical	Literature Review	3	3.44%
	Research Paper	78	96.56%
	Overall Total	81	100%

The geographic origin of publications and their authors indicate the distribution of studies on green advertising in social media. Studies have been published in twenty-five different nations (Figure 3), with the United States of America leading the ranking (29 articles), followed by India with nine, and China with eight documents. Four studies were published in Austria and Australia. France, South Korea, and Turkey had three papers each. The United Kingdom, Spain, Germany, and Taiwan had only two documents.



**Figure 3.** Geographic distribution of research.

A descriptive analysis indicated that *Sustainability*, with nine related articles and 162 references, is the principal journal in the topic. *The International Journal of Advertising* is also significant with five articles and 609 references. In total, 96.34% of the papers that have been published are research papers, while the research interest has started to rapidly increase in recent years. There were sixteen published papers in 2020, fifteen in 2021, and sixteen articles in 2022.

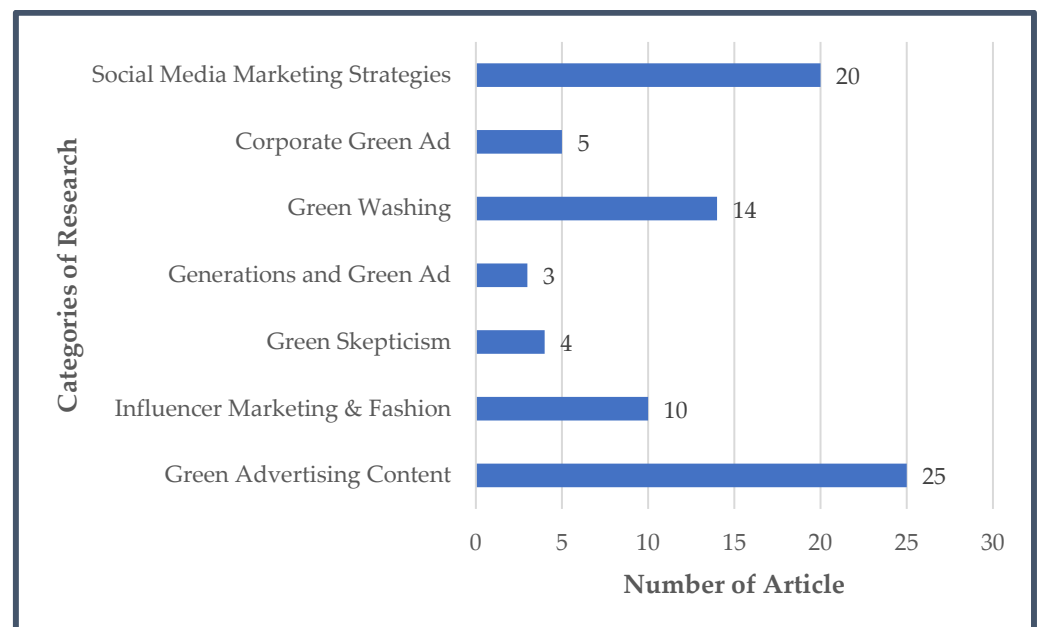
### 3.3. Thematic Analysis

A bottom up/inductive approach was used in the thematic analysis. The seven principal thematic categories that emerged (Table 4) include (1) green advertising content, (2) greenwashing, (3) green skepticism, (4) generations and green advertising, (5) influencer marketing and green advertising, (6) corporate green advertising, and (7) social media marketing strategies.

**Table 4.** Main categories of research.

Main Topic	Sample References
Green Advertising Content	[2,21,24,26,28,32–51]
Influencer Marketing & Fashion	[23,52–60]
Green Skepticism	[61–64]
Generations and Green Ad	[65–67]
Green Washing	[19,20,29–31,68–76]
Corporate Green Ad	[27,77–80]
Social Media Marketing Strategies	[13,14,22,26,81–96]

As shown in Figure 4, the research so far has focused on the content of green advertising and discusses message framing, the use of emotions, and research on consumer trust in the company and advertising. Significant research has also focused on greenwashing and green advertising, followed by influencer marketing in green advertising and social media.

**Figure 4.** Relevant articles included in the review classified per topic.

The remaining analysis addresses important information (RQ1, RQ2) regarding the most basic definitions used, the basic theories used, and the most important variables (dependent/independent) as well as the mediators and the moderators. Table A1 (see Appendix A) presents a summary of theories used in green advertising and social media research. The Construal Level Theory, the Elaboration Likelihood Model, the Prospect Theory, and the Signaling Theory appeared more frequently (2 papers or more).

We further collected the variables used in the sampled papers. ‘Green Purchase Intention’ was the most studied one as it was discussed in fourteen papers. ‘Attitude toward Advertising’ and ‘Attitude towards Brand’ were the dependent variables in six studies. ‘Attitude toward Green Products’ also seemed to be of interest and was discussed in five papers.

Table 5 summarizes the main definitions of green advertising reported in our study.

**Table 5.** Main definitions related to green advertising.

Definitions	Authors	Sample References
Green advertising is defined as any ad that meets one or more of the following criteria: 1. Explicitly or implicitly addresses the relationship between a product/service and the biophysical environment. 2. Promotes a green lifestyle with or without highlighting a product/service. 3. Presents a corporate image of environmental responsibility.	Iyer and Banerjee 1993; Banerjee, Gulas, and Iyer 1995	[6,97]
Advertising messages promoting sustainable goods or services are often labeled as green advertising.	Minton et al. 2012	[26]
Environmental advertising, also referred to as green advertising, can be defined as the attempt to influence consumers' cognitions, attitudes, and behaviors by promoting environmentally friendly features in the production, distribution, or recycling of products or services.	Matthes 2019	[86]
Corporate environmental advertising typically contains three elements. First, the advertisement presents a general statement of corporate concern for the environment. Second, the advertisement describes how the corporation has initiated a number of activities which demonstrate its concern and commitment to environmental improvement. Third, the advertisement provides a description of specific environmentally related activities in which the corporation is engaged and/or outcomes for which the corporation takes credit.	Davis 1994	[98]
Green advertising is defined as "promotional messages that may appeal to the needs and desires of environmentally concerned consumers."	Zinkhan and Carlson 1995	[7]

### 3.3.1. Green Advertising Content

The principal thematic category among the studies analyzed was green advertising on social media. The objective of these articles was the control of green advertising content with respect to the framing of messages and the use of emotions. According to Kronrod, Grinstein, and Wathieu [21], recipients respond more favorably to insistent requests in areas they see as vital but require more suggestive appeals when they are initially unconvinced. Pittman, Oeldorf-Hirsch, and Brannan [24] found that brand authenticity is a key component of green brand success in social media. In the context of green advertising, Lee and Cho [34] investigated the influences of message framing, image valence, and problem participation on consumer attitudes towards the ad and brand as well as purchase intention. This study revealed that consumer opinions were influenced by the consistency between message framing and picture valences. In gain-framing messages with a positive picture, consumers developed favorable brand attitudes; however, when it came to loss-framing with a negative image, the attitude was negative. Chang, Zhang, and Xie [28] also found that customer attitudes and purchase intention are more positively affected by congruency between loss frame and low-level construal as well as by congruency between gain frame and high-level construal. Additionally, prior research indicates that environmental sustainability advertising has a stronger influence than social sustainability advertising [43].

In order to encourage consumer engagement with green messages in social media contexts, Kyu Kim et al. [38] suggested an optimum message strategy. Their findings show that adopting other benefit appeals rather than self-benefit appeals result in greater positive consumer engagement when the message claim is abstract. Consumers are motivated to interact with green product advertising messages when the appeal is abstract, and the message is linked to advantages for other people. The interaction effect of claim specificity and benefit appeals type on consumer involvement in social media was found to be moderated by consumers' self-construal level.



According to Baek et al. [46], participants exhibited higher social media engagement and behavioral intentions to recycle worn jeans when aggressive Twitter tweets contained the smiley-face emoji. When (non) aggressive Facebook messages (did not) used emojis, participants showed greater social media engagement and behavioral intentions to sign a petition for reducing plastic pollution. Shin and Ki's [51] investigation into the Twitter messages of for-profit and non-profit organizations revealed that non-profits are inclined to convey a badly deteriorated environment, whereas for-profits' communication promotes green products and production processes with specific numerical data. The study also found that tweets featuring for-profit businesses and messages that emphasize green items received many likes and replies.

Sun and Wang [22] aimed to comprehend customer intentions to purchase products with an eco-label. Their findings demonstrate that responsiveness to green advertising positively influences intention. This relationship is further regulated by promotion focus and is mediated by the system and personal trust. However, a prevention focus does not influence the association between receptivity to green advertising and purchase intention. A structural equation modeling (SEM) approach by Tanford, Kim, and Kim [35] demonstrated that cause-related marketing (CRM) advertising with a positive message and positive affective priming created a favorable perception of hotels and increased booking intentions. The effects of image on a variety of outcomes, such as booking intention, desire to pay extra, and word-of-mouth, were further amplified by pro-environmental sentiments.

Research on emotions by S. Park [47] explored the impacts of emotional framing and celebrity engagement on public views and behaviors. The results showed that fear appeals were more effective than hope appeals in encouraging activism, but emotional framing had no effect on any other action. Moreover, Kapoor, Balaji, and Jiang [32] investigated the impacts of the message source (hotel vs. social media influencer) and message appeal (sensual vs. guilt) on perceived environmental corporate social responsibility and the intention to stay at the eco-friendly hotel. Their research shows that sustainability messages posted on social media by eco-friendly hotels are more persuasive than those posted by SMI because they appeal to the senses rather than the conscience. According to Pittman, Read, and Chen [39], social media posts with low information and high-fear (emotional) appeals were the most successful at fostering purchase intention and digital engagement. Specifically, C. T. Chang [2] found that when a low-proximity issue was addressed to people with low environmental consciousness, guilt appeals were no more successful than no-appeals. When advocating a high-proximity issue to highly conscious people, the guilt appeals backfired. Examining the emotions of fear and hope, Lee, Chang, and Chen [49] found that a fear appeal enhanced viewers' positive attitudes (global frame of ad). Hope had similar results but only when the environmental issue was framed as local. Finally, according to the findings of Kao and Du [40], advertising designs with self-reference and solid arguments have the best effects.

Several researchers focused on the value of credibility and loyalty. Kim, Shoenberger, Kwon, and Ratheshwar [48] state that a narrative message style is more credible and produces better green evaluations. Their results support the theoretical assumption that the effects of the message variables on green evaluations are mediated by message credibility. Green new product introductions can improve brand attitude, while the quantity of green messages, the product type, and their source credibility influence the extent to which new green products change brand attitude [25].

### 3.3.2. Greenwashing

Greenwashing is "the act of deceiving consumers on the environmental practices of a company or the environmental performance and positive communication about environmental performance," TerraChoice ([99], p. 1). Research in this thematic area focuses on the investigation of greenwashing as part of green advertising in social media.

Looking into the Volkswagen emission crisis in 2015, Topal et al. [70] examined its effects on consumer engagement with Facebook brand pages in France, Germany, Turkey,

and the United Kingdom. Online consumer engagement was negative in the UK and Turkey, positive in Germany, and invariable in France during the fourth quarter of 2015, highlighting a cultural aspect in greenwashing attitudes. Parguel, Benoit-Moreau, and Russell [31] proposed the use of a traffic-light label (use of green, orange, and red color) that displays environmental performance data in a particular area of the advertisement as a workable compromise to control “executive greenwashing.” Based on Fernando, Suganthi, and Sivakumaran [68], two themes prevail in the discussion on greenwashing: marketing communication credibility and impact on the natural environment.

According to Neureiter and Matthes [75], simply concrete compensation claims cannot significantly improve perceptions of greenwashing. However, consumers who are truly knowledgeable about current environmental issues can spot greenwashing in the actual compensation claims. While imprecise claims do not increase consumers’ perception of greenwashing, Schmuck, Matthes, and Naderer discovered that false claims increase consumers’ perception, irrespective of their environmental knowledge or concern, and negatively affect customers’ opinions of advertising and the associated brands [30]. According to Zhang et al. [29], customer views of greenwashing not only have a negative direct influence on consumers’ intentions to make green purchases, but also have a negative indirect impact via green WOM.

Nyilasy, Gangadharbatla, and Paladino [20] demonstrated how a “perceived greenwashing effect” develops when business environmental performance (actions) and green advertising (words) interact. Consumer responses to instances where green advertising themes and genuine corporate social responsibility (CSR) intersect are what we refer to as perceived greenwashing. Since all these and more companies use the communication of corporate social responsibility, it seems that consumers are confused, which reinforces the greenwashing. According to the Parguel, Benoit-Moreau, and Larceneux [19] research, sustainability ratings could prevent greenwashing and encourage companies to adopt corporate social responsibility actions. The goal of Sailer, Wilfing, and Straus [72] was to uncover tactics used to greenwash, bluewash, or completely hide a brand’s involvement in the unsustainable sales event known as Black Friday. According to their results, most businesses use multiple greenwashing techniques. Sustainable brands not only give a positive spin to an unsustainable sales event by using so many different greenwashing and bluewashing techniques, but they also give the go-ahead for their use in all advertisements. It becomes more challenging for consumers to make sustainable purchasing decisions when sustainable brands enable conventional brands to engage in greenwashing and bluewashing as typical practices.

### 3.3.3. Green Skepticism

Consumers, businesses, and stakeholders have raised the issue of green skepticism in recent years. Skepticism refers to a person’s propensity for doubt, disbelief, and questioning. The consumer’s perception of greenwashing practices is associated with their skepticism about a firm’s green initiatives [100].

Consumers’ skepticism affects a company’s reputation and performance. Hence, understanding the causes of consumers’ mistrust can be crucial for the successful implementation of a company’s sustainability program. Farooq and Wicaksono [63] suggested that prior instances of greenwashing are a principal cause of customer distrust. Looking at consumer perceptions of sustainability that go unspoken, they found that consumers with a high level of skepticism prefer that businesses keep a low sustainability marketing profile. Consumers are less skeptical of businesses that do not advertise their sustainability practices compared to those that do.

Kyu Kim et al. [38] suggested that an improved messaging strategy would encourage consumer interaction with green messages projected in social media. Their results specifically showed that leveraging other benefit appeals rather than self-benefit appeals result in higher levels of positive consumer engagement when the message claim is abstract. Consumers are motivated to interact with green product advertising messages when the

appeal is abstract, and the message conveys advantages for other people. The interaction effect of claim specificity and benefit appeals type on consumer engagement in social media is moderated by consumers' self-construal level.

Luo et al. [61] studied the underlying process linking consumer skepticism of green advertising in social media with their desire to make a green purchase [60]. They discovered that social media skepticism about green advertising negatively affects consumers' intentions to make green purchases. Additionally, Ulusoy and Baretta [62] suggested that consumers with increased environmental concern have a higher purchase intention for green products but low brand trust in companies with green claims in their advertising. Consumers with low environmental concern have high brand trust but low purchase intentions.

#### 3.3.4. Generations and Green Advertising

Only three articles discussed green advertising with respect to consumer generations. Bedard and Tolmie [66] investigated how millennials in the USA use social media, and how online relationships affect their intentions to make green purchases. The study also examined how social media usage, online interpersonal influence, and aspirations to make green purchases were related to the cultural characteristics of individualism–collectivism and masculinity–femininity. Social media use and online peer influence had a significant positive relationship with intentions to make green purchases. Singh, Pandey, and Jha [67] suggested that in order to promote green products on Facebook to millennials, marketing managers need to pay particular attention to five factors: value communication (VC), safe navigation (SN), endorsements, webpage content (CW), and e-word-of-mouth (e-WoM), as well as their related sub-factors.

Sun and Xing [65] claimed that Generation Z's intentions to make green purchases are influenced by information sharing on social media. They discovered that: (1) sharing information on social media has a positive impact on consumers' intentions to buy green products; (2) perceived green value and subjective norms are thought to partially mediate the relationship between information sharing and consumers' intentions to buy green products; (3) occupation mediates the moderating role of subjective norms in social media information sharing and green intention, such that the mediating role of subjective norms is stronger for consumers who are not students.

#### 3.3.5. Influencer Marketing and Green Advertising

Studies on green advertising and social media in the fashion industry have focused on influencer marketing. Singh et al. ([101], p. 8) defined social influence marketing as "a technique that uses social media (content created by regular people using highly accessible and scalable technologies such as blogs, message boards, podcasts, microblogs, bookmarks, social networks, communities, wikis, and vlogs) and social influencers (regular people who have an outsized influence on their peers by virtue of how much content they share online)".

Wielki's findings [53] suggested that using digital influencers in activities is particularly promising. This potential primarily pertains to the efficient dissemination of knowledge about a good or service, the influence on improved brand recognition, and the impact on the sales volume of goods and services provided by businesses. Moreover, through social media, automotive companies can directly and interactively communicate information about the environment, society, and corporate governance for brand valuation, the latter of which offers proof of brand value co-creation [57]. Schüller and Doubravský [56] introduced fuzzy reasoning as a formal method for identifying the variations in how customers perceive different communication channels, suggesting that diverse groups have varying perceptions. Martins [55] found that the components of green marketing have a distinctly favorable impact on perceived SME profitability as well as green consumer behavior. In addition, green buying behavior strongly mediates the association between perceived SME profitability and green marketing aspects.

According to Pittman and Abell [54], green influencers appear to profit specifically from lower popularity indicators. An improved attitude toward a sponsored product and an increase in purchase intentions are the effects of a higher perception of trust among green influencers who are less well-known. Additionally, following exposure to a promotional post by a green influencer with a small following, consumers are more ready to donate larger sums to a connected organization. The outcomes of Kumar and Tripathi [52] supported the existence of a strong influence of celebrity credibility on perceptions of green advertising. However, it had no real effect on consumers' attitudes toward the brand or their intentions to buy eco-friendly goods. Moreover, it was evident that the influence of celebrity credibility on purchase intent is moderated by attitudes about advertising and brands.

Kwon and Lee [60] showed that the fashion sector employs various CSR advertising campaign tactics, whereas Zhang, Zhang, and Zhou [59] tried to present a current portrayal and analysis of the consumer's perspective toward the sustainability of fast-fashion products in the UK. Exploring the connection between media communication and sustainability and its impact on eWOM and purchasing intentions in luxury and non-luxury contexts, Kong, Witmaier, and Ko [23] found that in a cultural context with strong awareness of the need for sustainability, sustainable communication is more effective for non-luxury firms. In a recent study, Brydges, Henninger, and Hanlon [58] discovered that brands describe sustainability in a variety of ways depending on the situation.

### 3.3.6. Corporate Green Advertising

The international "green movement" and corporate marketing have combined to materialize corporate green advertising [102]. Corporate green advertising is a form of internal communication that can be viewed as "a public relations vehicle" meant to shape public opinion [103,104]. Articles in this thematic area focus on controlling the effectiveness and dissemination of corporate social responsibility advertising messages in social media.

In an empirical study, Reily and Hynan [27] examined how sixteen multinational firms from four distinct industry sectors use social media sites and corporate social responsibility (CSR) reports to spread sustainability-related information. Their findings revealed that the types of sustainability activities reported, the metrics used, and the communication media used vary by firm and industry. Green enterprises are also more active than non-green firms in addressing sustainability and in general social media activity. Additionally, Maziriri [77] revealed that environmentally friendly packaging and marketing boost both the competitive advantage and company performance.

According to Knight, Haddoud, and Megicks [79], factors including information quality and source reliability interact to affect how widely sustainability messages are spread. The effectiveness of marketing strategies for the first "green" mass-produced car, the Toyota Prius, was specifically discussed by Garland, Huising, and Struben [78].

### 3.3.7. Social Media Marketing Strategies

Ghouri et al. [90] suggested that the government, marketers, and educators can increase awareness of environmental deterioration and enhance green purchase behavior through environmental concern, social influence, and self-image with the presence of green advertisement. The above can increase green purchase behavior, making people greener and environmentally conscious in their daily life. Park, Kwon, and Kim [96] emphasized the significance of client-generated green information in order to promote firm-initiated green marketing, which in turn improved customer satisfaction and behavioral intention. Customers' levels of environmental consciousness may also influence their responses.

In their study, Gupta and Syed [94] discovered that four social media marketing strategies—word of mouth, interaction, entertainment, and customization—have an impact on consumer attitudes toward green products. Additionally, trendiness is found to have little bearing on predicting customer attitudes, whereas a favorable attitude influences consumers' willingness to pay a premium for environmentally friendly goods. Regarding the usage of Facebook and Twitter, Minton et al. [26] suggested that involvement motives

only influence anti-materialistic beliefs and organic food purchases in the USA, Germany, and South Korea. Other countries do not recycle or adopt green transportation practices. Apart from recycling, where Germany leads, collectivist nations such as South Korea have the highest levels of social media use and sustainable practices.

The work of Bailey, Mishra, and Tiarniyu [85] led to the creation and validation of a scale (REGRAD) to assess consumers' openness to green advertising. REGRAD is advanced as a measurable individual difference factor that can be used to segment consumers depending on their preferences. This scale can be used to identify customers who will be more receptive than others to such marketing efforts by moderating attitudes and intentions about a firm and its green activities.

Many researchers tried to understand consumers' intentions and behaviors. Sun and Wang [22] found that attitude, subjective norms, and perceived behavioral control positively affect purchase intentions, while price consciousness negatively affect purchase intentions. Product knowledge positively affects consumers' attitudes and purchase intentions, while perceived consumer effectiveness positively affects product knowledge but negatively affects price consciousness. Between purchase intention and perceived consumer effectiveness, there is no significant relationship. According to Chi [93], eco-brand is the most important factor influencing green consumption intention, indicating a significant relationship between eco-brand and eco-label with green consumption intention. Additionally, motivation and environmental concern attenuated the relationship between social media and the desire to engage in green consumption. Adopting a consumer perspective, Kahraman and Kazançoğlu [83] introduced a framework based on eight themes: perceived greenwashing, perceived green image, price perception, environmental concern, green trust, skepticism, perceived risk, and purchase intention. Finally, Burucuoglu and Erdogan [89] found that consumers' ethical positions have significant relationships with other parameters but a low predictive value for consumption, responsible behaviors, and social media behaviors.

#### 4. Conclusions

This study provides an in-depth analysis and synthesis of the body of knowledge so far accumulated in green advertising and social media. At the same time, it addresses three main research questions regarding the thematic analysis (RQ3–RQ5). It is understandable that green advertising in social media is a topic with a rapid increase in interest. Although sporadic research efforts can be detected since 2011, most of the literature is accumulated from 2018 onwards. According to our findings, there is a research trend with respect to message framing. Our analysis confirms that environmental sustainability is not just a temporary trend but an issue with rising concern in the scientific community, businesses, and advertisers.

This study discussed eighty-one articles, listed the bibliometric data of articles, and summarized the extracted articles based on seven thematic areas. When the articles were analyzed by topic, most of the studies revolved around message framing and the emotions used by advertisers. In addition, significant research focused on understanding the consumer's behavior alongside different social media such as Facebook, Twitter, and Instagram.

Our analysis highlighted significant research gaps, thus providing useful guidelines for future research. The relationship between generations and the emerging social media needs to be further explored. The different emotions evoked by advertisements with an emphasis on the under-researched humor could also be further explored.

This research highlights significant implications for managers and scholars. For managers, the body of work shows that green advertising is an ever-growing topic. Traditional advertising does not seem to be the best approach for green products and services. Thus, managers need to add green advertising to their collection. Most research studies on green advertising have emanated from business and communication, indicating the importance of the topic from a managerial perspective. This study provides useful information about

consumers' behavior and intentions toward green products and services. At the same time, managers need to be careful when promoting their sustainability strategy and green products, as green skepticism is a rising trend among consumers. Green communication seems to be a process that requires proper understanding of consumer behavior, proper social media platform selection, and careful positioning.

In terms of the implications for scholars, this is the first study to offer a review on green advertising. In addition to a statistical overview, it also provides a thematic classification of the topics covered and outlines gaps for future research. Much of the research studies in this area originated from the United States, indicating the enormous potential of this topic to be studied in other countries. With more awareness created around green advertising, more researchers will be motivated to explore the topic. On a final note, our study could be a toolkit for researchers who want to explore green advertising, as we concentrated on the most significant studies (until 2022) quoting useful statistics and information.

### 5. Limitations, Research Gaps, and Future Research

While this is the first study to provide an analytic review of green advertising in social media, it has certain shortcomings. The selected papers are written in English only. As a result, this selection does not cover all the research networks and hotspots in the field. In addition, the papers in this study were selected from Scopus and Google Scholar, which do not guarantee full coverage of the existing papers. Moreover, all articles selected had to be included in the 2021 "ABS List" [18], resulting in the omission of studies that were not present in the list.

Based on the systematic literature review, five research gaps were identified in the thematic areas that emerged from the above analysis. These gaps highlight avenues for future research. Regarding the content of green advertising, it seems that most research has focused on the examination of emotions such as fear and hope, the positive and negative framing of messages, and green advertising's influence on both the message and company's credibility. Thus, there seems to be room to expand research in the topic exploring humor and the emotion it evokes (mirth). At the same time, it would be interesting to consider the framing of advertising messages with personal gain or loss messages and not only with messages focused on the environment. Future research could also focus on the effect of graphics and music usage on green advertising.

Exploring generations and their behavior towards green advertising is a current topic that merits discussion. It would be good to examine the behavior of Generation z with respect to green advertising. It is also necessary to explore the specific topics on social media that have emerged in recent years (TikTok) and seem to be claiming the attention of consumers and an ever-growing market share. Almost 40% of Generation Z consumers choose TikTok for an online search instead of Google [105].

Moreover, it appears that the way in which green advertising affects brand personality has not been examined to date. In future research, it would be interesting to highlight the way in which a brand's green personality is formed. In prior experimental procedures, basic products such as detergents, cosmetics, and clothes, have been used. Future research could study the use of green advertising and social media to promote high involvement products and services.

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## Appendix A

**Table A1.** List of the theories used.

Theories and Model	Sample References
Agenda Setting Theory	[68]
AIDA Model	[67]
Altruistic Consumer Utility	[74]
ARI Model	[30]
Anthropological Theory of Consumer Behavior	[59]
Attitude Behavior Context Theory	[29]
Conspicuous Consumption Theory	[37]
Construal Level Theory	[28,38]
Dual Coding Theory	[33]
Ecologically Conscious Consumer Behavior	[85]
Economic Theory of Consumer Behavior	[59]
Elaboration Likelihood Model	[40,54]
Fuzzy Reasoning Theory	[56]
Guilt Appeals Theory	[2]
Information Adoption Model	[79]
Institutional Theory	[69]
Legitimacy Theory	[69]
Marketing Theory of Consumer Behavior	[59]
McGuire Communication Persuasion Matrix	[32]
Natural Resource Based View Theory	[77]
Persuasion Knowledge Model	[76]
Psychological Theory of Consumer Behavior	[59]
Priming Theory	[35]
Prospect Theory	[28,34,41]
Psychophysiology Theory	[41]
Schema Incongruity Processing Theory	[75]
Signaling Theory	[50,57]
Social Impact Theory	[66]
Social Judgement Theory	[39]
Social Media information Sharing	[65]
Social Norms Theory	[24]
Stimulus Organism Response Model	[50]
Technologies for Pro-Environmental Action Model	[94]
Theory of Consumption Values	[89]
Theory of Planned Behavior	[22]
Theory of Reactance	[75]
Theory of Reasoned Action	[62]
Underpinning Theory	[90]
Uses and Gratification Theory	[94]

**Table A2.** List of the variables.

Dependent Variables	Independent Variables	Mediators	Moderators	Authors	Articles	
Ad deceptiveness	Literacy intervention			Fernandes et al. 2020	[76]	
Ad trust	Literacy intervention			Fernandes et al. 2020	[76]	
Advertising effect	Environmental protecting emotion, green advertising design		Emotions	Kao & Du, 2020	[40]	
Attention	Issue frame as hope or fear			Lee et al. 2017	[49]	
Attitude toward climate change	Emotion (fear or hope)			S. Park, 2020	[47]	
Attitude toward ad	Literacy intervention			Fernandes et al. 2020	[76]	
	Message appeal		Message objectivity	H. Chang et al., 2015	[28]	
	Environmental involvement			Sahin et al., 2020	[33]	
	Message framing		Issue involvement	Lee & Cho, 2021	[34]	
	Consumers' confusion, green message type	Green trust		Product type	Lim et al., 2021	[45]
	Vague/false/combined vague/combined/false greenwashing claim			Environmental involvement, perceived greenwashing, virtual nature experience	Schmuck et al., 2018	[30]
Attitude toward brand	Message appeal			H. Chang et al., 2015	[28]	
	Message framing			Lee & Cho, 2021	[34]	
	Literacy intervention			Fernandes et al. 2020	[76]	
	Brand evaluation		Ad believability, brand positioning, green message		Vilasanti da Luz et al., 2020	[36]
	Vague/false/combined vague/combined/false greenwashing claim			Environmental involvement, perceived greenwashing, virtual nature experience	Schmuck et al., 2018	[30]
	Green advertising, corporate environmental performance				Nyilasy et al., 2012	[71]
Attitude toward the green issue	Issue frame as hope or fear			Lee et al. 2017	[29]	
Attitude toward the hotel	Environmental involvement			Sahin et al., 2020	[33]	



Table A2. Cont.

Attitude toward the product	Entertainment, interaction, customization, trendiness, word of mouth		Gupta & Syed 2022	[94]	
	Consumers' intentions to purchase green products, consumers' price consciousness		Sun & Wang, 2020	[22]	
	Environmental concern, company credibility, purchase credibility		Stokes & M. Turri, 2015	[92]	
	Influencer type, popularity metrics		Pittman & Abell, 2021	[54]	
	Advertising appeal, environmental consciousness, issue proximity		C.T Chang, 2012	[2]	
Behavioral intentions	Green information on webpage (firm-initiated vs. customer-generated green information)	Customers' green consciousness	E. Park et al., 2021	[96]	
	Issue frame as hope or fear		Lee et al. 2017	[49]	
	Advertising appeal, environmental consciousness, issue proximity		C.T Chang, 2012	[2]	
Brand evaluation	Abstract/concrete/vague/false/control compensation condition	Topical environmental knowledge, perceived greenwashing	Neureiter & Matthes, 2022	[75]	
	Sustainability/fashion consciousness, purchase behavior and attitude, fashion purchase behavior and attitude, ad skepticism, attitude towards Black Friday		Sailer et al., 2022	[72]	
Business performance	Green packaging, green advertising	Competitive advantage	Maziriri, 2020	[77]	
Company attitude	Green appeal/green message from company	Receptivity to green advertising	Bailey et al., 2016	[85]	
Company evaluation	Message appeals	Message objectivity	Kang & Sung, 2022	[37]	
Company trustworthiness	Green appeal/green message from company	Receptivity to green advertising	Bailey et al., 2016	[85]	
Consumer behavior	Sustainability perception	Brand attitude	Trust, brand luxury	Kong et al. 2021	[23]
Consumer engagement	Ad appeal, benefit association, involvement	Self-enhancement	Kyu Kim et al., 2020	[38]	

Table A2. Cont.

Consumption values	Responsible consumption behaviors, responsible consumption reintegration, social media behaviors		Burucuoglu & Erdogan, 2019	[89]	
Corporate brand evaluations	Sustainability ratings, intrinsic/extrinsic motives		Parguel et al., 2011	[19]	
Customer attitudes	Green information on webpage (firm-initiated vs. customer-generated green information)	Customers' green consciousness	E. Park et al., 2021	[96]	
Digital engagement	Fear appeals, information appeals	Pollution ideation	Pittman et Al., 2021	[39]	
Electronic word of mouth	Emotion, CRM, image, environmental attitudes		Tanford et al., 2020	[35]	
Environmental attitude	News media, social media, digital engagement	Brand quality, brand authenticity	Pittman et al., 2022	[24]	
Ethical positions	Consumption values, responsible consumption behaviors, social media behaviors		Burucuoglu & Erdogan, 2019	[89]	
Fight shame	Abstract/concrete/vague/false/control compensation condition	Topical environmental knowledge, perceived greenwashing	Neureiter & Matthes, 2022	[75]	
Government support	Emotion (fear or hope)		S. Park, 2020	[47]	
Green advertising	Greenwashing attributes in NGO blogs/in newspaper articles		Fernando et al., 2014	[68]	
Green brand credibility	Green buying behavior	Green advertisement, green brand evaluation	Mansoor et al., 2022	[44]	
Green brand knowledge	Green buying behavior	Green advertisement, green brand evaluation	Mansoor et al., 2022	[44]	
Green consumer behavior	Environmental awareness, environmental concern, self-image, self-influence, ethics		Gandhi & Sheorey, 2019	[87]	
Green consumption values	Eco brand social media, Eco label	Motivation	Environmental concern	Chi, 2021	[93]
Green evaluations	Message style, message sidedness, message specificity	Message credibility	Kim et al., 2022	[48]	

Table A2. Cont.

Green messages of for-profits	Message orientation and framing		Shin & Ki, 2022	[51]
Green messages of non-profits	Message specificity and environmental issues and additional features in content		Shin & Ki, 2022	[51]
Green perception	Green information on webpage (firm-initiated vs. customer-generated green information)	Customers' green consciousness	E. Park et al., 2021	[96]
Green purchase behavior	Social influence, self-image, environmental concern	Green advertising	Ghouri et al., 2018	[90]
	Receptivity to green advertising, personal norm, environmental consciousness	Understanding greenwashing	Jog & Singhal, 2020	[73]
Image	Emotion, CRM, image, environmental attitudes		Tanford et al., 2020	[35]
Intention to stay at the eco-friendly hotel	Message appeal	Message source, perceived Environmental CSR	Kapoor et al., 2021	[32]
Interdependent self-construal	Green advertising skepticism	Information utility	Luo et al., 2020	[61]
Message attitude	Green appeal/green message from company	Receptivity to green advertising	Bailey et al., 2016	[85]
Participation in activism	Emotion (fear or hope)		S. Park, 2020	[47]
Perceived behavior control	Consumers' intentions to purchase green products, consumers' price consciousness, attitude toward green products		Sun & Wang, 2020	[22]
Perceived consumer effectiveness	Consumers' intentions to purchase green products, consumers' price consciousness, attitude toward green products		Sun & Wang, 2020	[22]
Perceived effort	Sustainability ratings, intrinsic/extrinsic motives		Parguel et al., 2011	[19]
Perceived environmental CSR	Message appeal	Message source, perceived environmental CSR	Kapoor et al., 2021	[32]
Perceived motive toward a CSR activity	Message appeals	Message objectivity	Kang & Sung, 2022	[37]
Perceived SME profitability	Green marketing dimensions	Green purchase behavior	Martins, 2022	[55]
Product knowledge	Consumers' intentions to purchase green products, consumers' price consciousness, attitude toward green products		Sun & Wang, 2020	[22]

Table A2. Cont.

	Emotion, CRM, image, environmental attitudes		Tanford et al., 2020	[35]
	Social media usage, online interpersonal influence		Femininity, masculinity individualism/collectivism	Bedard & Tolmie, 2018 [66]
	Social media information sharing	Subjective norms, perceived green value	Occupation	Sun & Xing, 2022 [65]
	Green WOM, greenwashing perception		Green concern	Zhang et al., 2018 [29]
	Green advertising skepticism	Information utility		Luo et al., 2020 [61]
	Green appeal/green message from company	Receptivity to green advertising		Bailey et al., 2016 [85]
Purchase intentions	Consumers' confusion, green message type	Green trust	Product type	Lim et al., 2021 [45]
	Celebrity credibility	Aad, Ab		Kumar & Tripathi, 2022 [52]
	Influencer type, popularity metrics			Pittman & Abell, 2021 [54]
	Price value, environmental concern		Brand trust	Ulusoy & Barretta, 2016 [62]
	Fear appeals, information appeals		Pollution ideation	Pittman et al., 2021 [39]
	Message appeal		Message objectivity	H. Chang et al., 2015 [28]
	Message framing		Issue involvement	Lee & Cho, 2021 [34]
	Environmental involvement			Sahin et al. 2020 [34]
	News media, social media, digital engagement	Brand quality, Brand authenticity		Pittman et al., 2022 [24]
Self-Enhancement	Ad appeal, benefit association, involvement	Self-Enhancement		Kyu Kim et al., 2020 [38]
Skepticism	Literacy intervention			Fernandes et al. 2020 [76]
Social media	Subjective norms, price consciousness, perceived consumer effectiveness, product knowledge			Sun & Wang, 2020 [22]
Subjective norms	Consumers' intentions to purchase green products, consumers' price consciousness, attitude toward green products			Sun & Wang, 2020 [22]
Support intentions	Green appeal/green message from company	Receptivity to green advertising		Bailey et al., 2016 [85]

Table A2. Cont.

Sustainability evaluation	Sustainability / fashion consciousness, purchase behavior and attitude, fashion purchase behavior and attitude, ad skepticism, attitude towards Black Friday		Sailer et al., 2022	[72]
Sustainable behavior	Emotion (fear or hope)		S. Park, 2020	[47]
Sustainable intentions	Emoji factor	Social media engagement	Baek et al., 2022	[46]
Trust	Green advertising receptivity, intention to buy eco-labeled products	Regulatory focus	Sun et al., 2021	[50]
Willingness to buy	Brand evaluation	Ad believability, brand positioning, green message	Vilasanti da Luz et al., 2020	[36]
Willingness to pay	Entertainment, interaction, customization, trendiness, word of mouth		Gupta & Syed 2022	[94]
	Emotion, CRM, image, environmental attitudes		Tanford et al., 2020	[35]
Word of mouth	Emotion, CRM, image, environmental attitudes		Tanford et al., 2020	[35]
	Influencer type, popularity metrics		Pittman & Abell, 2021	[54]

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