Greenwashing – the deceptive tactics behind environmental claims

Greenwashing presents a significant obstacle to tackling climate change. By misleading the public to believe that a company or other entity is doing more to protect the environment than it is, greenwashing promotes false solutions to the climate crisis that distract from and delay concrete and credible action.

Greenwashing manifests itself in several ways – some more obvious than others. Tactics include:

- Claiming to be on track to reduce a company's polluting emissions to net zero when no credible plan is actually in place.
- Being purposely vague or non-specific about a company's operations or materials used.
- Applying intentionally misleading labels such as "green" or "eco-friendly," which do not have standard definitions and can be easily misinterpreted.
- Implying that a minor improvement has a major impact or promoting a product that meets the minimum regulatory requirements as if it is significantly better than the standard.
- Emphasizing a single environmental attribute while ignoring other impacts.
- Claiming to avoid illegal or non-standard practices that are irrelevant to a product.
- Communicating the sustainability attributes of a product in isolation of brand activities (and vice versa) – e.g. a garment made from recycled materials that is produced in a high-emitting factory that pollutes the air and nearby waterways.

Why care about greenwashing, and how does it relate to climate change?

The science is clear: greenhouse gas emissions, such as carbon and methane, from human activities are wrapping the Earth in a blanket of pollution that has warmed the planet and led to severe impacts such as more intense storms, droughts, floods and wildfires.

To limit climate change and preserve a livable planet, emissions need to be cut nearly in half by 2030 and reduced to net zero by 2050. Every fraction of a degree of warming matters and, as put by the former chair of the High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities, "the planet cannot afford delays, excuses, or more greenwashing".

Greenwashing undermines credible efforts to reduce emissions and address the climate crisis. Through deceptive marketing and false claims of sustainability, greenwashing misleads consumers, investors, and the public, hampering the trust, ambition, and action needed to bring about global change and secure a sustainable planet.

How is the UN tackling greenwashing?

Since the adoption of [the Paris Agreement](#) in 2015, an increasing number of companies have pledged to reduce their greenhouse gas emissions to [net zero](#) - a level where any remaining emissions would be absorbed by forests, the ocean or other "carbon sinks." However, those claims are often based on questionable plans, including emissions offsetting and "insetting" – rather than actual emission cuts. As such, the transparency and integrity of such claims remain [critically low](#) and risk creating a [failure to deliver urgent climate action](#).

In response to the rise in greenwashing in net-zero pledges, the Secretary-General established a [High-Level Expert Group](#) tasked with developing stronger and clearer standards for net-zero emissions pledges by companies, financial institutions, cities and regions, and speed up their implementation. In its [report "Integrity Matters,"](#) the Expert Group outlined ten recommendations for credible, accountable net-zero pledges and detailed the necessary considerations for each stage towards achieving net zero and addressing the climate crisis. A checklist for companies to follow is available [here](#).

Following the report, UN Climate Change [published](#) a Recognition and Accountability Framework and Draft Implementation Plan to begin operationalizing the expert group's recommendations, improve transparency and maximize the credibility of climate action pledges, plans and transition progress.

To further accelerate action and hear from "[first movers and doers](#)," the UN Secretary-General convened a [Climate Ambition Summit](#) at the UN Headquarters in New York on 20 September 2023, designed along three tracks: ambition, credibility, and implementation - leaving "[no room for back-sliders, greenwashers, blame-shifters or repackaging of announcements of previous years](#)".

In his pivotal speech on World Environment Day 2024, the Secretary-General called for a global ban on fossil fuel advertising and urged creative agencies to stop helping fossil fuel companies in greenwashing.

What can you do?

- **Learn more**: as a consumer, understanding the common greenwashing tactics and what constitutes sustainable practices and products is crucial to recognizing and avoiding greenwashing.
- **Spend wisely**: when possible, take time to research and choose products from companies who use resources responsibly and are committed to cutting their emissions and waste. A great place to start your research is to check if the company is aligned with any of the UN's climate and sustainability initiatives, such as the UNFCCC's [Race to Zero](#) or [Fashion Industry Charter for Climate Action](#), and the [UN Alliance for Sustainable Fashion](#), among others.
- **Consider a product's lifecycle**: when evaluating a product, it is crucial to consider its entire [life cycle](#), starting from the extraction of raw materials to its eventual disposal, while also taking into account the environmental consequences associated with its materials and packaging.

- **Look for transparency and accountability**: it is often hard to know if companies are on track to meet their net zero commitments, and the absence of standardized and comparable data makes it hard to assess progress. The UN-backed [credibility standards](#) and criteria make it possible to reward leading entities taking bold, credible steps.

A Marketer's Guide to Sustainability Messaging for Eco-Conscious Consumers

Sustainability isn't just good for the planet—it's good for business. In recent years, the marketing landscape has seen a significant shift towards environmental awareness.

With eco-conscious consumers growing more skeptical of greenwashing and demanding genuine commitment, marketers need to refine their strategies to resonate authentically with this audience.

This guide dives deep into the essentials of sustainability messaging and provides actionable insights for marketers looking to connect with eco-conscious consumers.

Understanding the Eco-Conscious Consumer

Eco-conscious consumers are individuals who prioritize sustainability in their purchasing decisions and seek out brands that align with their values of environmental stewardship and social responsibility. Understanding their behaviors and preferences is key to crafting effective sustainability messages.

Green•wash•ing [grin•wɑʃɪŋ] *n. Deceptively advertising or marketing a business as environmentally friendly.*

Sustainably minded consumers are typically well-informed and skeptical of greenwashing. They're not just looking for products that are marketed as "green"; they want to know the story behind the product, including how it was made, the materials used, and the overall impact on the environment.

How Sustainability Messaging Can Benefit Your Business:
- Enhance your brand value: Consumers are more likely to support brands that demonstrate a genuine commitment to environmental and social responsibility.
- Build customer loyalty: Eco-conscious consumers appreciate brands that share their values and are more likely to become repeat customers.
- Boost profitability: Consumers are willing to pay a premium for products that are sustainably produced and ethically sourced. Additionally, sustainability initiatives can open up new market opportunities and attract investors who prioritize Environmental, Social, and Governance (ESG) criteria.

In 2024, [Statista](#) reports that Apple is perceived as the most sustainable brand worldwide. The study looked at both consumer perception and the extent to which the brand's value hinges on this eco-friendly reputation.

Building a Marketing Strategy with Sustainability Messaging

Crafting effective messaging around sustainability involves moving beyond superficial claims and embedding genuine sustainability into every facet of your business and messaging.

1. The importance of transparency and authenticity.

Transparency and authenticity are paramount in sustainability messaging. Consumers want to know that the brands they support are committed to making a difference. This involves clear communication about sourcing, production processes, and the overall environmental impact of products or services.

Being open about your practices, even if they're not perfect, can build trust with your customer base. Authenticity in messaging means sharing both successes and areas for improvement.

Practical steps for building trust:
- Detailed reporting: Share comprehensive reports on sustainability efforts, with no sugar-coating.
- Third-party certifications: Use recognized certifications to validate your claims.
- Storytelling: [Narrate your sustainability journey, including challenges and milestones.](#)

2. Empowering consumers as eco-advocates.

Eco-conscious consumers are not just passive recipients of sustainability messages; they are active eco-advocates who can amplify a brand's efforts. By empowering consumers as environmental advocates, you can strengthen the brand-consumer relationship by building a sense of community within your audience.

Engagement strategies for empowering consumers:
- Educational content: Empower consumers by providing them with the tools and information they need to make informed choices and spread the word.
- Community building: Create platforms for consumers to share their sustainability stories.
- Interactive campaigns: Initiate campaigns that encourage consumer participation, such as recycling programs or sustainability challenges.

3. Leverage data and new technology for personalization.

When it comes to the current marketing landscape, generic messaging is out and personalization is in. By analyzing consumer behavior, preferences, and demographics, marketers can create [personalized messages that resonate with different consumer segments.](#)

Implementation ideas for making the most of these technologies:
- Behavioral segmentation: [Use data to understand consumer behaviors and preferences.](#) Then, use advanced targeting techniques to reach the right audience.
- Personalized content: [Craft messages that speak directly to different segments](#), whether they're beginners in sustainability or seasoned eco-warriors.

- Data analytics: Make data-driven adjustments to improve engagement and conversion rates and stay ahead of the curve in the evolving landscape of sustainability marketing.

[Join our community of forward-thinking marketers and access exclusive resources to help you craft impactful marketing campaigns. Speak with a member of our team today.](#)

Case studies of effective sustainability messaging:

1. Patagonia

Patagonia has earned a strong reputation for its environmental advocacy and is widely recognized as a leading example of successful sustainability messaging in the retail space.

Among their many initiatives, the "Worn Wear" program, which encourages customers to repair and reuse products, stands out as an example of their dedication to tackling over-consumption within the retail world. Patagonia's transparent communication and dedication to sustainability have earned it a loyal customer base.

2. Tesla

Tesla's mission to accelerate the transition to sustainable energy is central to its brand messaging. Their clear communication about solar energy solutions has attracted a dedicated following.

By highlighting the environmental benefits of electric vehicles and renewable energy solutions, Tesla has positioned itself as a pioneer in sustainability through their messaging strategy. For example, this collaboration with Beazer Homes to build communities [certified by the United States Department of Energy as Zero Energy Ready Homes.](#)

3. Unilever

Unilever, the fast-moving consumer goods company, has integrated sustainability messaging into the heart of its marketing strategy. They achieve this by producing content that showcases the brand's sustainability initiatives and provides consumers with practical tips to adopt eco-friendly habits.

Unilever makes a point of closely monitoring emerging trends, such as rising consumer concerns about sustainable supply chains. In response to increasing awareness of the environmental impact of palm oil, they have recently launched several educational campaigns to highlight their adoption of socially equitable and sustainable business practices for obtaining the palm oil used in Unilever products.

The importance of clarity, honesty and transparency in 'green' marketing

In advance of an anticipated update to the FTC's Green Guides, some brands are getting ahead by improving the way they label recyclables and innovating to create more sustainable packaging

In the 1960s, as plastic entered its early heyday, the seemingly indestructible material became the preferred building block for many products and packaging. Often made with petroleum, plastic was cheap, versatile, strong and relatively easy to manufacture — enough to drive its popularity for years to come.

But as plastic waste began to pile up, so did negative consumer sentiment about the material. [According to a 2020 joint report by NPR and PBS' Frontline](#), plastic started to become less of a boon and more of a bane for companies as early as the 1970s. In search of a solution, the plastics industry touted the recyclability of plastic, lobbying to get the now-iconic recycling symbol placed on bottles and other packaging — helping drive continued demand for plastics.

There was just one problem: Plastic recycling was a lot more complicated — and difficult to deploy — than it seemed.

The reality of recycling

In a 2022 story titled ["U.S. Plastic Recycling Rates Are Even Worse Than We Thought,"](#) Time magazine's Emily Barone reported that the Environmental Protection Agency's most recent assessment of plastics recycling in the U.S. — about 9% in 2018, "meaning that more than 91% of plastics generated that year were put in a landfill or incinerated for energy" — was likely "overestimated," according to plastic waste experts. More recent data from the nonprofit Last Beach Cleanup and Beyond Plastics, Barone notes, "indicates that [the rate in 2021 was under 5%](#), cutting the previous estimate nearly in half."

Now, nearly 50 years after industry experts first expressed doubts that recycling plastic could ever be economically viable, it is common knowledge that plastic is not as recyclable as we were once led to believe. Arguably, the success of recycling programs around other common materials, such as paper, glass and aluminum, created unrealistic expectations in consumers' minds. [Industry group The Aluminum Association, for instance, notes](#) that "since the industry starting tracking recycling in 1972, we've recycled more than 2 trillion cans" in the U.S., and today "aluminum cans contain 73% recycled content" — which is as much as "20X the recycled content of plastic bottles."

The plastic problem is economic in nature: Producing new plastic is cheap, recycling it is not.

"All used plastic can be turned into new things, but picking it up, sorting it out and melting it down is expensive," NPR's Laura Sullivan explains. "Plastic also degrades each time it is reused, meaning it can't be reused more than once or twice."

Beginning in 1992, the U.S. Federal Trade Commission (FTC) has regularly issued guidance surrounding "green" marketing claims — those of brands claiming their products are environmentally friendly. Through its [Green Guides](#), the FTC provides details on how the industry can make environmental marketing claims that are compliant. Though non-binding, the guidelines "serve to strengthen the FTC's cases when it takes legal action against industry," [The Guardian's Tom Perkins reports](#).

As the number and popularity of products marketed as sustainable or recyclable have increased, so too have the number of FTC complaints and class action "greenwashing" lawsuits tied to such claims — with at least 17 filed or decided in the two years prior to June 2023, [according to the Boston law firm Mintz.](#) In response to growing consumer concern, the FTC launched an effort in 2022 to update its Green Guides — a project last undertaken in 2012.

Although the latest iteration is still under review, as the FTC considers and incorporates proposed revisions, companies would be smart to act now to guarantee accuracy, transparency and clarity around their products and packaging — ensuring that "green" marketing claims aren't just that, but are substantiated by evidence. Demonstrating that your products or packaging are not just "recyclable in theory but recycled in reality," as TruthInAdvertising.org notes, is essential for not just avoiding the potential wrath of the FTC but the loss of trust among consumers.

Efforts to address and communicate around the issue of recyclability, of course, go beyond marketing. Some companies, for instance, are exploring new approaches and entirely new materials to produce more sustainable products and packaging, to help fuel a new wave of recycling that's more in line with reality.

Recycling made easier

Contributing to recycling's woes, 60% of consumers say they are confused about what and how to recycle, according to the nonprofit The Recycling Partnership.

Some of this is likely due to inconsistency. The ability to recycle a given product is largely determined by where you live, as the availability of processing facilities varies greatly across the U.S. Needless to say, this variability has made difficult work of communicating which materials can be recycled where.

The organization GreenBlue, however, has been working to change that. Through the development of its How2Recycle labeling system, the organization "harmonizes" recyclability information based on the FTC's Green Guides, providing more comprehensive, straightforward guidance to help reduce confusion. The label shares information about specific parts of a package, the material used, its recyclability and brief directions to help ensure successful recycling.

"How2Recycle … enables product makers to convey to consumers how to recycle a package," per GreenBlue's mission statement for the initiative, effectively improving the "reliability, completeness and transparency of recyclability claims."

Another innovation is also setting the stage for simplified recycling. QR codes, which have been making a comeback in marketing as of late, are being deployed to provide more detailed recycling information by location. Recycle Check, a new program from The Recycling Partnership, is working to encourage consumer brands to add QR codes to their packaging that direct users to recycling information.

Consumers can scan these and then type in their ZIP Code on the Recycle Check website to learn whether an item can be recycled and to receive instructions on how to do so, Axios' Jennifer A. Kingson reported in an October post titled "Recycling is about to get much easier." Companies including General Mills and Horizon Organic have already signed onto Recycle Check, and consumers can expect to begin seeing products with recycling QR codes from those companies on their grocery shelves soon.

"The number of manufacturers using Recycle Check is likely to grow quickly," Kingson notes, "thanks to deals with two major labeling systems" — How2Recycle and SmartLabel, a program run by the Consumer Brands Association.

Recycling the unrecyclable

Clarity and transparency about recycling options are obviously important. But what about communicating around hard-to-recycle or non-recyclable items?

A company called TerraCycle has a solution for that. Focused on eliminating "the idea of waste," according to the company's website, TerraCycle operates by partnering with consumer goods brands and retailers to create free recycling programs. These brand-sponsored programs allow consumers to download and print shipping labels to send used packaging and containers to TerraCycle's facilities, where they will be recycled. Right now, everything from Babybel cheese wrappers to Dunkin' coffee bags to Taco Bell sauce packets — and even cigarettes! — can be mailed to the company to get a new life. Every time they recycle, consumers can earn reward points that can be redeemed for donations to specific charitable organizations or schools.

It should be noted that TerraCycle faced a lawsuit in 2021 alleging that the company and some of its brand partners misled customers by suggesting that anyone could send their items in to be recycled for free — when in reality only a certain number of customers could do so due to program budget limits set by each participating brand. As a result, TerraCycle and its partners agreed to make it clear on labels when participation in a program is limited, Fast Company's Elizabeth Segran reported in the wake of a legal settlement.

Meanwhile, TerraCycle has been promoting a new program called Loop, which "helps companies move away from single-use plastic to reusable bottles," per Segran. "It has created durable containers for dozens of brands, including Clorox, Häagen-Dazs and Seventh Generation, which consumers can send back to the retailers to be refilled."

The promise of compostables

An increasing number of companies have been pursuing an alternative to recycling by dipping their toes into compostables — from compostable packaging to products themselves.

Since the launch of Frito-Lay's first-of-its-kind compostable, bioplastic SunChips bag in 2010 — which quickly became known for the loud crinkling noise it made when handled — PepsiCo, which owns Frito-Lay, has invested heavily in compostable packaging. Last year the company released a quieter, 100% bio-based compostable bag for its Off the Eaten Path brand veggie crisps. And in April 2023, it opened a new composting facility for the Frito-Lay and Quaker packaging teams, Anne Marie Mohan of Packaging World reports. Located at the company's R&D headquarters in Plano, Texas, the facility is designed to "enable on-site testing and analysis of compostable packaging materials," Mohan notes.

PepsiCo isn't the only company jumping into the compostable game. In September, Walmart began selling a compostable line of Great Value cutlery sourced from U.S.-based manufacturer BeyondGreen. The product has been confirmed to meet the compostable standards of the Biodegradable Products Institute (BPI) — although, as with so many other compostable options, it is "commercially compostable only," Packaging Dive's Maria Rachal reports, meaning that it has to be taken to a specific type of facility that is currently not widespread in the U.S.

"Even if restaurants, homes and office buildings have composting bins, in most places this pile of compostable trash has nowhere to go," The Atlantic's Saahil Desai reports, because "America doesn't have the composting infrastructure to deal with it."

As more states introduce labeling laws to standardize compostable claims to reduce confusion, [Packaging Dive's Cole Rosengren notes](#), some companies are innovating to create simplified compostable packaging that can be composted in consumers' own backyards. [Nestlé began piloting](#) home-compostable [Nespresso](#) coffee capsules last year, and [Bolthouse Farms](#) announced in October the release of home-compostable packaging for its baby carrots, [The Packer's Tom Karst reports](#). Also in October, avocado producers [Oppy, Avoworks and Eco Farms announced](#) they are launching new sustainable packaging that is 100% home-compostable.

Meeting consumer demand

With all of this in mind, it should come as a relief to brands that many consumers are not only interested in sustainable packaging, but say they are also willing to pay more for it. In a [2020 McKinsey U.S. consumer sentiment survey](#), more than 60% of respondents noted they would pay more for a product with sustainable packaging.

As the saying goes, "Where there's a will, there's a way." If demand, backed by dollars, exists, then brands have an opportunity to get this right — *before* being compelled to by new government guidelines and regulations. As [Nutritional Outlook's Mike Straus notes](#), "Brands should act now to prepare for the likely changes [to the FTC Green Guides] — or risk being caught flat-footed."

The influence of greenwashing perception on green purchasing intentions: The mediating role of green word-of-mouth and moderating role of green concern

Abstract

With consumers' increasing awareness of environmental problems, [green marketing](#) is becoming an important approach for firms to gain a competitive advantage. However, [green marketing](#) decoupled from substantive action tends to be perceived as [greenwashing](#) by consumers. Compared to a large body of green [marketing research](#), little work has focused on consumers' [greenwashing](#) perceptions and its associated consequences. Thus, based on the attitude-behaviour-context theory, this study explored whether and how consumers' greenwashing perceptions influence their green purchasing intentions by integrating the mediating role of green word-of-mouth (WOM) and the moderating role of green concern. Using a questionnaire survey of 553 consumers of batteries in China, the results demonstrate that consumers' greenwashing perceptions not only have a direct negative impact on green purchasing intentions, but also have indirect negative effects via green WOM. Further, green concern strengthens the negative relationship between greenwashing perceptions and green purchasing intentions. Hence, this study suggests that firms should promote substantive environmental initiatives rather than greenwashing to ensure consumers and increase sales.

Introduction

With the energy crisis and increasingly serious environmental problems, green consumption has been given more and more attention by companies and consumers. Consumers are keen to purchase green products that are environmentally friendly due to environmental considerations (Chen et al., 2015, Goh and Balaji, 2016). The growing demand for green consumption drives firms to develop green marketing strategies to show consumers their good corporate image and social responsibility. However, green marketing may be regarded as "greenwashing" by consumers when they believe that firms "promise more environmental benefit than they deliver" (Dahl, 2010: A247). Greenwashing is a firm's over-communication about their environmental performance (Delmas and Burbano, 2011). More than 75% of the S&P 500 companies regularly disclose information about their environmental policies and performance on their websites and approximately 98% of products with environmental claims mislead consumers by committing one or more aspects of the "seven sins of greenwashing", including "sin of the hidden trade-off", "sin of no proof", "sin of vagueness", "sin of irrelevance", "sin of the lesser of two evils", "sin of fibbing" and "sin of false labels" (Choice, 2010).

Existing research has mainly focused on the construct, practice and antecedents of greenwashing. However, there is little knowledge of its impacts on consumers' green purchasing intentions, or the extent to which consumers are willing to buy environmentally friendly products or services (Lyon and Montgomery, 2015, Newton et al., 2015). When consumers perceive that firms fulfill their social responsibility, they may be more willing to buy the products of these firms, even at a higher price (Grimmer and Bingham, 2013). However, if the consumers realize that firms are greenwashing, they tend not to buy those firms' products (Chen et al., 2014). Current literature demonstrates that greenwashing perceptions amongst consumers negatively affect their green purchasing intentions (Chen and Chang, 2013), but the influencing mechanism is under-explored.

The purpose of this study is to explore whether and how greenwashing perceptions influence consumers' green purchasing intentions in pollution-intensive and highly visible industries. Based on the attitude-behaviour-context (ABC) theory (Goh and Balaji, 2016), we propose an integrated research model and focus our attention on the mediating role of green word-of-mouth (WOM) and the moderating role of environmental concern.

Consumers often convey products' environmental messages through WOM, i.e. verbal communications between consumers in social and professional settings, which affects their purchasing behaviours (Chaniotakis and Lymperopoulos, 2009, Chen et al., 2014). A great deal of research has shown that WOM affects choice, diffusion, and sales (Berger and Iyengar, 2013). Chen et al. (2014) extended WOM into the environmental field and proposed the construct of "green WOM", the extent to which a consumer would inform others about positive environmental messages related to products and brands. Firms' greenwashing behaviours can lead to negative green WOM, which affects consumers' purchasing intentions. Also, the extent of reduction in purchasing intentions caused by corporate misconduct is affected by consumers' characteristics, among which green concern is an important factor (Newton et al., 2015). Green concern, a consumer's affective evaluation of environmental issues, is often regarded as an antecedent to environmental purchasing intentions (Newton et al., 2015, Zhang et al., 2015). We argue here that greenwashing perceptions have negative effects on consumers' purchasing intentions and green WOM mediates the relationship, while green concern plays a moderating role.

This study was conducted to make a contribution to the literature on greenwashing. First, unlike mainstream research, which focuses on investors or general stakeholders, this paper, based on the attitude-behaviour-context theory, addresses the recent call for research into green marketing and studies the consequences of greenwashing from the perspective of consumers (Du, 2015, Lyon and Montgomery, 2015) by examining greenwashing perceptions and their role in purchasing intentions. Second, this research extends our understanding of the process and context by which greenwashing affects consumers' purchasing intentions. Specifically, this research examines the mediating role of green WOM as well as the moderating role of green concern in the relationship between greenwashing and consumers' purchasing intentions. Previous studies seldom consider the mechanism of green WOM. The literature often questions whether green concern acts through a mediating mechanism (Goh and Balaji, 2016) or has moderating effects (Kwon et al., 2016); our study supports its role as a moderator. Third, anchored in marketing literature, this research also provides contributions to other fields, such as sustainability and communication. This study offers an integrative perspective on how firms and consumers can be more innovative regarding sustainability and extends communication research, especially WOM, to the context of sustainable development. Finally, in contrast to research based on developed countries, this study examines greenwashing in an emerging economy, in China, whose environment is deteriorating with rapid economic development while lacking sound rules or regulations in recent decades, whose society has a tradition of harmony between human and nature, and whose consumers value relationships with acquaintances very much, and adds value to theoretical completeness (Han and Li, 2015, Li et al., 2016, Li et al., 2017).

The remainder of this paper is structured as follows: Section 2 presents a literature review and hypotheses; Section 3 describes the methodology and measurement; Section 4 is empirical analysis; Section 5 shows the discussions; and the final section provides research conclusions and implications.

Section snippets

Attitude-behavior-context (ABC) theory and consumer green behaviors

This paper relies on the attitude-behaviour-context (ABC) theory to get a better understanding of the impact of consumers' greenwashing perceptions on their green purchasing intentions (Guagnano et al., 1995). The ABC theory is based on a means-end approach, in which individuals act according to the gains that they expect from certain behaviours (Feldmann and Hamm, 2015). Hence, the theory provides a useful framework for investigating how attitudes result in certain behaviours (Goh and Balaji,

Data collection and the sample

Due to the fact that the unit of analysis in this research is the consumer-level, and by referring to Chen et al. (2014), this paper chose the questionnaire survey method to test the proposed hypotheses. This study focused on consumers who have experience buying products from energy companies, such as battery enterprises, which are high pollution/high visibility industries. Given that consumers in the energy industry are more sceptical about firms' environmental words and actions, energy

Independent *t*-test: online versus offline data

In order to see if there are any differences between data collected online and offline, we conducted the independent *t*-test by checking whether both means were significantly different. The results of *t*-test revealed that, accept for the gender and age, there were no significant differences in the means for the main constructs from the 252 online questionnaires and the 301 offline questionnaires. Therefore, there were no differences between data collected online and offline at the significance

Discussions

Although previous research has suggested that greenwashing plays a negative role in consumers' purchasing intentions, there has been limited research incorporating green WOM and green concern to investigate the process and context by which greenwashing perceptions affect green purchasing intentions. By considering the roles of green WOM and green concern in the relationship between consumer greenwashing perceptions and green purchasing intentions, we have generated the following findings.

First,

Conclusions

Based on the attitude-behavior-context theory, this study explored the influence mechanism of greenwashing perception on green purchasing intentions by considering the mediating role of green WOM and the moderating role of green concern. With the collection of 553 questionnaires from consumers in battery industry in China, we find that greenwashing perception is negatively correlated with green purchasing intentions, and that green WOM plays a partial mediating role, while green concern

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