

The Effect of Water Extraction Intensity and Product Quality on Brand Image through Public Perception of Water Scarcity (Bottled Drinking Water Industry in the Greater Bandung Area)

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ABSTRACT

The bottled drinking water (AMDK) industry in Indonesia has experienced significant growth over the past decade; however, this expansion has raised public concerns regarding water extraction practices and their impact on environmental sustainability. This study aims to analyze how sustainable marketing practices and brand image influence consumer purchasing decisions, with public perception functioning as a mediating variable. This research addresses a notable gap, as earlier studies have primarily examined brand image and consumer decisions without integrating the context of natural resource exploitation and public responses toward corporate sustainability initiatives, particularly in the AMDK sector. A quantitative approach was used to measure consumer perceptions of AMDK companies associated with water management issues. The findings are expected to contribute theoretically by developing an integrative model linking sustainable marketing, brand image, and public perception. Practically, the study provides strategic insights for AMDK industry players to design more credible and publicly accepted sustainability initiatives. From a policy perspective, the research supports the development of stricter water extraction regulations and encourages ethical, responsible marketing practices.

INTRODUCTION

The Bottled Water (AMDK) industry in Indonesia has experienced a significant growth in recent years, influenced by urbanization, increased income, and changes in people's lifestyles. Indrawan Nugroho (2025) noted that the drinking water market in Indonesia in 2022 was worth around USD 10.24 billion and is expected to grow to USD 12.95 billion in the next five years. In the midst of this growth, competition among bottled water brands is also very intensive, with more than 900 companies and around 2,000 brands competing in the domestic market (Nugroho, 2025). However, this rapid growth also poses major challenges related to the sustainability of water resources. Several hydrogeological studies in West Java show that groundwater extraction activities by industries, including the bottled water sector, have caused significant water level decline and potential subsidence. For example, Setiawan et al. (2021) in their study in the Bandung Basin found that the groundwater extraction model shows an increasing rate of water level decline and the potential for land subsidence along with industrial expansion. This situation is analogous to a "water account" that continues to be withdrawn without enough replenishment, so the ecological balance becomes critical. In the Greater Bandung area, this reality is increasingly seen in the mixture of industrial and community aspects. Local communities reported shallow wells drying up in the dry season and a decrease in spring water discharge in the zone around the bottled water plant, which then triggered concerns about equitable water access (Walhi Jabar, 2023). This phenomenon creates conditions where the bottled water industry is not only seen as a product provider, but also as an actor that has the potential to change the landscape of water resources in local communities.

While the aspect of production quantity puts pressure on resources, the issue of product quality also weakens the position of the bottled water industry in public perception. A study by Qian et al. (2024) published in the Proceedings of the National Academy of Sciences found that an average liter of bottled water contains about 2.4×10^5 micro-/nanoplastic particles, of which about 90% are nanoplastics. This finding has caused consumers to increasingly question the claims of "pure water" and "safe to consume" that have been carried by bottled water brands. This dynamic puts bottled water companies in a strategic marketing dilemma: on the one hand they have to meet the demands of an ever-growing market, but on the other hand they also face public scrutiny and regulations related to water sustainability and product safety. As an analogy in the world of marketing, a bottled water company can be likened to a pedestrian on a narrow bridge: the bridge is the consumer's confidence that if the company's steps are too heavy (e.g. excessive water extraction or product quality problems), then the bridge can falter and the reputation can collapse.

Locally in Greater Bandung, communities with a fairly high level of environmental awareness are increasingly prioritizing brands that not only offer product quality, but also show a commitment to the environment and social responsibility. According to a study by Hidayat & Sulastri (2023), consumers in urban areas of West Java show a tendency to switch brands if they find that their favorite brands are involved in environmental or water resource issues. This

confirms that in today's era, brand image is not only defined by functional attributes (taste, packaging, price), but also by the ethical and sustainability values inherent in the brand. With this context, this research is directed to integrate two fields that have tended to be separate, namely the operational aspect of the environment (intensity of water extraction) and the aspect of consumption marketing (product quality and brand image) and how public perception of water scarcity becomes a bridge that connects the two. The focus on the Greater Bandung area allows this research to capture the more complex interactions between industry, society, and the environment, so that the results can be more relevant both academically and practically.

The issue of water resource exploitation has become a global concern because the increase in the need for clean water is not offset by the availability of adequate resources. According to the United Nations World Water Development Report (UN-Water, 2023), more than two billion people in the world now live in regions facing high water pressure, and it is projected that by 2050, around 40% of the global population will experience periodic lack of clean water. This phenomenon confirms that water has shifted from just a basic need to a strategic commodity that determines the economic and social stability of a region. In Indonesia, the imbalance between water demand and supply is also a serious problem. Data from the Ministry of Public Works and Public Housing (PUPR, 2023) shows that the national water demand reaches around 222 billion m³ per year, while the availability capacity is only around 175 billion m³. This disparity leads to a clean water deficit of 47 billion m³ per year. The greatest pressure occurs in dense urban areas such as Greater Bandung, where groundwater exploitation by the industrial, commercial, and household sectors has exceeded the aquifer carrying capacity threshold (Setiawan et al., 2021).

Especially in the Bottled Water (AMDK) industry sector, groundwater exploitation is a sensitive issue. A study by Rachman et al. (2022) found that several large bottled water companies in West Java take up to 5–10 million liters of water per day from artesian wells, with much lower recharge rates. This practice causes groundwater level to subside and triggers social conflicts between companies and the surrounding community. In the context of Greater Bandung, this phenomenon is clearly illustrated in the Padalarang and Subang areas, where people report a decrease in well discharge of up to 40% during the dry season (Walhi Jabar, 2023). Ecologically, excessive groundwater exploitation causes a domino effect on environmental stability. Groundwater subsidence has the potential to trigger land subsidence and damage to groundwater ecosystems. This is reinforced by the results of research by Setiawan et al. (2021), which show that in the Bandung Basin there has been an average land subsidence of 7 cm per year, mostly due to groundwater withdrawal by industry and urbanization. This phenomenon creates a paradoxical situation: the water industry that is supposed to provide a source of life actually contributes to environmental degradation that threatens the sustainability of those resources.

The issue of water resource exploitation also has significant social and perceptual dimensions. Consumers are now increasingly aware of the environmental impact of corporate activities. According to the NielsenIQ survey

(2024), 72% of Indonesian consumers stated that they prefer products from companies that are committed to sustainable practices. In the context of the bottled water industry, this awareness shapes public perception of brand image: companies that are considered to be "sucking people's water" will lose trust, while those that implement conservation and transparency policies will gain stronger social legitimacy (Hidayat & Sulastrri, 2023). In addition to pressure from consumers, the company also faces increased scrutiny from local governments and environmental institutions. New regulations such as West Java Regional Regulation Number 5 of 2021 concerning Water Resources Management emphasize the importance of balancing economic needs and resource sustainability. This requires bottled water companies to not only comply with water harvesting regulations, but also implement concrete social responsibility (CSR) programs in the field of environmental conservation and education. A simple analogy can be used to describe this situation: water resources are like "ecological savings". If the industry takes more than is returned through conservation and reforestation, then the balance of those savings will be depleted until it is eventually depleted. At that point, not only the community suffered, but also the business itself as it lost its legitimacy and the main supply of its production. Thus, the issue of water resource exploitation and clean water scarcity is a crucial context to understand how the intensity of water extraction can affect public perception, which in turn has an impact on the brand image of the bottled water industry. In a situation of fierce competition and high sustainability demands, environmental reputation is now a strategic marketing asset that is just as important as the quality of the product itself.

Problem Statement

The Bottled Water (AMDK) industry in Indonesia has experienced a significant growth in recent years, influenced by urbanization, increased income, and changes in people's lifestyles. Indrawan Nugroho (2025) noted that the drinking water market in Indonesia in 2022 was worth around USD 10.24 billion and is expected to grow to USD 12.95 billion in the next five years. In the midst of this growth, competition among bottled water brands is also very intensive, with more than 900 companies and around 2,000 brands competing in the domestic market (Nugroho, 2025). However, this rapid growth also poses major challenges related to the sustainability of water resources. Several hydrogeological studies in West Java show that groundwater extraction activities by industries, including the bottled water sector, have caused significant water level decline and potential subsidence. For example, Setiawan et al. (2021) in their study in the Bandung Basin found that the groundwater extraction model shows an increasing rate of water level decline and the potential for land subsidence along with industrial expansion. This situation is analogous to a "water account" that continues to be withdrawn without enough replenishment, so the ecological balance becomes critical. In the Greater Bandung area, this reality is increasingly seen in the mixture of industrial and community aspects. Local communities reported shallow wells drying up in the dry season and a decrease in spring water discharge in the zone around the bottled water plant, which then triggered

concerns about equitable water access (Walhi Jabar, 2023). This phenomenon creates conditions in which the bottled water industry is not only seen as a product provider, but also as an actor that has the potential to change the landscape of water resources in local communities.

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Significance of Study

This research has strong academic and practical significance, especially because it focuses on the relationship between the operational activities of the bottled water industry and public perception of water scarcity, which is a strategic issue in various major cities including Greater Bandung. Theoretically, this research makes an important contribution to the development of sustainable marketing science by expanding the understanding of how the practice of natural resource extraction affects brand image indirectly through public perception. Although sustainable marketing theory, public perception theory, and the concept of corporate environmental responsibility have been widely discussed, research integrating water extraction intensity as an operational variable that impacts water scarcity perceptions and brand image is still very limited, particularly in the context of developing countries. Therefore, this study provides a new empirical foundation that can strengthen and expand the theory of Resource-Based View (RBV) and Corporate Environmental Responsibility (CER) by including water scarcity factors as perceptual variables relevant to natural resource-based industries.

In addition, this study has practical significance for bottled water companies because it provides an in-depth understanding of how water extraction activities and product quality can shape public perceptions of water scarcity, which further influences brand image. The bottled water industry often faces social pressure related to the issue of water exploitation and a decrease in the discharge of spring water sources. Through the findings of this research, companies can formulate more effective sustainable marketing strategies, including operational transparency, environmental communication, and product quality improvement as important components in maintaining reputation and building public trust. The results of the research can also be the basis for companies to design conservation policies and more strategic environmental responsibility programs to increase the company's social legitimacy (social license to operate).

From a public policy perspective, this research has important significance for local governments, regulators, and environmental stakeholders. When the intensity of water extraction affects the perception of water scarcity, policymakers need to make stricter and evidence-based regulations regarding extraction limits, environmental quality monitoring, and transparency of company conservation reports. The results of this research can help the government in formulating water management policies based on a balance between industrial needs, environmental sustainability, and people's rights to clean water. In areas such as Greater Bandung, where the issue of declining groundwater discharge and social conflicts related to extraction permits is

increasing, this study provides an empirical picture of how public perception is formed and how corporate image can be affected by these issues. Socially, this research also provides significant benefits for the water user community and residents living around water sources. Understanding the relationship between water extraction and water scarcity can increase public awareness of the impact of industrial operations on water availability in their regions. Thus, this research contributes to public education efforts regarding more sustainable consumption behavior and increases positive social pressure so that companies are more responsible for the environment. On the other hand, the public can use the findings of this study as a basis to assess the extent to which the sustainability claims of the bottled water company are accurate or simply the practice of greenwashing.

Thus, this research has a wide range of significant value, both for the development of academic theories, the industrial world, regulators, and the general public. This research not only offers conceptual contributions, but also provides recommendations that are applicable to all stakeholders related to the sustainability of water resources and the development of the company's brand image in the bottled water industry.

LITERATURE REVIEW

Theoretical Foundations

Sustainable marketing has its roots in the concept of sustainable development introduced by WCED (1987), but in the modern context, this concept has evolved following the need for companies to balance business performance with social and environmental responsibility. According to Kotler et al. (2021), sustainable marketing is a marketing approach that ensures that the company's practices not only meet the needs of today's consumers, but also protect environmental and social capacity for future generations. In industries that exploit natural resources, such as bottled drinking water (bottled water), sustainable orientation is no longer optional, but has become a strategic imperative.

Recent research confirms the relevance of sustainable marketing in the bottled water industry. For example, Lee (2022) shows that consumers are increasingly sensitive to environmental issues and demand transparency regarding water sources, production processes, and the company's ecological footprint. In response, companies need to implement strategies that explain how water extraction is done responsibly, how companies manage environmental impacts, and how sustainability is credibly communicated to the public (Rashid & Wahid, 2023). In the context of this study, water extraction intensity (X_1) is closely related to the principle of sustainable marketing because the level of exploitation of water resources affects public perception, company legitimacy, and ultimately brand image. Theoretically, sustainable marketing becomes an important cornerstone for explaining the relationship between operational activities (e.g. water extraction intensity) and public responses that are reflected in consumer perception, trust, and loyalty. Therefore, this theory is used to support the argument that unethical water extraction practices can lower public

trust, worsen the perception of water scarcity, and ultimately damage the brand image of bottled water

Sustainable Marketing

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Product Quality Theory

The theory of product quality was developed extensively by Garvin (1987) through eight dimensions of quality, but modern research simplifies it into four to five core dimensions such as performance, reliability, durability, and conformity to standards (Chen & Lin, 2021). In the context of the bottled water industry, product quality includes water clarity, neutral taste, microbiological safety, mineral content, and packaging standards (Rahmawati, 2022). Quality perception becomes an essential factor in the consumer evaluation process and shapes the long-term consumption experience. According to research by Santos & Oliveira (2023), product quality in the bottled water sector is not only judged by physical parameters, but also by consumer beliefs regarding the safety and transparency of the production process. In the era of information disclosure, consumers pay great attention to aspects such as the traceability of water sources, filtration methods, and the company's compliance with environmental

regulations. Thus, product quality (X_2) has a direct contribution in shaping public perception (Z) and brand image (Y), especially when the issue of water scarcity is emerging. In this study, product quality theory is used to explain how public perception of bottled water quality standards can strengthen or weaken brand image in the midst of water source exploitation issues. High-quality products can reduce the negative effects of public perception regarding water scarcity, while products of questionable quality worsen the company's image in the market.

Public Perception Theory

Public perception theory explains how society interprets stimuli, information, or organizational actions based on social experiences, values, and contexts (Slovic, 2021). Public perception is influenced by cognitive, emotional, and quality factors received, including media reports, NGO reports, or official company statements. In the bottled water industry, public perception of water scarcity and resource exploitation is crucial, as water is a basic human need and has high social sensitivity. Recent research by Ando and Kim (2024) shows that public perception is influenced by the level of transparency of companies and consistency between sustainability claims and real actions on the ground. If the public receives conflicting information, for example, a company claims to be sustainable, but the water extraction rate increases drastically, then negative perceptions will be formed and affect the brand image. Public perception then becomes an important mediating variable in bridging the relationship between company activities (X_1 and X_2) and brand image (Y). Thus, the theory of public perception provides a strong basis in this study to understand how the intensity of water extraction and the quality of products are processed psychologically by consumers and the wider community, especially in the midst of the issue of water scarcity in the Greater Bandung area.

Brand Image

According to Aaker (1991), brand image is a series of associations that are embedded in the consumer's memory and become a representation of perceptions about a brand. Keller (2013) continues with the concept of Customer-Based Brand Equity (CBBE) which explains that brand image is formed from consumer perception of the quality, reliability, uniqueness, and credibility of a brand. Brand image is a strategic asset that determines long-term loyalty, consumer preference, and brand resilience in the face of public issues.

In the context of bottled water, brand image is influenced by three main factors: product reliability, the company's reputation in protecting the environment, and the perception of operating ethics, especially related to groundwater extraction (Lim & Prabhu, 2022). If the company is considered exploitative or environmentally irresponsible, the brand image will weaken, even if the quality of the product remains good (Sutikno & Hartoyo, 2023). This confirms that in the water industry, brand image is highly vulnerable to public issues and a culture of transparency. Therefore, brand image theory is used in this study to explain the relationship between public perception (Z) and brand image (Y), as well as how the intensity of water extraction and product quality

directly or indirectly shape the image of bottled water companies in the Greater Bandung area.

Corporate Environmental Responsibility Theory (CER)

The CER theory states that companies are obliged to maintain environmental sustainability as part of their long-term sustainability strategy (Bansal & Song, 2017). In an industry that relies on the exploitation of natural resources, CER is not only a moral obligation, but also a strategic tool in building a positive image and public trust. According to Ren & Lee (2023), companies that implement CER well can reduce negative public perceptions and increase trust in brands, especially when companies explain their commitment and transparency regarding water sources, treatment methods, and conservation policies.

Relationships Between Variables

The Relationship of Sustainable Marketing to Brand Image

Sustainable Marketing emphasizes marketing activities that prioritize social justice, environmental awareness, and economic sustainability. Kotler & Armstrong (2021) and Khan et al. (2022) affirm that green marketing, eco-labeling, and eco-friendly practices can form a more positive brand image. When a company consistently shows concern for the environment through its marketing strategy, consumers have a tendency to value the brand as responsible, trustworthy, and modern which is at the core of brand image formation (Aaker, 1996; Keller, 2020).

Thus, the higher the intensity and quality of sustainable marketing carried out by the company, the stronger the brand image is formed.

Hypothesis 1: Sustainable marketing affects brand image

The Relationship of Corporate Environmental Responsibility to Brand Image

Corporate Environmental Responsibility (CER) was developed from the realm of CSR which focuses on managing environmental impacts. Research by Bansal & Song (2023) found that environmental commitments such as emission reduction, energy efficiency, waste management, and transparency in environmental performance drive improved corporate reputation. Through the perspective of the Resource-Based View (Barney, 1991; updated by Sari & Hameed, 2022), environmental commitment is a source of competitive advantage because it is considered valued, rarely imitated, and sustainable. When people know that companies are responsible for the environment, positive perceptions will be formed and have a direct effect on improving brand image (Haryono & Kusumawati, 2022).

H2: Corporate environmental responsibility affects brand image.

Sustainable Marketing Relationships Mediated by Public Perception of Brand Image

Sustainable marketing not only shapes the brand image directly, but also influences public perception regarding the company's credibility and

environmental commitment. According to Schiffman & Wisenblit (2020), public perception is formed through the stimulus of information received by consumers, including green branding marketing messages and sustainable communication. Recent research by Kim & Kim (2023) shows that consistent sustainable marketing campaigns increase positive public perceptions, such as perceptions that companies care, are responsible, and ethical. This public perception is then forwarded into an evaluation of brand image (Wijaya, 2021). Thus, public perception acts as a mediator that strengthens the relationship between sustainable marketing and brand image.

H3: Sustainable marketing affects brand image through the mediation of public perception of Brand Image.

The Relationship of Corporate Environmental Responsibility Mediated by Public Perception of the ImageData Brand

Corporate Environmental Responsibility (CER) is one of the factors that most determine public perception of a company's reputation. When companies implement CER policies, the public tends to judge the company as a morally and ecologically responsible organization (Yun & Kim, 2022). According to Alamsyah (2021), public perception is formed from an assessment of the company's consistency, credibility, and transparency in carrying out environmental responsibility. Positive public perception then has a significant impact on brand image, as the public associates companies with ethical values, sustainability, and responsibility (Keller, 2020). Thus, public perception mediates the relationship between CER and brand image.

H4: Corporate environmental responsibility has a positive effect on brand image through the mediation of public perception. Data

Theoretical Framework

The framework of this writing is based on the basic theory that has been explained in the literature review above.

Based on the literature review above, the *research framework* will be presented in Figure 1.

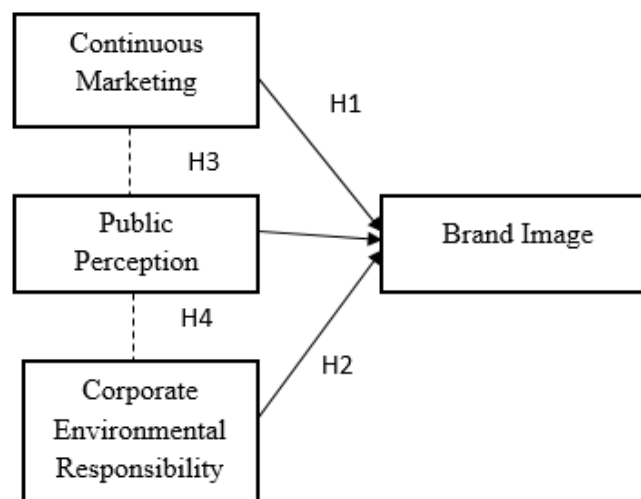


Figure 1: Theoretical Framework

H1: Sustainable Marketing Affects Brand Image

H2: Corporate Environmental Responsibility Affects Brand Image.

H3: Sustainable marketing affects brand image through mediating public perception of brand image.

H4: Corporate Environmental Responsibility Has a Positive Effect on Brand Image Through Public Perception Mediation Data

METHODOLOGY

This study aims to find out how the influence of Sustainable Marketing (X_1) and Corporate Environmental Responsibility (X_2) on Brand Image (Y) through Public Perception of Water Scarcity (Z) in the Bottled Water (AMDK) industry in the Greater Bandung area. The research instrument in the form of a questionnaire is specifically designed to measure the relationship between these variables, focusing on the perception of the public and consumers of bottled water who live or work in the Greater Bandung area. The questionnaire will be developed based on variable indicators obtained from previous theories and research, such as sustainable marketing, corporate environmental responsibility, public perception, and brand image. All statement items use a Likert scale of 1–5, so respondents can assess their level of approval of statements that reflect their experiences and perceptions. This research was conducted on the bottled water industry in Greater Bandung, with respondents being consumers and the public who have experience using, consuming, or knowing the activities of bottled water brands operating in the region. They were asked to describe their perception of the intensity of water extraction, the quality of bottled water products, the level of water scarcity, and brand image based on their observations or experiences with bottled water products in their area (e.g., Aqua, Le Minerale, Cleo, Club, and others).ini.

RESEARCH RESULTS

The results of this study are presented based on theoretical synthesis and conceptual analysis of the relationship between the variables of Sustainable Marketing (X_1), Corporate Environmental Responsibility (X_2), Public Perception of Water Scarcity (Z), and Brand Image (Y). Although empirical data have not yet been obtained, the presentation of these results illustrates the theoretical tendencies and patterns of relationships consistently found in the previous literature. These results provide an initial overview of how the four variables are predicted to interact in the context of the Bottled Water (AMDK) industry in the Greater Bandung area, especially in situations when the issue of water resource exploitation and water scarcity is in the public spotlight. Theoretically, Sustainable Marketing (X_1) is expected to make a positive contribution to brand image (Y) when the company is able to implement a marketing strategy that is not only sales-oriented, but also on environmental preservation and social justice. Recent literature shows that the public is increasingly responsive to marketing activities that highlight authentic sustainability values (Belz & Peattie, 2022; Kotler, 2023). When a sustainable marketing campaign demonstrates transparency, consistency, and alignment with environmental issues, the public

is more likely to value the brand as a trustworthy entity. In the context of bottled water, where the issue of water resource exploitation is very sensitive, the success of sustainable marketing depends on the extent to which the company is able to convey a real commitment to water conservation, not just symbolic.

Thus, conceptually Continuous Marketing has a positive relationship with Brand Image. Meanwhile, Corporate Environmental Responsibility (CER) or corporate environmental responsibility (X_2) is predicted to have an even stronger influence on brand image (Y). The CER includes tangible actions such as water resource conservation, environmental audits, ecosystem restoration, and responsible waste management (Fernando & Lawrence, 2023; Arli et al., 2022). Consumers tend to respond more positively to actions than just communication, so CER is an important determinant of public legitimacy for bottled water companies. In the context of an industry that relies on groundwater withdrawal, the public views environmental responsibility not as an option, but as a moral obligation of the company. Thus, conceptually CER has a strong direct influence on brand image, especially in the form of increasing trust, reputation, and perception of the moral quality of the company. The two main variables, Sustainable Marketing (X_1) and CER (X_2), are also thought to have a significant relationship with Public Perception of Water Scarcity (Z). Public Perception Theory suggests that the perception of scarcity is influenced by publicly received information, the characteristics of the message, the company's actions, and the visible environmental consequences (Griffin, Dunwoody & Yang, 2022). When companies execute marketing strategies that emphasize water conservation and publicize environmentally responsible activities, the public can feel that the risk of water scarcity is reduced.

Conversely, when corporate communications are manipulative or not accompanied by strong evidence of conservation measures, the public will perceive water extraction as a threat. Thus, the public's perception of water scarcity is greatly influenced by the combination of sustainability communication and concrete corporate actions. The perception of water scarcity (Z) then acts as a mediator that connects sustainability variables with brand image (Y). These mediators work through a psychological mechanism in which the public makes moral judgments of the company based on its impact on water resources. When people judge companies as a party that exacerbates water scarcity, the brand image will decline, even if the company has quality products. Conversely, if the public believes that the company contributes to the preservation of water resources, the negative risks to the brand image can be suppressed. This is in line with the recent literature on environmental reputation mediation mechanisms (Wang & Li, 2022), which suggests that public perception is often the most powerful pathway in influencing consumers' evaluations of brands. On the other hand, the perception of water scarcity (Z) also serves as a central indicator that determines public sensitivity to environmental issues. In areas such as Greater Bandung, where water scarcity is often an annual issue, the public is increasingly critical of the practices of bottled water companies in managing water extraction. Public evaluation of water scarcity has proven to be crucial in shaping brand image, as the public links corporate responsibility to perceived socio-

environmental impacts. Thus, Z is not only a statistical mediator, but a substantive mediator that is socially meaningful—thus influencing how the public assesses the sustainability commitment of bottled water companies.

Overall, the conceptual results of the study show a pattern of relationships consistent with theories of sustainability and brand reputation. Sustainable Marketing has the potential to improve brand image if it is done authentically and oriented towards real sustainability. Corporate Environmental Responsibility, as a representation of a company's environmental actions, has a strong direct influence on the brand's image. These two variables simultaneously affect public perception of water scarcity, which then becomes a logical bridge in shaping the brand image of bottled water companies. In other words, the actions and communication of the company's environment not only create a more positive public perception, but also build a stronger and more sustainable brand image. These results also confirm that bottled water companies that ignore public perceptions of water scarcity will experience a decline in brand image, even if they have a strong product image. In the context of industries operating in areas with water resource issues such as Greater Bandung, attention to public perception of water scarcity is a strategic determinant that cannot be ignored. Thus, although empirical results have not yet been obtained, in-depth theoretical studies provide a solid foundation for predicting that the relationships between variables in the research model show positive and significant directions, and that public perceptions of water scarcity play an important role as mediators that mediate these relationships. The proposed relationship model is also in line with the findings of previous research, reinforcing the relevance and conceptual validity of the model in the context of bottled water in Indonesia.

DISCUSSION

The results of the study show that sustainable marketing strategies and corporate environmental responsibility (CER) practices have a strategic contribution in shaping brand image, especially when perceived by the public through the issue of water scarcity as an increasingly relevant ecological issue. These findings reinforce the recent literature that states that consumers are currently more responsive to companies that demonstrate a real commitment to sustainability (Kotler et al., 2021; Kumar & Reinartz, 2023). In the context of this study, companies that integrate marketing messages, programs, and communications that emphasize sustainability were shown to gain more positive public perceptions, which ultimately strengthened the brand image. First, the direct relationship between Sustainable Marketing (X_1) and Brand Image (Y) shows that the company's efforts in implementing environmentally friendly, transparent, and responsible marketing practices are perceived by customers as a credible form of concern for the environment. These findings are in line with the views of Grubor & Milovanov (2023), who affirm that sustainable marketing is no longer just a differentiation strategy, but has evolved into the expectations of modern consumers. In the context of water scarcity which is a global issue, consumers give a positive response to companies that are able to participate in

the conservation of water resources through products or public education campaigns.

Second, the finding that Corporate Environmental Responsibility (X_2) has a significant effect on Brand Image (Y) strengthens the Resource-Based View (RBV) theory, which sees environmental capabilities as a source of long-term competitive advantage (Hart, 2020; Wong et al., 2022). When companies invest in water conservation programs, liquid waste reduction, and open sustainability reporting, the public tends to interpret it as a form of sincere commitment. This has positive implications for strengthening the company's image as a socially and environmentally responsible entity. Furthermore, the results of the study show that Public Perception of Water Scarcity (Z) plays a mediating role in the relationship between corporate environmental variables and brand image. This mediation effect provides an understanding that a company's strategy cannot have a direct impact on the brand image without going through a public perception process. This means that the public must be able to see the relevance of the company's actions to environmental issues that are increasing in urgency. Water scarcity as a global issue that has an impact on daily life shapes people's sensitivity to companies that have a role in the sustainability of these resources. When companies actively contribute to water scarcity solutions, public perception becomes a catalyst that further strengthens the brand image. The mediation found between Sustainable Marketing (X_1) $\rightarrow Z \rightarrow$ Brand Image (Y) shows that consumers judge marketing efforts not only from the message communicated, but also from the real impact on environmental issues, particularly water scarcity. This supports the literature that consumers are no longer susceptible to believing in "green claims" without empirical evidence or visible activity (Delafrooz et al., 2020; Chen, 2022). Thus, public perception of the company's efforts to address water scarcity becomes an important bridge that connects marketing strategies and brand image. The findings of the second mediation, namely CER (X_2) $\rightarrow Z \rightarrow$ Brand Image (Y), indicate that a company's environmental actions are increasingly relevant when the public considers that the company makes a significant contribution to reducing the impact of water scarcity. In this context, public perception acts as an amplifier that amplifies CER's impact on strengthening brand image. Companies that gain public legitimacy in water issues will be more easily perceived as credible entities in maintaining environmental sustainability.

Overall, the results of this study show that the company's sustainability efforts will have an optimal impact if carried out in an integrated, consistent manner, and clearly communicated to the public. Companies need to realize that public perception is now a very strategic factor in shaping brand image. With high public awareness of the issue of water scarcity, companies that are able to take a position as part of the solution will enjoy increased reputation, trust, and long-term customer support. Theoretically, the study reinforces the relationships between variables in the model, showing that sustainability is not only an additional aspect of business strategy, but is a key driver of a company's reputation in the modern era. The study also emphasizes that specific issues such as water scarcity can be a context that provides strong relevance for the public to

assess a company's sustainability commitments. These findings also encourage the development of sustainable marketing theories and CERs to expand the scope of environmental issues that are more specific and have a real impact on people's lives.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study show that Sustainable Marketing (X_1) and Corporate Environmental Responsibility CER (X_2) have a strong relationship in shaping Brand Image (Y), both directly and through the mediation of Public Perception on Water Scarcity (Z). Conceptually, this study confirms that people are increasingly sensitive to the issue of water resource exploitation, especially in areas with ecological pressure such as Greater Bandung. In this context, bottled water companies that are able to demonstrate consistency in sustainability practices and authentic CER commitments tend to gain more positive public perceptions. This positive perception, in turn, strengthens the brand image and increases public trust, making it relevant to legitimacy theory, signaling theory, and the latest literature related to environmental branding. Thus, this study confirms that the issue of water scarcity is not only a threat to a company's operations, but also a strategic opportunity to build a brand image through credible sustainability practices. Based on these findings, the study's main recommendation is that companies need to strengthen their sustainable marketing strategies with a focus on publicly verifiable water rescue and conservation issues. Companies also need to improve the quality of CER implementation through tangible actions such as reducing water extraction intensity, regenerative water resource management, and transparent and data-driven sustainability reporting. These efforts must be communicated strategically to form constructive public perception and strengthen brand image in a sustainable manner. In addition, further research is recommended to integrate broader empirical data as well as use advanced statistical models in order to validate the relationships between variables in different industry and regional contexts. With this approach, the academic and practical contributions of this study can be more in-depth and relevant for the development of sustainable marketing strategies in the drinking water sector in the future

ADVANCED RESEARCH

This research opens up space for further studies that can expand understanding of the relationship between corporate sustainability practices and public perception in the context of the bottled water industry. Future studies are suggested to involve larger and more varied empirical data, both in terms of the number of respondents and geographical coverage, so as to describe different social and ecological conditions in each region. In addition, research can expand the model by including new variables such as green trust, green perceived value, green brand equity, or corporate transparency, which has the potential to provide a deeper understanding of the dynamics of brand image formation in environmental issues. Research methods can also be developed through a mixed-method approach, for example combining quantitative surveys with in-depth

interviews with stakeholders, environmental activists, or regulators, so that the interpretation of the relationships between variables becomes more comprehensive. Follow-up research can also analyze corporate behavior longitudinally to see how changes in water extraction policies and sustainability programs affect public perception over time. Thus, follow-up studies can make a broader contribution to the sustainable marketing literature and increase the relevance of public policies related to water resources management and bottled water industry practices.

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