



DOI: <https://doi.org/10.38035/dijms.v6i3.4177>
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The Influence of *Green Manufacturing*, *Green Advertising*, and *Greenwashing* on the Sustainability of Consumer Goods Sector Companies Listed on the Indonesia Stock Exchange (IDX) for the Period 2019-2023

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Abstract: The purpose of this study is to analyze the impact of Green Manufacturing, measured through a dummy variable; Green Advertising, evaluated using the net profit margin ratio; and Greenwashing, assessed based on the PROPER ranking, on Corporate Sustainability, which is determined by the dissemination of sustainability reports following the GRI (Global Reporting Initiative) standard. This research utilizes secondary data, focusing on a population of 125 manufacturing companies, with a sample of 50 companies selected using the purposive sampling method, all of which are listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. The panel data regression analysis method is applied using Eviews 13 as the analytical tool. The findings reveal that Green Manufacturing and Greenwashing have a positive but statistically insignificant impact on Corporate Sustainability. Conversely, Green Advertising has a negative but also statistically insignificant effect. Unlike prior studies that included Green Accounting as a variable, this research incorporates Green Manufacturing into the analysis of Corporate Sustainability, with differences also seen in measurement techniques and sample selection. This study uniquely employs the PROPER score to evaluate Greenwashing and Environmental Performance. Collectively, these three factors contribute to Corporate Sustainability, emphasizing that a comprehensive approach addressing various green practices is more effective in enhancing Corporate Sustainability.

Keyword: Green Manufacturing, Green Advertising, Greenwashing, & Corporate Sustainability.

INTRODUCTION

Indonesia's population has been growing at a rapid pace, as highlighted in the *Statistics-Indonesia-2023* publication by the Central Statistics Agency, which reports that the country's population has reached 275 million. This population growth has driven an increase in

production activities to meet societal demands. However, the continuous rise in population also compels people to adopt faster and more efficient lifestyles, leading to environmental challenges, particularly shifts in environmental conditions due to escalating waste generation.

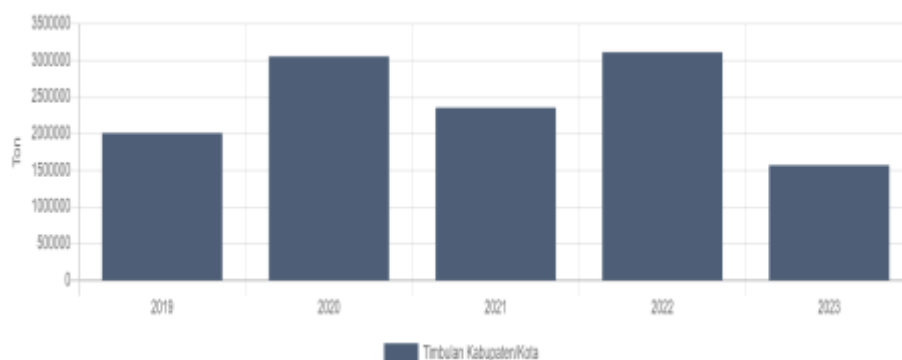
The generation of waste in Indonesia is increasing at an alarming rate. According to *TribunNews.com*, the Ministry of Home Affairs reported that Indonesia produced 35.83 million tons of waste in 2022. Additionally, Indonesia has gained the undesirable distinction of being the world's second-largest contributor to plastic waste, as reported by *WeCare.id*. The problem of plastic waste extends beyond environmental degradation, as it also poses risks to human health (Qolbi, 2022).

Health concerns have been raised regarding the presence of Bisphenol A (BPA) in water gallon containers. Growing awareness of BPA's potential health risks has prompted consumers to exercise greater caution when choosing BPA-free water containers. The National Agency of Drug and Food Control (BPOM) has established a safe BPA limit of 0.6 parts per million (ppm), as outlined in BPOM Regulation Number 20 on Food Packaging. Inspections conducted by BPOM in 2021 and 2022 on gallon containers at production facilities and distribution channels revealed that 3.4% of the samples exceeded the allowable BPA migration limit.

Bisphenol A (BPA) is a chemical commonly used in manufacturing polycarbonate plastics and epoxy resins. Its industrial significance lies in its strength, clarity, and heat resistance. BPA is present in various everyday products, including water bottles, food containers, bottle caps, and children's toys.

The regulation of BPA content in plastic food and beverage packaging is governed by Law Number 8 of 1999 on Food Law and Consumer Protection (*Veteran Law Review*, 6(1), 61–73). For instance, BPA levels of 1.4850 ppm have been identified in some bottled drinking water companies (AMDK) that claim their products are environmentally friendly.

In DKI Jakarta, the expansion of the food and beverage industry, particularly the AMDK sector, is closely tied to the increasing volume of plastic waste. High consumer purchasing power has led many AMDK companies to claim their products are environmentally friendly. However, this has resulted in a new issue: a significant surge in plastic waste. According to the Jakarta Environmental Agency (DLH), the total waste generated in DKI Jakarta reached 12,101,169.59 tons between 2019 and 2023.



Source: National Waste Management Information System 2021-2023
Figure 1. Data on Increase in Waste in DKI Jakarta City 2021-2023

Environmental concerns have gained significant attention among global consumers and are widely discussed within academic and industrial circles. Increasing awareness of environmental challenges has placed companies under pressure, highlighting the need for transparent carbon emission disclosures.

Disclosing carbon emissions is crucial as it provides stakeholders with insight into a company's efforts to mitigate the effects of climate change and global warming. This

requirement is outlined in the Limited Liability Company Law (PT) No. 40 of 2007, Article 66(c), which obligates companies to report social and environmental responsibility activities in their annual reports. Additionally, OJK Circular Letter No. 30/SEOJK.04/2016 mandates issuers and public companies to incorporate social and environmental responsibility reports into their annual or sustainability reports.

Environmental challenges represent a global concern demanding coordinated solutions. Recognizing the critical role of the environment in sustaining life has driven businesses, organizations, and governments to promote public awareness of environmental preservation and overall well-being.

METHOD

This research employs a quantitative approach with a descriptive method, utilizing secondary data. The secondary data analyzed includes information on Green Manufacturing, Green Advertising, and Greenwashing in relation to corporate sustainability. As explained by Sugiyono (cited in Sinaga, 2021), quantitative research emphasizes the examination of causal relationships, specifically the degree to which independent variables influence dependent variables. The data for this study was obtained from the financial reports of companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period, accessible through the IDX website (www.idx.com).

The study's population comprises 125 companies, representing all consumer goods sector firms listed on the IDX that consistently issued financial reports during the 2019-2023 period.

A sample of 10 consumer goods sector companies listed on the IDX between 2019 and 2023 was selected. Their financial reports were obtained from the official IDX website or the companies' individual websites. The sampling technique used in this research is Purposive Sampling.

RESULTS AND DISCUSSION

First Hypothesis (H1)

The Green Manufacturing coefficient value of 0.400865 indicates that Green Manufacturing has a positive influence on Corporate Sustainability. The significance value of $0.0000 < 0.05$ with a t statistic value of $5.807235 > t$ table of 1.67866 indicates that Green Manufacturing has a positive but not significant influence on corporate sustainability.

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In the context of stakeholder theory, the implementation of Green Manufacturing can be seen as a company's effort to meet the expectations and demands of various stakeholders, such as consumers, governments, and local communities, who are increasingly concerned about environmental issues. Meanwhile, legitimacy theory suggests that companies that adopt Green Manufacturing seek to gain legitimacy from society and stakeholders by demonstrating their commitment to environmentally friendly practices, even though significant impacts on sustainability may not yet be fully visible.

The results of this study are in line with research (Pratama Aditya, 2022) which states that the implementation of Green Manufacturing has a positive effect and has not had a significant impact on the industrial world regarding sustainable manufacturing.

Second Hypothesis (H2)

The coefficient value of 0.400865 for Green Manufacturing demonstrates a positive effect on Corporate Sustainability. Despite this, a significance value of $0.0000 < 0.05$ and a t-statistic of $5.807235 > \text{a t-table of } 1.67866$ indicate that the positive effect of Green Manufacturing is not statistically significant. These results confirm H1, suggesting that Green Manufacturing has a partially positive but statistically insignificant impact on Corporate Sustainability.

In the framework of stakeholder theory, Green Manufacturing can be seen as a corporate initiative to address the growing environmental concerns of stakeholders such as consumers, government entities, and local communities. Legitimacy theory further posits that companies employing Green Manufacturing aim to establish societal and stakeholder legitimacy by showcasing their dedication to eco-friendly practices, even though the significant impact on sustainability may not yet be fully evident.

This aligns with findings from Pratama Aditya (2022), which indicated that while Green Manufacturing implementation positively influences the industrial sector, its significant contribution to sustainable manufacturing has yet to be realized.

Third Hypothesis (H3)

The coefficient value of 0.026786 for Greenwashing suggests a positive influence on the dependent variable. However, with a significance value of $0.2311 > 0.05$ and a t-statistic of $1.213459 < \text{a t-table of } 1.6786$, it indicates that while Greenwashing has a positive effect, it is not statistically significant. These results confirm H3, implying that Greenwashing has a partial positive but insignificant impact on Corporate Sustainability.

According to stakeholder theory, companies practicing Greenwashing may aim to meet stakeholder demands for a greener image. However, such benefits may be temporary and risk damaging long-term relationships with key stakeholders, including consumers, regulatory bodies, and communities. Within legitimacy theory, Greenwashing may provide short-term legitimacy, but the inability to fulfill environmental claims can lead to a loss of credibility when the gap between actions and claims becomes evident, ultimately harming the company's sustainability in the long term.

These findings diverge from the study by Valencia et al. (2021), which found that Greenwashing exerts a weak negative influence on eco-friendly brand associations and brand credibility. As a result, it indirectly affects eco-friendly brand equity and consumer purchase intentions.

Fourth Hypothesis (H4)

The F-test results using the chosen model, Common Effect Model (CEM), reveal that the F-statistic value of 17.77743 exceeds the F-table value of 3.20, with a significance level of $0.000000 < 0.05$. This indicates that Green Manufacturing, Green Advertising, and Greenwashing impact corporate sustainability. In this study, the Adjusted R-squared value of 0.506706 indicates that Green Manufacturing (X_1), Green Advertising (X_2), and Greenwashing (X_3) account for 50.67% of the variation in Corporate Sustainability (Y) within companies in the consumer goods sector, specifically in sub-sectors like plantations, dairy, retail, and food and beverage distribution. The remaining 49.33% of Corporate Sustainability is attributed to other factors not examined in this research.

The findings of this study are consistent with Tsou Tsoutsoura (2004) and Tresnawati (2008), who found a positive impact of CSR disclosure on company profitability. This study further supports Al-Tuwajiri's (2003) research, which concluded that environmental disclosure has a positive and significant effect on financial performance.

CONCLUSION

From the results of the study on empirical evidence regarding the effects of Green Manufacturing, Green Advertising, and Greenwashing on the Sustainability of companies in the Consumer Goods Sector, specifically in subsectors such as plantations and crops, dairy products, retail, and food and beverage distribution listed on the Indonesia Stock Exchange between 2019 and 2023, the following conclusions can be made:

1. Green Manufacturing (X₁) shows a partial positive effect, though not significant, on Corporate Sustainability.
2. Green Advertising (X₂) demonstrates a partial negative effect, but it is not significant on Corporate Sustainability.
3. Greenwashing (X₃) exhibits a partial positive effect, yet it is not significant on Corporate Sustainability.
4. Green Manufacturing, Green Advertising, and Greenwashing collectively influence Corporate Sustainability.

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