

Unveiling the Green Truth: How Transparent Are Malaysian Manufacturing Companies About Their Carbon Footprint

Khairunnisa Ibrahim (Corresponding author)

Faculty of Economics, Business and Accounting

i-CATS University College, Kuching, Sarawak, Malaysia

E-mail: khairunnisa_ibrahim@icats.edu.my

Mohamad Jais

Faculty of Economics and Business

Universiti Malaysia Sarawak, Malaysia

E-mail: jmohamad@unimas.my

Abu Hassan Md Isa

Faculty of Economics, Business and Accounting

i-CATS University College, Kuching, Sarawak, Malaysia

E-mail: abu@icats.edu.my

Muhammad Adzlan Syah Ahmad Jaffary

E-mail: adzlansyah89@gmail.com

Received: October 15, 2024 Accepted: November 12, 2024 Published: December 1, 2024

doi: 10.5296/ijaf.v14i4.22327

URL: <https://doi.org/10.5296/ijaf.v14i4.22327>

Abstract

Environmental sustainability has become a key concern for businesses worldwide, with expectations that they take responsibility for their carbon emissions and environmental effects.

Reducing carbon emissions is critical for businesses due to companies' regulatory pressures and market expectations. Malaysia increased its mitigation ambition with an unconditional target to cut carbon intensity against GDP by 45% by 2030 compared to 2005 levels. This study aims to evaluate the extent of carbon footprint disclosure among manufacturing companies in Malaysia. Companies listed in Bursa Malaysia were chosen as the sample data in this study. The result of content analysis, approximately 18.97%, 269 of respondents are willing to disclose their carbon footprint information, suggesting a relatively low level of carbon footprint reporting. The policymakers should provide incentives for investment in green technology and enact strict regulations to encourage more companies to engage in carbon reporting.

Keywords: Carbon disclosure, Carbon reporting, Sustainability, Manufacturing

1. Introduction

The phrase 'carbon footprint' has gained significant popularity recently and is now widely used in the media, particularly in Malaysia. A carbon footprint denotes the total emissions of carbon dioxide (CO₂) attributed to the activities of an individual or entity, which may include buildings, corporations, or nations. This metric encompasses direct emissions from fossil fuel combustion in sectors such as manufacturing, heating, and transportation, as well as the emissions generated in producing electricity for consumer goods and services. Furthermore, the concept of carbon footprint frequently incorporates other greenhouse gases, including methane, nitrous oxide, and chlorofluorocarbons (CFCs) (Selin, 2024).

Sustainability reporting has become essential for conducting business, as firms face mounting pressure to exhibit dedication to corporate social responsibility in response to stakeholder demands for greater transparency (CorporateRegister, 2008). Organizations are being encouraged to implement more sustainable practices and reduce their carbon footprint; a trend observed not only in Malaysia but globally. While some companies have achieved substantial progress in this domain, others remain behind. Thus, it is imperative to comprehend the impact of an organization's carbon footprint on its financial performance.

Malaysia aims to achieve net-zero greenhouse gas (GHG) emissions by 2050. Malaysia increased its mitigation ambition with an unconditional target to cut carbon intensity against GDP by 45% by 2030 compared to 2005 levels. In pursuit of this goal, the government is developing the Long-Term Low Emissions Development Strategy (LT-LEDS). The LT-LEDS intends to outline actionable programs and policies required to achieve significant GHG emission reductions, in line with the objectives of the United Nations Framework Convention on Climate Change (UNFCCC). Additionally, this strategy will facilitate Malaysia's transition to a low-carbon, climate-resilient economy by 2050, ensuring it is orderly and equitable. LT-LEDS also seeks to identify potential opportunities across various sectors.

1.1 Problem Statement

The increasing urgency of climate change necessitates enhanced transparency in carbon footprint reporting among manufacturing companies. In Malaysia, the lack of comprehensive disclosure regarding carbon emissions poses significant challenges for stakeholders,

undermining efforts to implement effective sustainability practices. This study seeks to investigate the degree of transparency in carbon footprint reporting by Malaysian manufacturing firms. However, the enforcement of these regulations has been inconsistent, prompting calls for more stringent measures to effectively address the environmental challenges (Ismail & Imran, 2024). In addition to regulatory pressures, there is a growing expectation for corporate responsibility. Companies are increasingly required to disclose their carbon emissions and adopt sustainable practices. This aligns with government initiatives that Malaysia wants to reduce carbon emissions by 45% from 2005 to 2030. Furthermore, to reach carbon net zero in the year 2050.

2. Literature Review

2.1 Trends

Recognizing the growing importance of carbon emissions reduction and the potential advantages of an environmentally sustainable society, the Malaysian government has undertaken substantial initiatives to combat greenhouse gas (GHG) emissions in alignment with international commitments. Under the National Determined Contribution (NDC) made during COP26 and reaffirmed at COP27, Malaysia aims to achieve net-zero emissions by 2050 and reduce CO₂ intensity relative to GDP by 45% by 2030. The implementation of carbon pricing is expected to guide the economy toward carbon-neutral growth by enhancing resource efficiency, encouraging investment in clean energy, and lowering emissions (Susskind et al., 2020).

Previous research has predominantly focused on the energy and agriculture sectors, with relatively little attention given to the manufacturing industry. This limited scope has resulted in a substantial gap in our understanding of how manufacturing companies report and manage their carbon emissions. This research will offer evidence based recommendations to strengthen regulatory frameworks and assist companies in advancing towards greater transparency and sustainability.

The introduction of carbon tax schemes stands out as a significant direct measure to reduce national emissions. Such a carbon tax initiative is designed to send essential price signals to alter consumer behaviors that are detrimental to environmental sustainability. However, establishing a carbon tax in developing countries like Malaysia poses challenges, as it requires balancing economic growth, environmental preservation, social equity, and poverty alleviation. A crucial step in this process involves reviewing and justifying fossil fuel subsidies to create a more equitable environment for renewable energy sources (Susskind et al., 2020).

2.2 Theoretical Framework: Legitimacy Theory and Stakeholder Theory

The legitimacy hypothesis posits that firms with poor carbon performance may present their outcomes vague and unsupported to preserve their credibility and meet stakeholder expectations (O'Donovan, 2002). This theory further implies that companies must align their behaviors with social norms to ensure survival. However, the notion of legitimacy carries negative implications. Climate change represents a significant ethical challenge for

contemporary businesses and society (Dahlmann et al., 2019). Through voluntary carbon disclosure, companies can mitigate credibility risks and influence public perception as part of their image-management strategies (Cho & Patten, 2007). Ziegler et al. (2011) note that energy companies actively promote their climate change adaptation efforts to enhance their corporate image, gain recognition from regulatory bodies regarding global warming, and ultimately improve stock performance. A longitudinal analysis indicated that the level of environmental disclosures in Malaysia is relatively low; however, certain corporate factors, such as the size of the firm and its leverage, positively affect the degree of these disclosures (Ahmad & Sulaiman, 2004).

According to the stakeholder theory (Ansoff, 1965), managers bear significant responsibility for meeting stakeholder expectations and addressing their requests. They are also responsible for resolving conflicts with stakeholders to ensure the long-term sustainability of the company. According to the stakeholder theory, this process must also take into account the current perspectives of other stakeholders in addition to the enterprise's resource environment. Emphasizes the importance of addressing the needs and concerns of various stakeholders, which drives companies to enhance their sustainability disclosures (Aluchna et al., 2023). Stakeholders, particularly governmental and non-governmental organizations, significantly pressure companies to disclose information related to corporate social and environmental responsibility (CSER) (Hamzah & Abdullah, 2018).

3. Methodology

3.1 Research Design

Content analysis was employed to examine textual information, focusing on quantifying and measuring specific elements, such as CO₂ emissions, within sustainability reports. This study assesses the carbon footprint disclosures of listed manufacturing companies, categorizing the information into Scope 1, Scope 2, and Scope 3 emissions. This approach allows for a thorough and transparent evaluation of how companies report their carbon footprints, providing valuable insights into their environmental responsibilities and compliance with reporting standards.

3.2 Sampling and Sample Size

This study utilizes purposive sampling, concentrating exclusively on companies that disclose carbon footprint data. The initial sample consisted of 1,107 firm-year observations; however, 897 observations were excluded due to either the lack of available carbon footprint information or the companies' reluctance to publicly share their responses. Given that Malaysia is still relatively new to this field, the final sample includes 210 firm-year observations, representing 70 firms for each of the years 2020, 2021, and 2022.

4. Findings and Discussion

This section presents the results of the study in a clear and concise manner, followed by an interpretation of the findings in relation to existing literature.

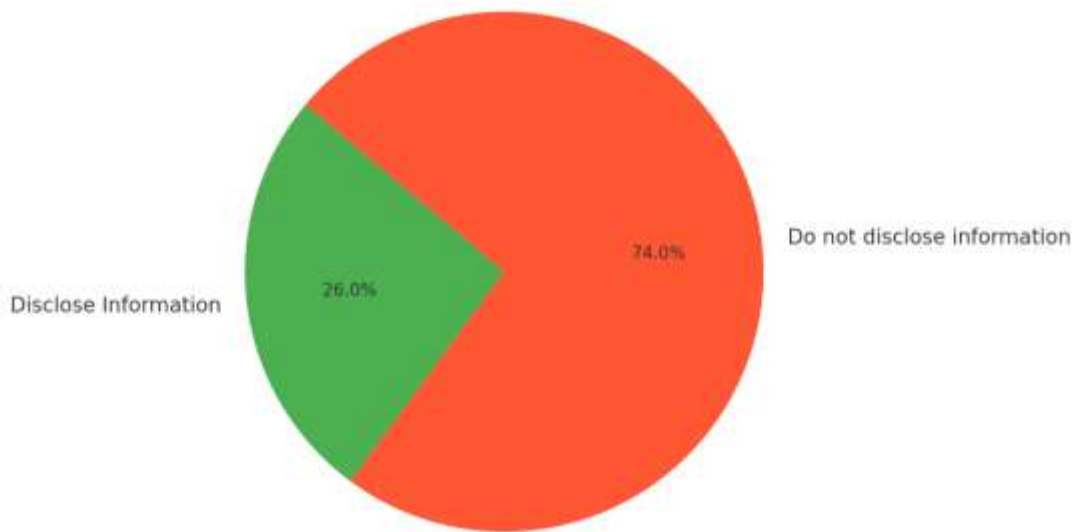


Figure 1. Carbon Footprint Reporting among Listed Manufacturing companies in Malaysia, 2022

The data presented in Figure 1 regarding carbon footprint reporting among listed manufacturing companies in Malaysia for the year 2022 reveals critical insights into transparency practices within the sector. Of the 269 manufacturing companies listed on Bursa Malaysia, only 70 companies, accounting for approximately 26.02%, disclosed their carbon footprint information. This low disclosure rate indicates a concerning lack of transparency regarding carbon emissions reporting among these firms. Conversely, a significant majority, comprising 199 companies or approximately 73.98%, did not disclose any carbon footprint information, suggesting that a considerable number of manufacturing entities either lack the necessary data, do not prioritize carbon footprint reporting, or are not prepared to share this information publicly.

These findings highlight an urgent need for enhanced transparency in environmental disclosures within the Malaysian manufacturing sector. The limited percentage of firms disclosing carbon footprint data may impede efforts to evaluate the industry's overall environmental impact and its commitment to sustainability. Various factors may contribute to these low disclosure rates, including insufficient regulatory requirements, limited awareness of the importance of carbon footprint reporting, and potential apprehensions regarding the disclosure of sensitive operational information.

The lack of a legal obligation for publicly traded companies to report carbon information, combined with the nascent stage of these practices, likely contributes to the limited extent of such disclosures (Rahman, 2020). Notably, the assessment of carbon emissions is still an emerging practice among Malaysian firms. Consequently, only a handful of companies provide information regarding their accounting systems for total greenhouse gas (GHG) emissions measured in metric tonnes of carbon dioxide (CO₂), along with GHG emissions categorized by scope (Scope 1, Scope 2, and Scope 3). Additionally, they often fail to present emissions data for each scope broken down by business units, facilities, sources, or activities,

as well as details on global emissions (Rahman, 2020). Furthermore, these results align with Ahmad and Mohamad's (2014) claims that Malaysian firms typically disclose only basic, general, and soft information. Many organizations avoid sharing detailed information in their annual reports, deeming it immaterial or fraught with uncertainty. This observation is also consistent with Adinehzadeh et al.'s (2018) finding that companies primarily disclose carbon information for the sake of enhancing their reputation and image, without providing stakeholders with a thorough understanding of carbon-related issues from a strategic viewpoint. These observations lend support to legitimacy theory, which posits that the disclosure practices of Malaysian companies reflect symbolic actions aimed at fostering an impression of environmental responsibility and meeting expectations for environmental accountability (Rahman, 2020). These results are consistent with the first research objective of this study.

5. Limitation and Future Research

5.1 Policymaker

Given these insights, policymakers are encouraged to implement measures that foster environmentally responsible growth. Firstly, financial incentives such as tax credits, grants, or subsidies should be provided to firms investing in green technologies. Such incentives can help mitigate the initial costs of adopting environmentally friendly practices and stimulate innovation in the sector. Additionally, support for research and development (R&D) initiatives focused on green technologies is essential, as it can drive the creation of innovative solutions that enhance both environmental and operational performance

5.2 Entrepreneur

Smaller and newer firms, often exhibiting stronger financial performance, are advised to capitalize on their flexibility and innovative capabilities to maintain and enhance their market standing. By persistently innovating in both processes and products, these firms can stay competitive and adapt to changing market dynamics and regulatory requirements. Moreover, improving transparency and reporting on environmental impacts and sustainability initiatives is vital. Transparent reporting builds trust among stakeholders, including investors, customers, and regulators, and can draw investment from socially responsible entities that prioritize sustainability.

5.3 Future Research

Future research could delve into various dimensions of carbon footprint transparency within the Malaysian manufacturing sector. Investigating the impact of regulatory changes on disclosure practices could provide valuable insights into how policy modifications influence corporate behavior. A comparative analysis between the manufacturing sector and other industries might highlight sector-specific challenges and best practices. Moreover, examining the role of corporate governance in enhancing transparency and the influence of international environmental standards could offer strategies for improving disclosure practices. Additionally, researching the barriers to comprehensive carbon footprint disclosure and assessing the effectiveness of voluntary versus mandatory policies could identify obstacles

and potential solutions. Finally, exploring the impact of digital technologies, innovations, and sustainable supply chain management on carbon footprint reporting could reveal how technological advancements and strategic approaches contribute to greater transparency within the industry.

6. Conclusion

One of the significant contributions of this study is its focus on the limited extent of carbon footprint reporting among Malaysian manufacturing firms, with only 26% of companies disclosing such information. The findings corroborate legitimacy theory, suggesting that numerous firms engage in symbolic reporting to improve their public image rather than providing thorough data on carbon emissions. These results also highlight the absence of regulatory mandates for carbon disclosure in Malaysia, contributing to the slow implementation of sustainable practices.

The research has substantial implications for various stakeholders. For investors, it underscores the importance of integrating environmental considerations into decision-making processes, especially in light of potential long-term risks associated with regulatory changes. For policymakers, the findings emphasize the necessity for stronger environmental regulations and incentives to promote investments in green technologies, thereby fostering sustainable growth in the manufacturing sector. Entrepreneurs are advised to adopt sustainable practices to enhance operational efficiency and take advantage of financial incentives for eco-friendly technologies.

References

- Adinehzadeh, R., Jaffar, R., Shukor, Z. A., & Rahman, M. R. C. A. (2018). The mediating role of environmental performance on the relationship between corporate governance mechanisms and environmental disclosure. *Asian Academy of Management Journal of Accounting and Finance*, 14(1), 153-183. <https://doi.org/10.21315/aamjaf2018.14.1.7>
- Aluchna, M., Roszkowska-Menkes, M., Jastrzębska, E., & Bohdanowicz, L. (2023). Sustainability reporting as a social construct: the systematic literature review within socio-political view. *Social Responsibility Journal*, 19(8), 1535-1554. <https://doi.org/10.1108/srj-06-2022-0231>
- Bank Negara Malaysia. (2022). *Title of the document*. Retrieved from https://www.bnm.gov.my/documents/20124/10150308/ar2022_en_box4.pdf
- Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32(7), 639-647.
- Corporate Register. (2023, March 13). *Homepage - Corporate Register*. Retrieved from <https://corporateregister.com/>
- Dahlmann, F., Branicki, L., & Brammer, S. (2019). Managing carbon aspirations: The influence of corporate climate change targets on environmental performance. *Journal of Business Ethics*, 158(1), 1-24.

Encyclopedia Britannica. Retrieved from
<https://www.britannica.com/science/carbon-footprint>

Hamzah, N., & Abdullah, M. (2018). Stakeholder Power towards Corporate Social and Environmental Responsibility Disclosure: Evidence from Malaysia. *Asian Journal of Accounting and Governance*, 10, 1-10. <https://doi.org/10.17576/ajag-2018-10-01>

Ismail, F., & Imran, M. (2024). Exploring the impact of employee green behaviour, and green HRM on environmental performance? The significance of green innovation.

O'Donovan, G. (2002). Environmental disclosures in the annual report. *Accounting, Auditing & Accountability Journal*, 15(3), 344-371.

Rahman, N. R. A. (2020). Hard and soft carbon disclosures: Malaysia's carbon intensive industries. *European Proceedings of Social and Behavioural Sciences*. <https://doi.org/10.15405/epsbs.2020.12.05.22>

Selin, N. E. (2024, September 21). *Carbon footprint | Definition, Examples, Calculation, Effects, & Facts*.

Susskind, L., Chun, J., Goldberg, S., Gordon, J., Smith, G., & Zaerpoor, Y. (2020). Breaking Out of Carbon Lock-In: Malaysia's path to decarbonization. *Frontiers in Built Environment*, 6. <https://doi.org/10.3389/fbuil.2020.00021>

Wiedmann, T. O., & Minx, J. C. (2008). A Definition of 'Carbon Footprint' ISA UK Research Report 0701.

Ziegler, A., Busch, T., & Hoffmann, V. H. (2011). Disclosed corporate responses to climate change and stock performance: An international empirical analysis. *Energy Economics*, 33(6), 1283-1294. <https://doi.org/10.1016/j.eneco.2011.03.007>

Copyright Disclaimer

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>)