NUS National University of Singapore
Centre for Governance and Sustainability
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PROMOTING BEST PRACTICES IN ONLINE MARKETING

An Examination of Greenwashing in Singapore

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Executive summary

1 The rise of greenwashing coincides with an increase in consumer demand for sustainable products. A 2018 Nielsen survey of global consumers revealed that 41% of consumers are willing to pay a premium for products containing all-natural or organic ingredients and 38% are willing to pay a premium for products containing environmentally friendly materials (e.g. Terracycle certified, compostable packaging, reusable). In the same vein, a survey of 1000 US consumers by Toluna revealed that consumers are willing to pay a 5% premium for environmentally friendly products.

2 Given the proliferation of online shopping in Singapore, it is timely to investigate the prevalence and types of greenwashing among e-commerce merchants in Singapore to better protect Singapore residents against greenwashing.

3 In this study, we aim to elucidate the state of greenwashing among e-commerce merchants in Singapore. In seeking to understand the state of greenwashing in Singapore, we will investigate the prevalence of greenwashing across websites frequently visited by Singapore residents, across the most popular e-commerce categories: Books, department store, electronics and physical media, fashion and beauty, food and personal care, furniture and appliances, marketplace, outdoor and sporting goods, toys, DIY and hobbies, and travel. Given that greenwashing encompasses many facets, we also hope to elucidate the types of greenwashing practices that are most common across e-commerce sites.

4 To analyse the prevalence of greenwashing in Singapore, we focused on the top 100 most visited sites by Singapore residents in the month of October 2022 based on traffic share information from Similarweb. In the development of the conceptual model, this study seeks to understand the phenomenon of greenwashing by investigating the level of disclosure and non-disclosure of environmental claims across websites to elucidate the state of greenwashing in Singapore. Our greenwashing measurement model, which helps us understand the prevalence of greenwashing, comprises 8 indicators aimed at businesses and consumers.

5 We evaluated green claims based on product information available on the individual product sites, as this is the information that is available to consumers. There may be instances where sellers may potentially be able to back up their claims with additional evidence not available online, in which case the claim would not amount to greenwashing. Such cases are also categorised as ‘Greenwashing’ within our framework which evaluates claims based on the information on the website.

6 Our findings reveal that businesses do not make disclosures about their follow-through on certification and whether they engage sustainable suppliers. We found that making unsubstantiated claims was the most common form of greenwashing, in that 51% of the products we reviewed across 100 e-commerce websites contain elements of unsubstantiated claims. Unsubstantiated claims are claims made without sufficient elaboration or details to support the claim. Some common examples are businesses claiming that their product is made from a natural, sustainable, or eco-friendly material but not providing any evidence such as 'made from 90% recycled plastic' or using words like 'eco' in the product name but without specifying any eco-friendly attributes in the product description.

7 Unsubstantiated claims were the most common in the electronics and physical media (67%, 29 of 43 products), books (61%, 14 of 23 products) and marketplace (61%, 196 of 321 products) categories and least common in the food and personal care (29%, 15 of 52 products) and outdoor and sporting goods (15%, 6 of 39 products) categories.

8 After unsubstantiated claims, technical jargon was the next most common form of greenwashing. Misleading technical jargon refers to use of technical jargon that is not widely used in the industry or even made up by companies, or the use of technical jargon to misinform consumers about a product's environmental impact, such as labelling ABS (acrylonitrile butadiene styrene) or EVA (ethylene-vinyl acetate) as environmentally friendly, although both are petroleum-based plastics. Misleading technical jargon was most common in the furniture and appliances (24%, 61 of 259 products) and marketplace (17%, 56 of 321 products) categories. No misleading technical jargon was used in the outdoor and sporting goods and travel categories – where technical terms were used, the terms were understandable or explained.

9 Based on this study we propose some recommendations to mitigate greenwashing and better protect consumers against greenwashing. Businesses should commit to genuine improvements, clean up supply chains, substantiate claims with better data and communicate clearly with their stakeholders. This enables them to operate more sustainably and support their green marketing claims. Advocates, consumers and NGOs should hold businesses accountable, create ecolabelling schemes and identify genuine environmental certifications from third-party organisations to verify claims when shopping. Regulators should enforce regulations to combat greenwashing and issue guidance to help businesses and consumers understand what constitutes greenwashing. Regulators should explicitly spell out penalties related to greenwashing infringements and follow up with enforcement to sufficiently disincentivise firms from greenwashing. Issuing guidance can reduce ambiguity around what constitutes greenwashing to facilitate enforcement.

Introduction

Rise of greenwashing

10 Consumers are showing a greater willingness to pay for sustainable products. Sales of products with ESG[1] claims have been outperforming those without ESG claims over the past 5 years (Am et al., 2023). IBM also found that 22% more consumers factored sustainability into their purchasing decisions in 2021 as compared to 2019 (Nowak et al., 2021). Consumers are willing to pay a premium on sustainable products as well. A 2018 Nielsen survey (Nielsen, 2018) revealed that 41% of consumers globally are willing to pay a premium for products containing all-natural or organic ingredients and 38% are willing to pay a premium on products containing environmentally friendly materials (e.g. Terracycle certified, compostable packaging, reusable). In the same vein, a survey of 1000 US consumers by Toluna (Toluna, 2019) revealed that consumers are willing to pay a 5% premium for environmentally friendly products.

11 The rise in consumer demand for sustainable products is accompanied by an increase in greenwashing (Lyon and Montgomery, 2015). The European Commission and national consumer authorities conducted an EEA (European Economic Area) wide sweep of websites and found more than 50% of products with sustainability claims had insufficient information and evidence to verify or support their green claims (European Commission, 2021). An international sweep of websites by the International Consumer Protection Enforcement Network (ICPEN), led by the Competition and Markets Authority (CMA) and The Netherlands Authority for Consumers and Markets (ACM), found that 40% of the 500 websites offering clothing, cosmetics, and food products utilised green marketing that is potentially misleading, such as ambiguous claims of products being eco-friendly or sustainable in the absence of evidence, the display of eco-labels that are not affiliated with any accredited organisation, and withholding negative environmental information about products to give the guise of environmental-friendliness (Competition and Markets Authority, 2021a). The claims were potentially misleading because they did not provide adequate information for consumers to verify the claim's veracity or the sustainability claims featured ambiguous terms such as "conscious" and "eco-friendly," which were difficult to substantiate (Competition and Markets Authority, 2021a).

12 Companies might also contribute to greenwashing through their corporate sustainability report when they selectively disclose only favourable content or fail to verify their disclosures (Loh & Yock, 2021a). Our Centre for Governance and Sustainability at NUS found in our 'Corporate sustainability reporting in ASEAN countries' report (Loh & Singh, 2020) that only 56% of listed companies in ASEAN countries reported unfavourable information in their sustainability report. We followed up with a 'Sustainability reporting review 2021' report focusing on 566 companies listed on the SGX (Loh & Tang, 2021). We found that companies listed in Singapore are increasingly reporting unfavourable aspects in 2021, compared to 2019. However, there is still a gap between the reporting of favourable versus unfavourable information, whereas 100% of the companies reported favourable information, only 65.7% of companies reported unfavourable information.

[1] ESG stands for environmental, social and governance, referencing key areas of a company's business practices in relation to sustainability.

13 Greenwashing generally refers to conduct on the part of a business that deceives or misleads consumers into believing that the business's practices are more environmentally positive, or that the product or service sold by the business offers greater environmental benefits, than is indeed the case. This is often accomplished through selective disclosure or decoupling. Selective disclosure is embellishing information related to positive environmental performance and concealing information about negative environmental performance. Decoupling entails putting a positive spin on the communication of the firm's corporate social actions despite having negative corporate social actions performance (de Freitas Netto et al., 2020).

14 As more consumers demand environmentally friendly products (Kerle et al., 2021), there are unscrupulous merchants who take advantage of this fervour by greenwashing (Akepa, 2021; Earth.org, 2022). One of the ways that consumers can safeguard themselves against greenwashing is to be able to discern if businesses are greenwashing in their sustainability claims (Loh & Yock, 2021b). However, consumers, even those with more environmental knowledge, have been found to do a bad job at identifying fake ecolabels, for example: a generic recycling ecolabel with no additional information, labels with vague, unverified claims of 'certified green environmentally conscious' , and irrelevant claims that states 'No CFCs[2]' (Urbański & ul Haque, 2020).

15 Given that not all consumers can discern greenwashing claims, therefore, it is in the interest of consumers if greenwashing is regulated. Greenwashing is often regulated under consumer protection law, and enforcement is enabled by explicit references to greenwashing, such as guidance on how the broader legislation will be specifically applied to greenwashing conduct. In the UK, a digital markets, competition and consumers bill is set to be introduced and businesses could be fined up to 10% of their global turnover for violations including greenwashing (Shalchi & Mirza-Davies, 2023; Ungoed-Thomas, 2023). A Green Claims Code has been published to guide businesses in communicating green claims that comply with legislation (Competition & Markets Authority, 2021b). As for the US, businesses that make disingenuous claims could be ordered to remove their advertisements and fined if they choose not to remove those advertisements (Clark, 2015; Federal Trade Commission, 2012b). Similar to the UK, green guides are issued to aid understanding of what may constitute misrepresentation (Federal Trade Commission, 2012b).

16 Similarly, countries in ASEAN do not have greenwashing specific laws but can regulate greenwashing under existing laws and regulations dictating that claims must be truthful and there should be no instance of misrepresentation (Allen & Gledhill, 2022). However, it is unlikely that firms in ASEAN will face legal consequences to the same extent as firms in Europe and the US at the moment (Hicks, 2023).

17 This is the situation in Singapore as well. Current laws and statutes that are relevant to greenwashing include the Consumer Protection (Fair Trading) Act 2003 which allows consumers to take legal action against companies for engaging in unfair practices in relation to consumer transactions such as false or misleading claims. There is also the Misrepresentation Act 1967 which allows a person who has entered a contract based on a negligent misrepresentation to claim damages against the other contracting party. The Singapore Code of Advertising Practice provides industry self-regulation guidelines requiring all

[2] CFCs refer to chlorofluorocarbons which are known to deplete the ozone layer and thus heavily regulated.

advertisements to be legal, decent, honest, and truthful. Laws and regulations in Singapore do not explicitly cover or define greenwashing. Thus, the burden is often on consumers to determine what constitutes greenwashing. That said, it is often difficult to prove that certain acts constitute unfair business practices, or to prove that damage has occurred from misrepresentation due to greenwashing. There may be a need to update and clarify the existing laws and regulations in Singapore to protect consumers and help businesses avoid greenwashing.

18 Given the proliferation of online shopping in Singapore (Guan & Chan, 2020; Neo, 2020; Ng, 2020), it is timely to investigate the prevalence and types of greenwashing among e-commerce merchants in Singapore to better protect Singapore residents against greenwashing.

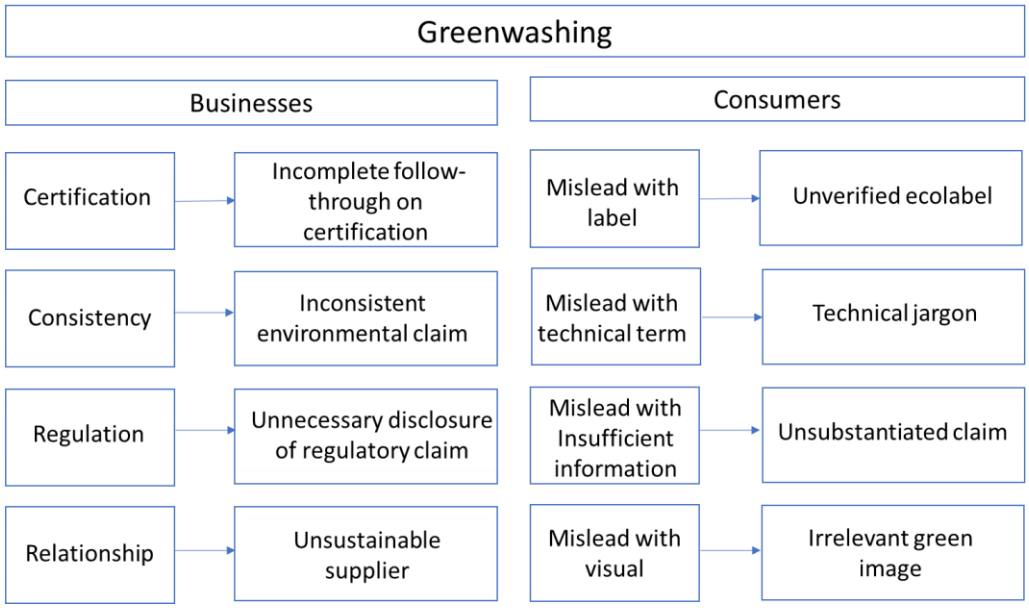
Scope of study

19 In this study, we aim to elucidate the state of greenwashing within e-commerce in Singapore. In seeking to understand the state of greenwashing in Singapore, we will investigate the prevalence of greenwashing across websites frequently visited by Singapore residents, as well as the prevalence of greenwashing across the top 10 most popular e-commerce categories: Books, department store, electronics and physical media, fashion and beauty, food and personal care, furniture and appliances, marketplace, outdoor and sporting goods, toys, DIY and hobbies, and travel. Given that greenwashing encompasses many facets, we also hope to elucidate the types of greenwashing practices that are most typical across e-commerce sites. The research findings will help us understand the severity of greenwashing across e-commerce websites in Singapore to 1.) inform consumers how to deduce greenwashing 2.) guide policymaking to safeguard consumers 3.) inform businesses how to guard against greenwashing.

Research framework

20 This study seeks to understand the phenomenon of greenwashing by investigating the types and quality of environmental claims across e-commerce websites (Figure 1) to shed light on the state of greenwashing in Singapore.

Figure 1
Conceptual model



21 In evaluating the prevalence of greenwashing across websites frequently visited by Singapore residents, we drew on the research studies done by the Climate Social Science Network (CSSN) (Nemes et al., 2022), which presents an integrated framework combining popular greenwashing frameworks, guidelines, and checklists developed by various actors, including academics, NGOs[3], business consultants, and green groups.

22 The measurement model adopted in this study comprises 8 indicators aimed at businesses and consumers (as shown in table 1 below). The greenwashing categories that are targeted at businesses include: certification, consistency, regulation, and relationship. These are pertinent operational considerations for businesses that are committed to environmentally friendly practices and seek to guard themselves against greenwashing. Conversely, the categories identified in the greenwashing framework for consumers are designed for the average consumer to easily deduce greenwashing when perusing a merchant's website. The indicators include: mislead with label, mislead with technical term, mislead with insufficient information and mislead with visual. The other aim of the greenwashing measurement model is to serve as greenwashing guidance for businesses and consumers. While there are existing

[3] Non-governmental organisations

greenwashing frameworks, we find that they contain too many technical terms to be useful for most businesses and consumers who may not be well-versed in technical environmental terms.

Table 1

Measurement model

Greenwashing categories	Target audience	Indicators of greenwashing	Evaluation
Certification	**Businesses**	**Incomplete follow-through on certification** The business failed to follow through with its commitments after obtaining certification	Not applicable – No relevant certification on the product Supported green disclosure – The business has obtained a certification that requires follow-through on environmental commitments, and they discussed the environmental commitments that they will be engaging in Greenwashing – The business has obtained a certification that requires follow-through on environmental commitments but has been reported in the media for conflicting the certification(s) received
Consistency		**Inconsistent environmental claim** The product function contradicts its environmental claims	Not applicable – Product makes no environmental claim Supported green disclosure – Environmental claim is disclosed and not inconsistent with product usage Greenwashing – Environmental claim detracts from the environmentally detrimental function of the product
Regulation		**Unnecessary disclosure of regulatory claim** The business made a claim when in fact it is a standard practice required by law	Not applicable – Product has no specific environmental claims Supported green disclosure – The business specifies environmental claim, and such a claim is not mandated by law Greenwashing – The business specifies environmental claim, but such a practice is mandated by law

Relationship		**Unsustainable supplier** The supplier (the business that manufactures the products) that the business engages with does not practice sustainable practices	Not applicable – No suppliers disclosed, or no marketing of sustainable suppliers Supported green disclosure – There is disclosure about supplier relationship and the supplier (the business that manufactures the products) engages in environmentally friendly practices Greenwashing – Supplier is disclosed and marketed as sustainable, but the supplier does not engage in sustainable practices
Mislead with label	**Consumers**	**Unverified ecolabel** The label/seal attached to the claim is not verified by an independent third-party body	Not applicable – No ecolabel Supported green disclosure – Mention of an eco-label or certification that is verified by a third-party external body Greenwashing – Mention of an eco-label or certification but it is verified internally, not specified or image designed to imitate an eco-label
Mislead with technical term		**Technical jargon** Claim contains technical language or complex scientific jargon that makes it difficult for people to understand and verify	Not applicable – No specific sustainable attributes disclosed Supported green disclosure – Sustainable attributes specified but details are understandable and/or easily verifiable Greenwashing – Sustainable attributes specified but terms are not widely used or used to misinform consumers
Mislead with insufficient information		**Unsubstantiated claim** Claim that has unclear or ambiguous meaning that misleads people about the business's, product's or service's environmental impact	Not applicable – No environmental claim Supported green disclosure – There is disclosure for this indicator for the product, but the claim is supported with specific sustainable attributes Greenwashing – Environmental claim is vague and/or unsupported

Mislead with visual		**Irrelevant green image** Claim features green or natural images in a way designed to imply that the product/business is more environmentally friendly than it really is	Not applicable – No disclosure for this indicator is present for the product Supported green disclosure – There is usage of green/natural image in the description of the product but the usage of such an image is supported or relevant to the product Greenwashing – Irrelevant green image used

Methodology

Evaluation

23 We assessed each of the products that we sampled on the 8 greenwashing indicators (Table 1) and they were evaluated as 'Not applicable', 'Supported green disclosure', or 'Greenwashing', based on the available product information. Our evaluation was based on all product information available on the individual product sites, as this is the information that is available to consumers.

24 A greenwashing indicator is 'Not applicable' when there is no disclosure related to the indicator. 'Supported green disclosure' refers to disclosures related to the indicator that are not misleading. 'Greenwashing' refers to unsupported or misleading claims related to the indicator.

25 Product information was evaluated based on whether the information available can sufficiently support the green claim, assuming the information is accurate and truthful. We did not assess the veracity of claims, for example investigating if a product was actually composed of 80% recycled polyester as stated.

26 Where there was insufficient information, no additional information was sought from the respective businesses for verification. As such, there may be instances where a product does indeed have the environmental benefits implied although the relevant information is not available to consumers online, in which case the claim would not amount to greenwashing. Such cases are also categorised as 'Greenwashing' within our framework which evaluates claims based on the available information.

Sampling

27 We focused on the top 100 most visited sites by Singapore residents in the month of October 2022 based on traffic share information from Similarweb. The sampled websites which span across 10 categories are presented in Table 2 below. There are some similarities across categories, namely electronics and physical media, and furniture and appliances; fashion and beauty, and food and personal care. To illustrate the difference, some examples of electronics are consumer electronics such as mobile phones and earphones, and some appliances would be washing machines and air-conditioning units. Examples of beauty products are cosmetics and similar products whereas examples of personal care are personal hygiene or cleaning products.

28 Of the 100 websites, 29 were multi-brand sites: 11 under the department store category and 18 under e-commerce marketplace. A challenge with sampling from multi-brands sites is the plethora of categories. To help us decide on the categories that we should focus on, we referred to an e-commerce report by Janio Singapore (Lim, 2022) which states that consumer electronics, fashion and beauty, and personal care are the top categories that consumers made their purchase from in 2021. Therefore, for multi-brands sites such as Amazon SG and Isetan Singapore, the researchers sampled from these 3 categories. It is understandable that within these categories, there will be sub-categories, for instance within food and personal care there could be sub-categories such as supplements and skin care, and the researchers sampled randomly across the sub-categories to ensure a good mix. The random sampling across the sub-categories is justifiable because on any given e-commerce site, the probability of any product page

being visited by a consumer is akin to a random selection. As for e-commerce sites that do not feature the product categories of consumer electronics, fashion and beauty and personal care, the categories to sample from were determined based on assessment of most sought-after categories through 1) the number of products offered in each category 2) the number of reviews for product in each category. Using the two determinants, we postulated that certain categories tend to be more popular, and those categories will thus be sampled.

29 To select the sampling frame, the following keywords were entered into the website's search box: environment, sustainable, eco, eco-friendly, bio, biodegradable, efficiency, recycle, green, nature, and natural. These key words are used to identify 'green' products that might be susceptible to greenwashing claims. Amongst the search results, we adopted random sampling to select up to up to 20 unique products (median = 10) per website to make up the sample.

30 For websites within the department store and marketplace categories, we sampled up to 20 unique products (median = 10) per category from 3 product categories: consumer electronics, fashion and beauty, and personal care. In evaluating the e-commerce sites for greenwashing, the researchers referred to each of the indicators in the greenwashing framework for consumers and businesses (as shown in table 1). The green claims are rated as 'Greenwashing', 'Supported green disclosure' or 'Not applicable' for each indicator.

Table 2

Categorisation of websites

Category[4]	**No. of companies**	**Websites reviewed**[5]
Books	4	abebooks.com, barnesandnoble.com, bookxcess.com, popular.com.sg
Department store	11	bigamart.com, costco.com.au, daisojapan.com, isetan.com.sg, metro.com.sg, og.com.sg, robinsons.com.sg, takashimaya.com.sg, tangs.com, target.com, walmart.com
Electronics and physical media	6	jbl.com.sg, mobyshop.com.sg, mous.co, one2world.com.sg, rasberrypi.com, reebelo.sg
Fashion and beauty	5	crumpler.com, lenskart.sg, muji.com.sg, nuskin.com, tumi.sg
Food and personal care	5	iherb.com, mothercare.com.sg, motherswork.com, pampers.com, pupsikstudio.com
Furniture and appliances	23	audiohouse.com.sg, bedandbasics.sg, bestdenki.com.sg, courts.com.sg, f31.sg, fortytwo.sg, furnituresg.com.sg, harveynorman.com.sg, hipvan.com, irugs.com.sg, iuiga.com, jiji.sg, mayer.sg, megadiscountstore.com.sg, megafurniture.sg,

[4] Source for website categorisation: (Kemp & Moey, 2019)
[5] Source for most visited websites: (Similarweb, 2022)

Category[4]	**No. of companies**	**Websites reviewed**[5]
		originmattress.com.sg, osim.com, philips.com.sg, starliving.com.sg, styledegree.sg, tcacoustic.asia, tefal.com.sg, wayfair.com
Marketplace	18	aliexpress.com, amazon.sg, banggood.com, dhgate.com, etsy.com, ezbuy.sg, fishpond.com.sg, flipkart.com, jml.sg, lazada.sg, lightinthebox.com, mall.shopee.sg, meesho.com, pgmall.my, qoo10.sg, sgshop.com, shopee.sg, snapdeal.com
Outdoor and sporting goods	3	decathlon.sg, outdoorlife.com.sg, patagonia.com
Toys, DIY and hobbies	24	artfriendonline.com, bigbadtoystore.com, bricksworld.com, drop.com, greenleif.sg, hardwarecity.com.sg, homenoffice.sg, horme.com.sg, istudiosg.com, jetpens.com, mobot.sg, nitecorelights.com, onedollaronly.com.sg, passiongadgets.com, photobooksingapore.com, rodalink.com, shop.singpost.com, spigen.com, spotlightstores.com, stationeryworld.com.sg, tfh.com.sg, thecollectorbase.sg, toyscentral.sg, yesasia.com
Travel	1	theplanettraveller.com

Findings

31 The findings are drawn from 100 websites across the 10 categories listed in Table 2 above. Up to 20 (median = 10) unique products were evaluated from each website. These are products that surfaced when the following keywords were entered into the website's search engine: environment, sustainable, eco, eco-friendly, bio, biodegradable, efficiency, recycle, green, nature, and natural. For department store and marketplace websites, we sampled up to 20 (median = 10) unique products per category from the top 3 categories.

32 We found that the most prevalent greenwashing claim was unsubstantiated environmental claim, 51% of the products that we sampled featured environmental claims that were unsubstantiated (Figure 2). Businesses did not make disclosures related to 'incomplete follow-through on certification' and 'unsustainable supplier'.

33 The distribution of greenwashing claims differs across website categories (Figure 3). Unsubstantiated claims were the most prevalent form of greenwashing in all categories. This was most common in the electronics and physical media (67%, 29 of 43 products), books (61%, 14 of 23 products) and marketplace (61%, 196 of 321 products) categories. Technical jargon was most common in the furniture and appliances (24%, 61 of 259 products) and marketplace (17%, 56 of 321 products) categories.

Figure 2
Greenwashing claims by indicator

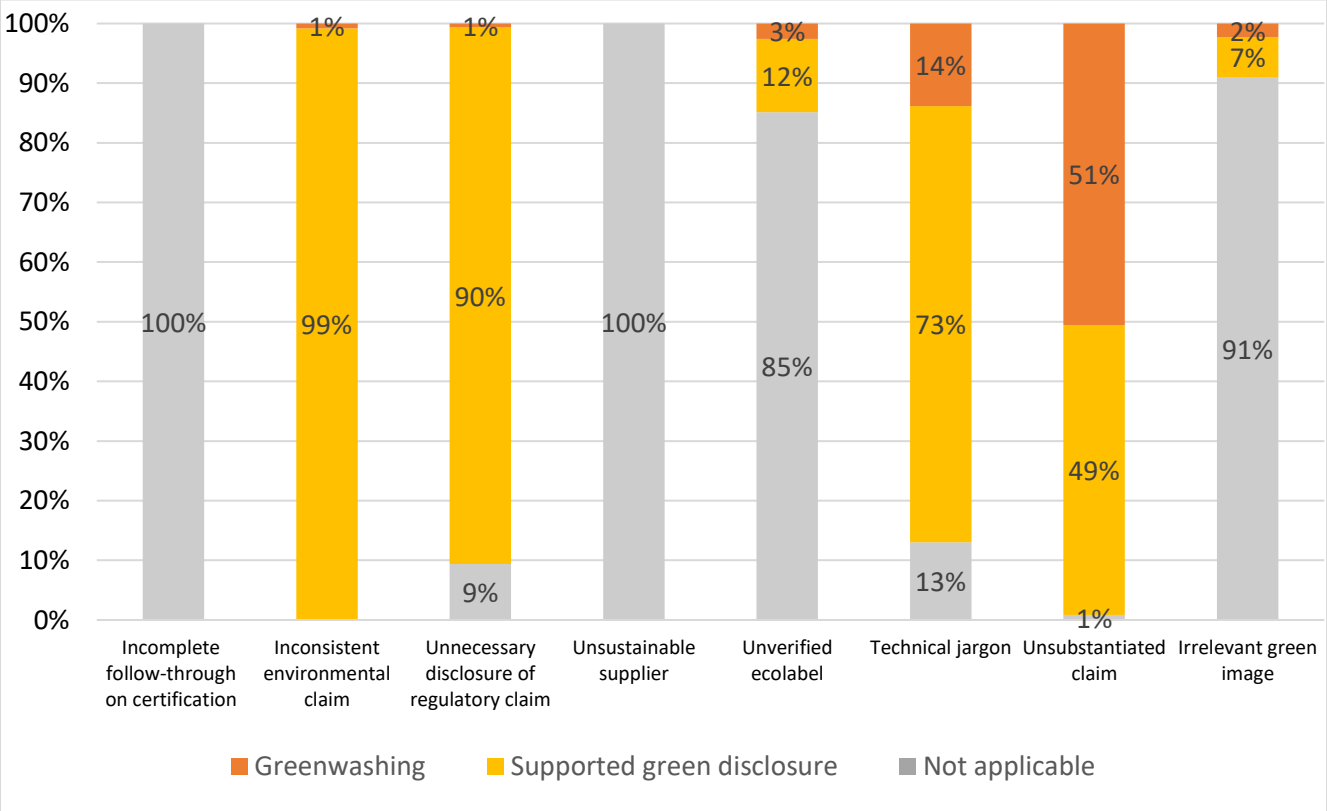
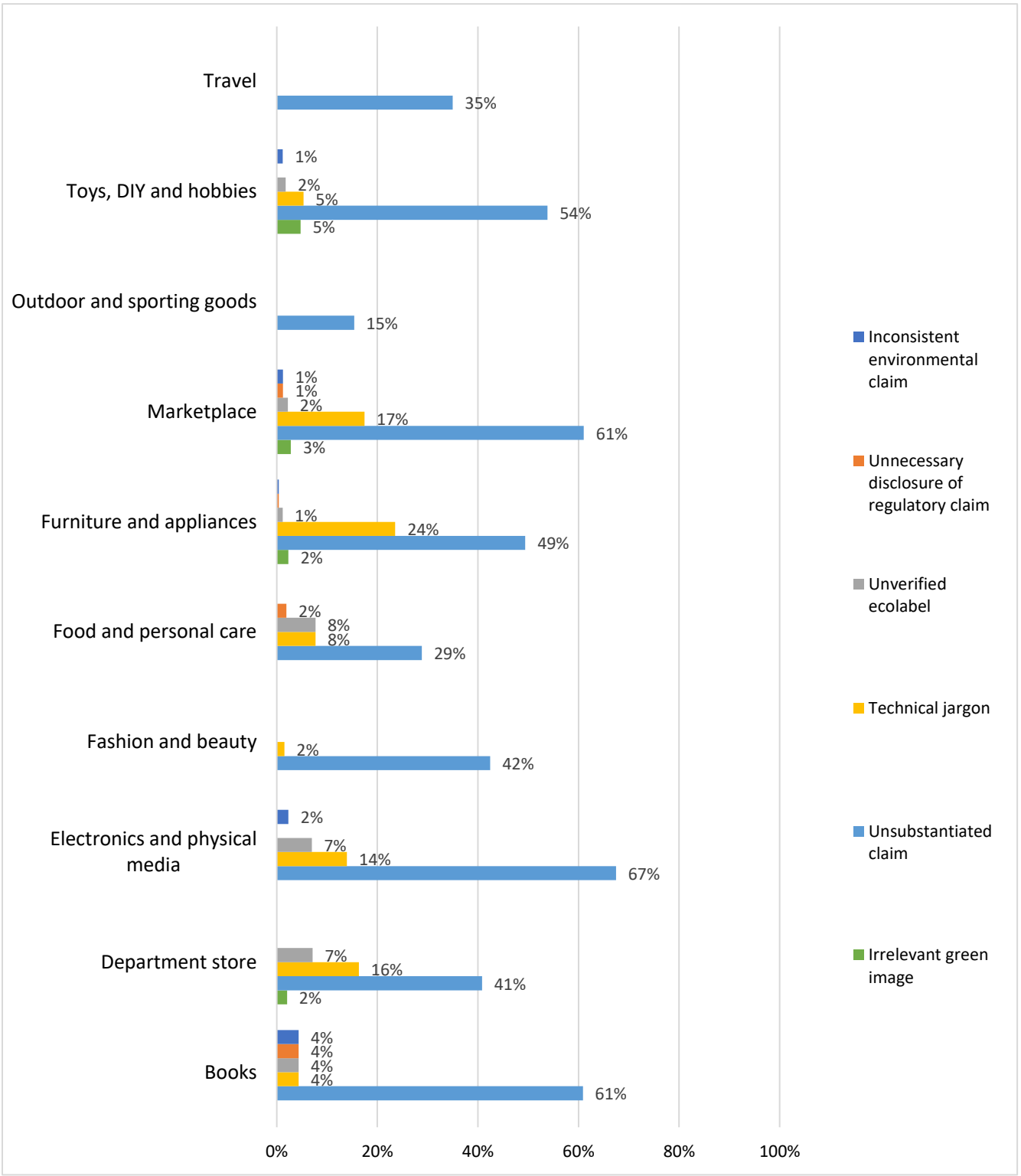


Figure 3
Greenwashing claims by website category



Incomplete follow-through on certification

34 In our study, we found that businesses did not disclose follow-through on certification as the certifications used did not require follow-through. One of the reasons could be because certifications requiring follow-through tend to pertain to commodities that are plagued by sustainability issues. The products that we sampled across the 10 product categories did not feature any commodities and that could be the reason that follow-through on certification was not observed.

35 One of the certifications that requires follow-through commitments is the Roundtable on Sustainable Palm Oil (RSPO) certification and businesses that have obtained such a certification are urged to illustrate prominently their sustainability commitments. The production of palm oil is associated with a whole host of environmental impacts such as deforestation, decline in biodiversity, and greenhouse gas emissions (Meijaard et al., 2020). The RSPO came about in the belief that sustainable palm oil is more beneficial than the boycott of palm oil (RSPO, n.d.). Firstly, for a product such as palm oil to gain prominence and henceforth sustainability certification, cooperation among palm oil manufacturers is required to address environmental and social issues with an eye on the bottom line. Secondly, there needs to be knowledge of the environmental and social issues pertaining to the palm oil industry as this would result in government, citizens, and NGOs demanding changes which often comes in the form of regulations and certifications (Thorlakson, 2018).

Inconsistent environmental claims

36 When it comes to making consistent environmental claims, 99% of the product claims made were consistent with the usage of the product. In assessing products for consistent environmental claim, we evaluate if the environmental claim such as ‘environmentally friendly’ and ‘eco-friendly’ detract from the function of a product. We found in our sample candles that are advertised as being made from environmentally friendly ingredients; however, the burning of candles results in poor air quality. Therefore, we would say that the environmental claim of a candle is inconsistent with its function. On the other hand, claiming products such as a shirt and a bag are environmentally friendly would not detract from the direct usage of those products, and hence in this case the environmental claim is consistent.

37 There were rare occurrences in which 1% of the product claims were inconsistent with the product usage such as a 100-piece box of single-use disposable plastic gloves that increases waste, but was described as ‘eco-friendly’ without further elaboration on its eco-friendly attributes.

38 Businesses are expected to only display environmental claims when the usage of the product does not contradict those claims. It will not be advisable to display environmental claims for products such as candles, single-use disposables, or cars with internal combustion engines because the direct usage of such products would result in a deleterious impact on the environment. Businesses should also avoid implying that products that are dangerous (e.g., ‘greener’ cigarettes) or extremely contentious (e.g., natural gas) are ‘green’ (Nemes et al., 2023).

Unnecessary disclosure of regulatory claim

39 In the realm of regulatory claim, 90% of product claims featured environmental claims which were not mandated by law, 9% of product claims made no specific environmental claim, and 1% of product claims featured environmental claims that were unnecessary as those claims reference practices that were mandated by law.

40 In some instances, the product descriptions for some LED lamps we found stated that they do not contain mercury. As Singapore is a Party to the Minamata Convention on mercury (National Environment Agency, 2020), businesses are not allowed to sell products containing mercury since 2020 (United Nations Environment Programme, 2019), therefore proclaiming that a product does not contain mercury is unnecessary. Marketing compliance to regulation as a sustainability attribute implies that such a feature is voluntary and the product is more sustainable than other alternatives, when all other similar products would have the same feature (e.g., all lamps should not contain mercury).

41 When it comes to making a claim that pertains to a product not containing a specific chemical compound, businesses should endeavour to keep up to date as to whether such substances have already been banned in the jurisdiction that the product will be sold. If the chemical compound or ingredient has been banned, businesses should refrain from making any claim that the product is free from that chemical compound or ingredient.

42 Most businesses disclose environmental claims such as biodegradability, natural ingredients, or using recyclable contents in their products, such claims are not mandated by law.

Unsustainable supplier

43 In our study, we found that businesses did not disclose information pertaining to suppliers and their sustainable practices and this might be due to the fact that greening the supply chain does not confer much economic benefits (Eltayeb et al., 2011; Park et al., 2022). Aside from financial returns, businesses might not feel compelled to monitor and green their supply chain if they are not subjected to regulations such as the UK Modern Slavery Act (2015) and the California Transparency in Supply Chains Act (2010). The abovementioned acts require businesses to reveal the actions that they are taking to combat slavery and human trafficking in their supply chain, thus requiring businesses to monitor their supply chain. That said businesses that work with sustainable suppliers might play up the fact as a way to differentiate themselves from their competitors.

44 It is important that businesses continue to perform their due diligence when working with a sustainable supplier. Take the example of IKEA which was accused of engaging in greenwashing in 2020. IKEA had been certified by the NGO Forest Stewardship Council (FSC) to use sustainably harvested wood for their furniture. However, it was discovered later that the lumber, which was certified by the NGO, turned out to have been harvested illegally (Lehren et al., 2021). While IKEA was implicated in this instance, the investigation exposed systemic weaknesses in certification schemes and the risks of overreliance on them (Earthsight, 2021). Certification schemes are a useful tool for businesses and consumers but should not absolve businesses of performing their own due diligence. It was IKEA's

responsibility to ensure that their suppliers had been engaging in sustainable practices, but they placed too much trust in a recognised NGO, and neglected to do their due diligence.

Unverified ecolabel

45 In terms of ecolabels, we found that 85% of products did not feature ecolabels, 12% of products featured ecolabels supported with third-party verification, and 3% of products had ecolabels without third-party verification.

46 Common within our sample were products described as ‘certified’ eco-friendly or using ‘certified’ materials without specifying the certification. For example, we found a wearable blanket for infants that claimed that it was a ‘certified eco-friendly product’ but no certification was specified or displayed.

47 There exists a plethora of ecolabels to emphasise different sustainability aspects of products. For fashion and apparel products, common certifications are Oeko-Tex which certifies that products are made without harmful substances, use organic cotton and/or manufactured sustainably, and Fair Trade Certified which ensures that products are sustainably sourced. In this study, we found that the Forest Stewardship Council (FSC) certification, water efficiency, and energy efficiency labels were the most disclosed labels with third-party verification.

48 When it comes to the purchase of appliances such as refrigerators and televisions, consumers can look out for a tick rating on the energy rating label. The rating system was introduced by the National Environment Agency to help consumers make an informed decision in purchasing energy-efficient appliances (National Environment Agency, n.d.). As for appliances that require the usage of water such as washing machines and showerheads, consumers should look out for the water efficiency label which was introduced by PUB to help consumers with the purchase of water-efficient appliances (PUB, n.d.).

49 Given the deluge of ecolabels out there, there is bound to be some similar certifications with differing requirements. In the case of a cruelty-free label, there exists PETA’s animal test-free label and the Leaping bunny label. While both are cruelty-free labels, there are differences in the certification process in that PETA does not require documents from suppliers to ensure compliance and does not conduct independent audits, which is contrary to the Leaping bunny certification (Ethical Elephant, 2022).

50 Noteworthily, a small handful of companies introduced their own ecolabels. While it may be encouraging to witness greater prioritisation of green products in the e-commerce market, herein lies the challenge of deeper entrenched greenwashing across a company's range of products, as we have seen notable brands like ASOS, Boohoo, Asda investigated over greenwashing claims (Competition and Markets Authority, 2022) in their self-declared range of "sustainable products". When using ecolabels, businesses should work towards verification by third-party contractors who would be unbiased. Consumers would have assurance that the certification is reliable and valid. If brands wish to use their own ecolabels or self-declared ranges of “sustainable products”, they should be transparent that these are labelled according to internal criteria and not third party verified. They should also specify the attributes of the products that qualify it for the internal ecolabel or classification under a “sustainable” product range.

Technical jargon

51 Regarding the use of technical jargon, we found that 73% of the product claims featured understandable environmental terms such as recycled materials or biodegradable but 14% of the product claims featured technical language that do not provide understandable information or misleadingly label certain materials as sustainable e.g., certain petroleum-based plastic varieties, capitalising on consumers' lack of technical knowledge. This indicator was not applicable to 13% of products which did not disclose specific sustainable attributes, such as 'environmentally friendly' claims without further elaboration. Where there were some sustainable attributes specified the claims would be evaluated as 'Supported green disclosure' if the claims were understandable or easily verifiable. Conversely, 'Greenwashing' would indicate that the sustainable attributes specified were not understandable or misleading.

52 Websites in the furniture and appliances (24%, 61 of 259 products) and marketplace (17%, 56 of 321 products) categories were more likely to feature technical environmental jargon in their product descriptions. Within the marketplace category, greenwashing by using technical jargon was most common among the sub-categories consumer electronics (23%, 23 of 98 products) and fashion and beauty (18%, 20 of 110 products).

53 Technical jargon refers to terms that are not well-understood by the layperson. With the development of new materials and manufacturing processes to reduce negative environmental impact, it is expected that some technical terms are used to substantiate efforts to reduce environmental impact. For example, Tencel is a brand that provides lower impact materials like lyocell derived from wood from sustainably grown forests and processed in a closed loop system which reduces waste and pollution. However, the use of technical jargon becomes misleading when it is used to misinform consumers, taking advantage of consumers' lack of technical knowledge. Examples found in this study include using technical terms for specific types of petroleum-based plastics (ABS, acrylonitrile butadiene styrene; EVA, ethylene-vinyl acetate) and labelling them as environmentally friendly without further elaboration, such as 'made from sustainable ABS material', and 'made of eco-friendly EVA'.

54 We can classify businesses that mislead using technical environmental jargon into two categories: 1) Using terms that are not widely used by industry and sometimes invented by the company 2) obfuscating consumers by using the technical name for material composition, for instance using terms such as EVA, PFCs (perfluorochemicals), ABS, PP (polypropylene), tritan, and TPU (thermoplastic polyurethane), which are all plastic, and inaccurately labelling these products as sustainable.

55 In this study, technical environmental jargon such as 'Made without PBDEs [Polybrominated diphenyl ethers], TDCPP [Tris(1,3-dichloro-2-propyl)phosphate] or TCEP [tris(2-carboxyethyl)phosphine], ("Tris") flame retardants' and 'Made without phthalates' were noted in products such as mattresses in the furniture and appliances category. The technical environmental jargons that are commonly seen in the food and personal care category were BPA-free (BPA: bisphenol A), PFAs-free (PFA: perfluoroalkoxy), and PFOA-free (PFOA: perfluorooctanoic acid). We postulate that products in these two categories may utilise technical environmental jargon because these products are closely linked to health and businesses want to impress upon consumers that their products pose no deleterious effect on health.

56 For products in the electronics and physical media category, most of the technical jargon we found relates to the composition of the products such as ‘Made from ABS material, environmentally friendly’ and ‘Made from environment-friendly TPU’. Understandably, products in this category would see a larger portion of greenwashing in technical environmental jargon because many of the products in this category are made from plastic. Businesses trying to market their products as being made from sustainable material would not want consumers to know that those products are made from plastic as it suffers from a bad reputation of being environmentally harmful. Therefore, businesses choose to use the technical material name, instead of making direct reference to plastic.

57 Businesses should be encouraged as much as possible to use environmental terms that are easily understood by most people. Understandably, it is not always possible for businesses to fall back on commonly understood terms when describing their products, in that case, businesses should try their best to explain the meaning or implications of technical terms. Using the examples that we described earlier of businesses using terms such as ABS and PP when detailing the composition of their products, those businesses could have indicated that the product is made from plastic (ABS) and that would clear up any confusion for the consumers. Businesses should not label materials as environmentally friendly without justification or elaborating on why the material is better for the environment compared to other materials.

Unsubstantiated claim

58 We found that greenwashing most evidently occurred in this domain, whereby businesses made environmental claims that are unsubstantiated. In this report, we have considered environmental claims to be unsubstantiated where the claims are made by the merchant without providing sufficient elaboration or evidence to support the claims on the website. Across all categories, 51% of product claims were unsubstantiated, 49% of products contained environmental claims that were substantiated, and 1% of products did not disclose any environmental claims.

59 Businesses make unsubstantiated claims when they 1) claim that their product is made from a natural, sustainable, or eco-friendly material but do not provide sufficient elaboration or evidence such as 'Made from 90% recycled plastic', or 2) when they use words like 'eco' in the product name but there is no elaboration or evidence of eco-friendly attributes in the product description. Commonly found in this study, businesses may claim that the product is made with recycled materials without specifying how much of the product is made with recycled content and/or the origins of the recycled content. This may be misleading as products that are composed of 1% recycled content technically still contain some recycled content and can be marketed as such. To substantiate claims, businesses should specify what recycled material is used, whether it is post-consumer or post-industrial recycled content and/or how much or which components of the product is made with the recycled content. Specifying and quantifying the recycled content used lends credibility and also allows consumers to make more informed purchasing decisions.

60 We also found that businesses inaccurately conflate ‘natural’ materials with sustainability, although natural resources can be unsustainably sourced and/or processed in a way that undermines their biodegradability. To advertise ‘natural’ products as sustainable, businesses should be transparent regarding the sourcing and processing of the raw material, and the product’s end of life, such as whether

it is biodegradable in a domestic or industrial setting. That said, in Singapore's context, biodegradability confers fewer environmental benefits as waste is recycled or incinerated and not left to biodegrade in landfill.

Irrelevant green image

61 When it comes to the use of irrelevant green images to give the perception of a product being more sustainable than it really is, we did not observe this aspect to be commonplace. 91% of product claims did not feature a green image, 7% of product claims featured an appropriate display of a green image, and 2% of product claims featured an inappropriate display of a green image. An irrelevant green image is identified as images depicting nature such as leaves or trees that are unrelated to the product advertised, for example displaying leaves in the background of an energy saving home appliance – home appliances are not commonly found in that setting and the appliance is not made with wood or paper.

62 We noted that the display of green images for some products we assessed was unwarranted such as the prominent display of flora and fauna on the product site of an antibacterial sanitising spray. In this instance, the green image detracts from the fact that the antibacterial spray does not contain natural ingredients, nor is it eco-friendly.

63 Products in the toys, DIY and hobbies (5%, 8 of 169 products) and marketplace (3%, 9 of 321 products) categories were more prone to misleading with an irrelevant green image. Within the toys, DIY and hobbies category, there were biodegradable disposables with plants printed on the packaging, but the conditions in which the products can break down were not specified. In the marketplace category, there were hand sanitisers displayed against a backdrop of some leaves despite the product having no clear relation to the leaves featured. The green images used in both contexts were irrelevant as the images were unrelated to the product.

64 In general, businesses should consider when it comes to the display of a green image whether the product is made from natural elements, such as a bamboo bedsheet, or if the product is often used in a natural setting such as an image of a hiking backpack in a forest because it is reasonable to hike in the forest.

Recommendations

Business action

Commit to genuine improvements

65 Greenwashing occurs when businesses overstate their environmental credentials but those credentials are contradicted by their actions and poor environmental performance. Reducing greenwashing is fundamentally about holding companies accountable and working to develop a greener global economy. Businesses should commit to making genuine improvements on environmental performance and integrate this commitment into all aspects of their business such as supplier relationships. The implementation involves gathering detailed data, assessing a company's progress in comparison to established targets, and a virtuous review and revision cycle (Power, 2022).

Clean up supply chains

66 Businesses should perform due diligence before entering any partnerships and prioritise partners with lower negative environmental impact. To do this they need to evaluate their supply chains, operations, partners and any laws or regulations that might affect their business and environmental impact. They can gather precise environmental information from their supply chain and work collaboratively to reduce negative environmental impact or distance themselves from environmentally irresponsible suppliers. Businesses can then establish objectives and develop internal guidelines to direct their efforts by incorporating sustainability into their business models (Power, 2022).

Substantiate claims with better data

67 Streamlining supply chains and having detailed supply chain information allows businesses to back up their claims with data such as the specific attributes of their products that result in reduced environmental impact. To boost their credibility, they may seek third-party verification from credible organisations such as the Rainforest Alliance and Energy Star (Edwards, 2023) as they are transparent about their scope and inspections; ensure rigorous enforcement of standards, and adequate complaint and objection procedures (Nemes et al., 2023). However, learning from the FSC example, companies should continue to regularly perform due diligence to ensure the veracity of their claims, even if they have obtained third party certification.

Communicate clearly

68 Businesses should continuously update all relevant stakeholders on their progress, including customers, investors, and partners through their websites and other platforms where sustainability claims are made. Businesses need to be fully transparent and ensure the accuracy of all claims. They should lay out clearly the environmental implications of their products and any environmental claims, instead of relying on complex technical jargon that cannot be easily verified. This will help consumers and regulators distinguish genuine claims from disinformation.

69 The public expects honesty from companies. Therefore, companies should be specific about their targets and timelines when detailing their plans or goals so that consumers can hold them accountable (Edwards, 2023). Consumer confidence in the company's products and brand will gradually increase when companies provide a fair assessment of their environmental efforts, and their limitations, and also display how they are working to reduce their environmental footprint (Power, 2022).

Advocacy action

Hold businesses accountable

70 Consumers, advocates and NGOs have significant power through raising awareness on incidents of greenwashing (Markham et al., 2014). Social media enables NGOs to share greenwashing information easily and accessibly, and this practice creates reputational risks for businesses engaging in greenwashing, acting as a deterrent (Delmas and Burbano, 2011).

Create ecolabelling schemes

71 While there is currently limited regulation targeting greenwashing in Southeast Asia, local NGOs have stepped in to create ecolabelling schemes to help consumers identify genuine, certified green claims. Green Choice Philippines (Philippine Center for Environmental Protection and Sustainable Development, Inc, n.d.) and Singapore Green Labelling Scheme (Singapore Environment Council, n.d.), are examples of ecolabelling schemes in the region. In Singapore, the green labelling scheme comes under the purview of the Singapore Environment Council. To meet certification under the green labelling scheme in Singapore, the product must meet certain standards which will vary depending on product category. As some consumers might be unfamiliar with international ecolabels, the green labelling scheme in Singapore could serve as the de facto ecolabel in Singapore. The green labelling scheme could cast a wider net by certifying more products and getting more businesses on board.

Identify real environmental certifications from third-party organisations

72 In addition to local NGO ecolabelling schemes, consumers can also gain familiarity with other established industry green labelling schemes so that they can easily verify the claims made by an organisation by looking out for established third-party environmental certifications. They provide a neutral viewpoint that can aid customers in validating important environmental and ethical issues, and avoiding greenwashing (Ethy, n.d.).

73 Ecolabels fall into three categories: Environmental, ethical labour, and animal welfare (Shuttleworth, n.d.) These are some of the most adopted international eco-labels:

74 Environment: B Corp, Cradle to Cradle, Carbon Trust Standard, FSC, Rainforest Alliance, and Environmental Working Group (EWG). B Corp focuses on all aspects of sustainability of a product from end to end, Cradle to Cradle certifies that the manufacturing of a product adheres to the principles of circular economy, Carbon Trust Standard pays attention to how businesses reduce their environmental impact, FSC and Rainforest Alliance are concerned with forest management and sustainable farming practices and their ecolabels are typically seen on paper-related products and coffee,

and EWG is concerned with the safety of ingredients for the environment and health, and this ecolabel is typically seen on cosmetics and beauty care products.

75 Animal welfare and animal free: Leaping Bunny focuses on animal welfare and cruelty-free and this ecolabel is usually seen on cosmetics and beauty care products to proclaim that the product has not been tested on animals.

76 Fair trade and ethical labour: Global Organic Textile Standard (GOTS), Fairtrade International, and Bluesign are ecolabels that signify that products, typically textile products, are manufactured ethically (Shuttleworth, n.d.).

Regulatory action

Enforce regulations to combat greenwashing

77 Greenwashing scholars generally agree on the importance of regulation in reducing greenwashing by firms with poor environmental performance (Gatti et al., 2011). Delmas and Burbano (2011) identified lax regulations as a major driver of greenwashing as businesses face negligible legal repercussions. Regulations would make the repercussions for greenwashing more severe, lending additional momentum to advocacy action to hold businesses accountable (Markham et al., 2014). Regulators can introduce regulations that explicitly spell out penalties related to greenwashing infringements, similar to what the UK and US have done (Federal Trade Commission, 2022a; Ungoed-Thomas, 2023).

78 Regulators must also follow up with enforcement to sufficiently disincentivise firms from greenwashing (Delmas and Burbano, 2011). For example, the US Federal Trade Commission (2022b) charged Kohl's, Inc. and Walmart, Inc. for marketing products made with rayon as being made with bamboo manufactured with environmentally friendly processes, which is misleading as processing bamboo into rayon is often a highly pollutive process. Kohl's and Walmart have been ordered to stop such deceptive marketing practices and pay $2.5 million and $3 million respectively in civil penalties (Federal Trade Commission, 2022b). The FTC was able to charge the corporations in 2022 as they had issued warning letters in 2010, which ensured that corporations were aware and informed of the violations and penalties yet had not taken appropriate action (Federal Trade Commission, 2022a). The UK is developing a new Digital Markets, Competition and Consumers Bill which authorises the Competition and Markets Authority to impose fines of up to 10% of global turnover for violations of consumer law, including greenwashing infringements (Ungoed-Thomas, 2023).

Issue guidance to help businesses and consumers understand what constitutes greenwashing

79 Enforcement is required to give teeth to regulations but it is often impeded by ambiguity around what constitutes greenwashing (Markham et al., 2014). Not only does this limit regulators' influence, it also makes it difficult for businesses to understand the requirements to make a legitimate green claim. It can disincentivise sustainable companies from marketing their legitimate green claims (Delmas and Burbano, 2011). Green guides can help reduce some of this ambiguity.

80 The United States Federal Trade Commission (FTC) advised businesses to be truthful in the making of eco-friendly claims about their products. They have also issued guidance for consumers so that they know what to look out for when evaluating green claims (Federal Trade Commission, 2021). The guidance focuses on two areas: 1) How a product is made 2) how to dispose of a product.

81 The FTC has also released a green guide (Federal Trade Commission, 2012a) to advise businesses regarding environmental marketing claims. Specifically, the guide aims to help businesses understand how consumers are expected to infer green claims and how businesses can substantiate their claims to avoid misleading consumers (Federal Trade Commission, n.d.). Implementing such a guide in Singapore would set expectations around green marketing and help firms communicate their green credentials more responsibly. Clear guidance and definitions also allow regulators to act against greenwashing more effectively. In the US, issuing notices prior to penalties is made part of the legal process (Federal Trade Commission, 2022a), ensuring businesses have the opportunity to rectify the situation before they are penalised for non-compliance. Not remedying the situation after being put on notice demonstrates that a company is knowingly breaking the law, and thus subject to penalties.

82 Given the glut of ecolabels that exists, consumers cannot keep track of which ecolabel is useful and applicable to the product that they are purchasing. Recognising this, the United States Environmental Protection Agency (EPA) has come up with a recommendation factsheet on ecolabel for purchases made by governmental departments (United States Environmental Protection Agency, 2022). Such a recommendation factsheet might be useful in the Singapore context as well. The recommendation factsheet could include common ecolabels by product categories.

Conclusion

83 Our study elucidates the prevalence of greenwashing across websites frequently visited by Singapore residents, the forms of greenwashing that are most widespread, and the website categories that have the highest occurrence of greenwashing.

84 We found that 51% of products across 100 websites feature vague, unsubstantiated environmental claims. Our finding mirrors that of the sweep conducted by the European Commission (2021) which found that more than 50% of green claims provided insufficient supporting information, and the sweep by the International Consumer Protection Enforcement Network (ICPEN) which found that 40% of websites surveyed featured vague environmental claims (Competition and Markets Authority, 2021a). We noted that websites in these categories have the highest incidence of unsubstantiated environmental claims: electronics and physical media (67%, 29 of 43 products), books (61%, 14 of 23 products), and marketplace (61%, 196 of 321 products).

85 We also found that 14% of products across 100 websites feature technical environmental jargon which is difficult for the layperson to understand, 3% of products feature ecolabels that were not verified by a third-party organisation, and 2% of products across 100 websites feature the display of an irrelevant green image to make a product appear more environmentally friendly than it is.

86 Businesses, advocates, and regulators can all play their part in combating greenwashing. Businesses should make their business more sustainable by cleaning up their operations and backing up their environmental claims with data. Advocates can demand greater accountability and transparency from businesses, and consumers could learn to identify real environmental certifications from third-party organisations. Last but not least, regulators could issue guidance to help businesses and consumers understand what constitutes greenwashing, enforce regulations to combat greenwashing and set a national standard for environmentally friendly products.

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