

Review Article

Sustainability Indicator: An Initial Parameter for Convenience Product

Bulan Prabawani^{1*}, Sudharto Prawata Hadi²

¹ Department of Business Administration Social and Political Sciences, Universitas Diponegoro, Jl. Prof. Soedarto, SH, Kampus Undip Tembalang, Semarang, Indonesia 50275

² Department of Environmental Studies, Universitas Diponegoro, Jl. Prof. Soedarto, SH, Kampus Undip Tembalang, Semarang, Indonesia 50275

*Corresponding author, e-mail: bulan@live.undip.ac.id



Abstract

The environmental awareness of consumer has been growing along with the increase of knowledge, education and access to information. The demand from the government, media, and community has also increasingly escalated the pressure to companies to produce environmentally friendly products. This eventually encourages greenwashing practices extensively which are unfavorable to consumers because the practice is frequently included as marketing scam. In addition, the existing environmentally-based certification is primarily oriented to the planet and profit aspects of the triple bottom lines and tends to ignore the community. Hence, this study reviews a variety of green-based certifications or sustainability indicators which has existed particularly in Indonesia and their potential for the development of convenience products, products which are consumed in high frequency since they are cheap and consumed daily. This research involves explorative analysis using open secondary data from public journalism, media releases, academic references, and official webpages. Furthermore, this research describes current green-based certifications and presents the initial concept of a sustainability indicator which involved the planet and humans concurrently as well as adopt Proper label as product labelling.

Keywords: Sustainability indicator; people; planet; convenience product

1. Introduction

Consumer awareness to make green concern as an element of product and service assessment is growing profoundly particularly Gen Y (Ogiemwonyi, 2022), of which has been predicted since two decades ago, in line with government trade deregulation due to globalization pressure and the increasing of environmental damage and health problems (Raynolds et al., 2007). Studies prove that environmentally friendly concern and value significantly affects purchase intention (Cheung & To, 2019; Paul et al., 2016). This particularly occurs in the community who have broad access to information, not limited to higher education, either through formal or informal education, also has experience and network. Young consumers are also identified as having higher green knowledge than older consumers due to their higher awareness of environmental issues (Urbański & Ul Haque, 2020). Meanwhile, the flow of industrialization grows immensely stronger, particularly for the newly industrialized countries in 2020 such as Indonesia, Mexico, Brazil, and Malaysia which have been proven to simultaneously boost high CO₂ emissions and energy use (Rahman et al., 2021), water, air pollution, waste generation,

environmental damage that triggers environmental disasters such as floods, droughts and, landslides. As a result, this consumer awareness has contributed to the practice of greenwashing, i.e. a form of marketing camouflage in order to be assumed as green or environmentally friendly products. Environmental cost and tight competition significantly influence greenwashing practices. This is evident by 2,024 firms in various industries in the US in a study conducted from 2005 to 2015. There was a tendency that the more the companies damaged the environment that is in line with the environmental cost, the more they were reactive in claiming to be green businesses. (Arouri et al., 2021).

Greenwashing gives the impression to provide added value for the company, but it is harmful to consumers whose environmental concerns; since “the green product” is a marketing scam. Products which are claimed to be “green” usually offer higher prices with small benefits (Tennery, 2009) and are riskier. Greenwashing is carried out in the form of illustrations and the selection of words and themes related to environmental themes, especially nature. Greenwashing products frequently use green colors, natural images, and claim to be green products without showing adequate evidence (Champagne, 2020). Based on a study conducted in North America, 98% of 2219 green products were found to be environmentally unfriendly because of some reasons, such as they could not provide evidence as green products, were irrelevant, and even put false labels on the products (Durif et al., 2010).

Consumer awareness of sustainable products is getting higher, but producers implement marketing camouflage by greenwashing to raise consumer interest, while there are no guidelines for marking sustainable products, especially for convenience goods that are consumed daily in high frequency. A review on previous research using Google Scholar shows that the concept of sustainability indicator has been discussed by more than 2 million previous studies, both as a single concept and separately, namely sustainability and indicators both in Emerald, Jstor, Proquest, and especially Sciencedirect. In the last 5 years, there are 175 thousand references and 19.4 thousand references from reviewed journals. This shows that sustainability indicators have been widely studied in various perspectives and uses in previous studies. Sciencedirect has presented 335,527 research and reviewed papers, of which the 50 most relevant journals out of 6,839 reviewed papers limited to the last 2 years, were found primarily to review sustainability indicators in the agriculture/forestry, bio products, urban management, construction/building, and waste sectors. However, references that examine sustainability indicators for convenience products are still limited, while consumers need definite identifiers to easily and validly recognize green products, particularly for consumer goods which are consumed in high frequency and are daily necessities whose direct impact on the consumers' health and safety. One of the product markers is certification. In addition, the existing certifications merely concern on environmental or planetary aspects and do not yet include social concerns (i.e. health, welfare, safety) or people that must also be significantly considered in manufacturing industries. so business often have to use double or triple certification (Jiménez-Pulido et al., 2022; Raynolds et al., 2007). Hence, it is necessary to formulate an initial draft indicator for the sustainability indicator of convenience products. Free competition has encouraged the smaller role of government then requires higher sector initiatives. This draft will include elements of the triple bottom lines, planet and people, with a special character for Indonesian consumers.

2. Methods

This is a document study which explains existing green certifications and explores the potential for the convenience product certification in Indonesia. The data were obtained from webpages of certification institution, convenience product manufacturers, consumer foundations, and non-government organizations in green concern. In addition, it also involved academic journals i.e. Sciencedirect, media coverage, and citizen journalism related to green certification, triple bottom lines, and manufacturing industries. The data was not limited to a certain time span, but was selected according to its relevance to this research related to product certification, green concerns, green products, consumer good, and consumer behavior. Media coverage is increasingly being used in the

analysis of social research (Mügge, 2012) especially issues that require public support, including greenwashing. The use of this data source is relevant to the public's attention to the topic being reported. The higher the public attention, the higher the media coverage related to the issue. (Woolley, 2000). Likewise, citizen journalism, one of which is social media, is relevant to be used as a data source, for example in flood risk management, not only in the dissemination process but also in data collection (Smith et al., 2017).

The meta-analysis was carried out through a Google Scholar search on April 12, 2022, as the most flexible, easy, and broad indexation, and not limited in time. The search was continued through Scencedirect as the scientific database from Elsevier that present the most sustainability indicator keywords in various sectors, in which convenience good was an area that was not sufficiently explored in relation to sustainability indicators. A google scholar search found 2,020,000 studies or 73,700 reviewed articles of which 10,200 articles were published in the last 2 years. Meanwhile, Elsevier as the publisher that publishes the most sustainability indicator studies has published 399,377 papers, of which 34,988 are reviewed articles, and 6,839 were published in 2021 and 2022. The data are, in the form of news, reviews, and videos are interpreted and synthesized to gain new ideas (Collis & Hussey, 2021) which is indicators for sustainability indicator. It applied discourse analysis in which data from variety of sources being reduced into the most relevant documents by detextualizing. Then the data were categorized and arranged into the triple bottom line dimension and in detail into the indicators of each dimension.

3. Result and Discussion

Literature studies show that of 19.4 thousand previous reviewed journals in the last 5 years based on the most 100 relevant journals via Google Scholar, it was found that 54% of sustainability indicator topics were published in Elsevier, 12% on MDPI, 4% on Emerald, and the rest 30% in various journals published in Springer, IOP series, Proquest, Tandfonline and others. More specifically, through the Scencedirect meta-analysis with the keywords sustainability indicator in 2021 and 2022, as amount of 6,389 papers were found in the reviewed journal. In the 50 most relevant journals in the last 2 years, sustainability indicators were studied in the agriculture/forestry sector 7 papers, bio products 6 papers, urban management 5 papers, construction/building 5 papers, waste 5 papers, electric 2 papers, food 2 papers, and 1 paper each in the fields of energy, fishery, fragrance, mining, livestock, technology. The rest of the existing papers examine sustainability indicators in general, including the concept, the update scopes such as circular economy, supply chain, and policy. Meanwhile, none of the papers found on Google Scholar examines sustainability indicators in relation to Indonesia. If it is mentioned in the paper, it is only in relation to being one of the sample countries in relation to the sustainable society index (Gallego-Álvarez et al., 2015) and is mentioned as the largest producer of coal-fired capacity in the world (Farfan & Breyer, 2017). Hence, it is important to study sustainability indicators considering that Indonesia is a country with the fourth highest population in the world, so it is linear with the number of products consumed daily, that is convenience goods.

In the perspective of reasoned action theory, purchasing decisions would be influenced by environmental knowledge and concern, as well as the consumer image towards the brand (Onurlubaş, 2019; Qomariah & Prabawani, 2020). In contrast to the previous phenomenon that consumers in buying/consuming products due to the visualization factor, consumer behavior in green products is influenced by consumer knowledge and the subjective norms, which then influence the consumer attitudes and desires to or not to buy a product (Bettman et al., 2006). The subjective norms here include environmental concerns. Consumer knowledge is information and facts that is obtained by the consumers from various information media. Subjective norms are social perceptions that force someone to do or not to take an action. In this case, there are elements of right or wrong and appropriate or inappropriate based on certain standards of behavior in a social structure. It does not only occur in Indonesia, but also in India (Paul et al., 2016), Malaysia (Mohd Suki, 2016), particularly in developed

countries with more adequate access to information and great public pressure (Champagne, 2020). Products that are categorized as environmentally friendly include products that do not pollute the environment, have less waste, use fewer natural resources, apply re-used and recycled materials (Onurlubaş, 2019), and have good environmental ethics such as animal cruelty free, no child labor (Chatterjee et al., 2021), and possess social responsibility so that companies need to inform and advertise the CSR activities (Pradhan, 2018) to ensure sufficient knowledge of their potential market. There is a trend of increasing consumer awareness of the keywords of “animal welfare”, “fake fur” “cruelty free”, “vegan fur/leather” (Choi & Lee, 2021). Consumers in India have a high preference for products that have no animal cruelty certificates for fashion products and no child labor for soap products (Chatterjee et al., 2021). In addition to environmental concerns, there are some other factors such as service quality, consumer social responsibility, and green trust which affect the preferences of green consumers (Ahmad & Zhang, 2020). Social factors in which acknowledged as subjective norms in the theory of reasoned action (Bettman et al., 2006) dominantly influence consumer decisions to buy green products than emotional, functional, conditional, and epistemic values factors. In this case, consumers buy green products as they demand for being accepted and judged positively by their peer groups (Mohd Suki, 2016). This proves that social pressure is important for encouraging green attitude and behavior. Hence, consumers spend money for products not only because of the function or benefits, but also the value attached to the product, including green value.

Industries especially in developing countries are competing to get certification from the third parties. For them, certification is a form of acknowledgment of organizational attributes and the product quality so that it can become a strong capital for the company’s reputation based on the perspective of stakeholders, specifically consumers, investors, government, and the media (Lamin & Livanis, 2020). Certification has the potential to increase the competitiveness of any product/company. There are several types of certifications, including professional and product certification. Professional certification is an acknowledgment attached to an individual or institution for the competence’s possession granted by an accredited certification body. Product certification is an acknowledgment given to top products, including the fulfillment of production process qualifications, final products, to post-production handling. Certification is carried out through a series of documentation processes, training, audits, testing, and inspections.

A study in the Europe reveals that various types of non-label products are more elastic to external shocks i.e., price increases, and in contrast, green label and/or certified products are more stable and become a key consideration for consumers in purchasing products, especially for consumer goods. Thus, the decision to encourage the manufacturing of environmentally friendly products needs to be accompanied by adequate certification as a product marker, especially with the emergence of the circular economy trend. (Morone et al., 2021). Certification has also been proven to increase consumer willingness to pay or WTP and even higher price (Morone et al., 2021; Pretner et al., 2021) so that product competition is not solely based on price competition and there is no high price volatility. However, it should be noted that the WTP for re-cycled and/or re-used products is lower than conventional products due to the assumption that these products are “used” products or waste with low quality, has potential for contamination, less durable, then more efficient in the production process. More efficient here means that the products should have lower cost and followed by lower price. Additional information is needed to eliminate the disinformation. Certification is considered by consumers as a form of product quality validation by accredited third parties so that it is assumed to be more reliable. These are important to reduce negative mental associations and increase public confidence towards the products. (Pretner et al., 2021).

Therefore, a certification label is significantly needed as one of credence attributes in addition to product traceability (Ubilava & Foster, 2009). Certification is the determination of a label or a marker from a professional organization on any product or service implying that the product or the service is able to meet a set of standards when it is produced or consumed. Certification is needed, such as in relation to export requirements as part of compliance (Ticona & Frota, 2008). In addition, certification is

given by an authorized institution that have expertise, technical capabilities, and adequate facilities to carry out assessments, monitoring, as well as giving and removing labels on products (Ticona & Frota, 2008). In relation to the circular economy, certification is needed to ensure that products are safe for consumption, do not threaten health, and meet product quality standards, because in circular economy, waste would be treated as new raw material.

Many green-based certifications which exist, particularly in Indonesia, are still limited to design certificates and building materials such as Edge Indonesia issued by Green Building Council Indonesia (Edge, 2021), Greenship by Green Building Council Indonesia (GBCI, 2021), and Green Label Indonesia as a certificate of building materials by IAPMO Indonesia (IAPMO, 2021), and LEED (Leadership in Energy and Environmental Design). In addition, there is a Green Industry Certification and a Green Certificate which are also implemented in building industry. The parameters used to assess green building/design in general include energy efficiency and conservation, stewardship of material resources & cycle, indoor health and comfort, CO₂ emission reduction, appropriate site development, building environmental management, water conservation, and also sensitivity to resource impacts. The indicators developed for green buildings have been actively developed and are comprehensive, for example the Fourteen Green Building provides certification for indoor environment quality which is only one element of a building. In the certification, there are assessment components of temperature and room visualization. In detail, the room temperature is measured using parameters of humidity, air circulation, air circulation speed, to lighting that can affect the room temperature. This certification is usually applied to offices and hotels. (Wei et al., 2020). This certification is not merely a measure of building quality, but also a medium to create consumer comfort.

In Indonesia, the Ministry of Environment and Forestry has established Center for Environmental and Forestry Standardization (local term: Pusat Standardisasi Lingkungan dan Kehutanan – PSLK) that the duties ranging from formulating to providing technical guidance and evaluation of the application and the compliance with environmental and forestry standards. PSLK has 19 Indonesian National Standards (local term: SNI) for forest management, 7 SNIs for seeds, 8 SNIs for nurseries, 18 SNIs for environmental management, 122 SNIs for wood forest products, 31 SNIs for non-timber forest products, 18 SNIs for eco-labeling, 12 SNIs for community service standards, 4 SNIs for standard X, and 30 SNIs for environmental quality (Kementerian Lingkungan Hidup dan Kehutanan, 2021a). However, all of these national standards are for forestry products, not for convenience goods. In addition, the parameters are almost entirely related to the natural sustainability dimension, except for community service standards. For example, the parameters of SNI for Forest Management use indicators of technical specifications, sensing forest cover images, soil and water conservation, and biodiversity, as well as carbon stocks. Likewise, the current type of eco-label is still partial, such as, plastic types are only categorized as biodegradable, not using PVC, recyclable, compostable, extended lifecycle, environmentally friendly color, and waste reduction are categorized as environmentally friendly (Kementerian Lingkungan Hidup dan Kehutanan, 2021b). Ecolabels embedded in various products and provided by various government agencies are also relatively similar, from a planet dimension perspective. This fact shows that parameters for certification are still very simple and far from the ideal sustainable meter which should also involves people dimension as a single entity in the Elkington's triple bottom line of sustainable development (Formentini & Taticchi, 2016).

In the US, there is a sustainable business certification regarding consumable products issued by the USDA (The United States Department of Agriculture) which provides an organic label for food. The criteria used are soil quality, animal raising practices, pest and weed control, and use of additives (US Department of Agriculture, 2021). The department develops guidelines, policies, labeling methods that are oriented towards consumer health and safety using web-based application to ensure the transparency and credibility of certification management. The department collaborates with private parties, shares databases, and develops attributes so that they are able to meet market needs. There is also MSC (Marine Stewardship Council) which supplies certified sustainable seafood to ensure seafood traceability, to understand where seafood comes from, and to acknowledge how seafood was caught

(MSC, 2021) based on some indicators including consumer information, weight indication, omega-3 and allergen labeling. The fisheries ecolabel provided by the MSC has the principles of sustainable fish stocks, reduction of environmental impacts, and effective management which are divided into 28 assessment indicators with a minimum score of 80. (Directorate of Fish Resource Management, 2021). In summary, here are a number of other product certifications in a number of countries and their scope.

Table 1. Green certification in developed countries

Country/Region	Program Name	Organization	Description
Australia	Good Environmental Choice Australia Ecolabel	GECA	GECA is a non-profit organization that helps individuals and organizations to create, buy and do better for people and the planet. GECA currently has more than 25 standards based on life cycle thinking from furniture and paint products to steel and cement, personal care products and cleaning services, and more. All GECA standards include comprehensive sustainability criteria relating to the environment, human health, social concerns, and fitness for purpose. (https://geca.eco/)
Russia	Vitality Leaf	Ecological Union	Ecological Union is one of the leading Russian non-commercial organizations in environmental protection. The mission is to promote the development of a green economy to ensure a high quality of life for people and maintain a healthy environment for future generations. (https://www.ecolabelindex.com/ecolabel/vitality-leaf)
Sweden	TCO Certified	TCO Development	TCO Certified is the world-leading sustainability certification for IT products. Criteria in TCO Certified include hazardous substances, circularity, socially responsible manufacturing, environmentally responsible manufacturing, and more. (https://tcocertified.com/)
United States	Green Seal	Green Seal Inc.	For more than 30 years, Green Seal provides rigorous standards for health, sustainability and product performance. Green Seal helps policy makers, businesses and consumers to make safer, greener choices with confidence and create spaces where people can thrive. (https://greenseal.org/splash/)

By considering to the sustainable criteria used in the existing building, forestry and consumable industries, it can be seen that the parameters used still only emphasize on the planet and, obviously, the profit of the triple bottom lines. Moreover, only a small proportion of consumable products are oriented to people dimension in which there is an obligation for information on product and allergen content. Therefore, it is necessary to enrich the parameters in sustainable values which involve product stewardship, i.e. integrating stakeholders' perspectives into business processes (Hart & Milstein, 2003). This is expected to be able to increase reputation and legitimacy of the industry considering the increasing demands of corporate governance.

Certifications that do not only have a concern on planet but also on people are limited, including Fairtrade Certification and Rainforest Alliance. Fairtrade labels products by monitoring the production process to the sales, until the products reach the end consumer. It pays attention to workers' rights, fair labor practices, and responsible land management so that it is not only prioritize consumer safety and health, but also community development, business partners, and fair prices which covers the

interest of the potential customer. Fairtrade, that uses a quantitative approach and product life cycle in its assessment, does not only consider aspects of the natural environment such as carbon emissions, material consumption, land use, but also considers social dimension, they are consumers and the supply chain, hence, the analysis is more comprehensive. Fairtrade sets a priority scale in different sectors so that it is more specific to the character of a particular industry. (Acquaye et al., 2015). As the result, Fairtrade certified packaging was not significant in increasing sales, even after tasted the product, the consumers chose conventional products. However, when the consumers were given more comprehensive information regarding the substance of Fairtrade certification, they chose products labeled with environmental concerns and would like to pay higher for the green products compare to the conventional ones. (Lange et al., 2015). However, a certification that focus on the both natural environment and also on the social environment, does not always show a better natural environment performance than a certification that is purely oriented to the natural environment. A study conducted by comparing Rainforest Alliance (RA), non-RA, and organic certified agricultural forests showed that the biodiversity of insects and birds was highest in the organic farming, followed by non-RA farming, and then the RA. RA here certifies forest-based products that not only focus on biodiversity, eco-system protection, wildlife conservation, but also on fair treatment and good working conditions. (Bellamy et al., 2016). The advantages of organic certification in this research can be explained by organic farming focuses on the priority of less chemical-intensive farming to explain why the biodiversity was higher (Raynolds et al., 2007).

There have been abundant parameters for the planet dimension in green products but limited for the social dimension. This study then adopted and adjusted the prior parameters for both that included in planet and people dimensions to fulfill the concept of sustainability certificate which then would be called as sustainability indicator. The parameters are expected to concern with comprehensive dimension for consumer products which typically produce in high volume thus has low cost, and competitive in a market as a basis consumer trust into a product. The best certification agency in involving social elements is Fairtrade Certification particularly in the coffee industry (Raynolds et al., 2007), on the other hand Organic and green building certification such as Edge, GBCI, LEED, and also the existing certification provided by Ministry of Environment and Forestry for the best in ecological standards.

In order to meet the balance of elements of the triple bottom line, it is also necessary to study the profit or economic dimensions. In the energy sector, sustainability encourages efficiency, investment, technology development, creates value and competitiveness, encourages job creation and patents (Gunnarsdottir et al., 2022). In relation to life-cycle assessment (LCA) in the same sector, there are the same economic benefits where sustainability action contributes to reducing costs and increasing revenue, job creation (Afshari et al., 2022). More broadly, sustainability contributes to Gross Domestic Product (GDP) (Gunnarsdottir et al., 2022), job creation, poverty reduction, and conservation of natural resources, improving the quality of regulations and labor and people's living standards in the tourism sector (Lee et al., 2021). The combination of parameters from various prior studies that enable to be developed in consumer goods as the following:

Table 2. Parameters for business sustainability

Planet	People	Profit
- sensitivity to resource impacts	- fair labor practices	- efficiency
- water efficiency and conservation	- transparency	- value creation
- energy efficiency and conservation	- supply chain partnership	- competitiveness
- stewardship of material resources & cycle	- community development	- premium price
- CO ₂ emission reduction	- civil society	- reputation
- solid and liquid waste management	- social innovation	- new investment
	- social responsibility	- new technology
		- job creation

In the planet dimension, the parameters of sensitivity to resource impacts, water efficiency and conservation, energy efficiency and conservation, and stewardship of material resources and cycle are in relate to resource efficiency, while CO₂ emission reduction and solid and liquid waste management are in relate to waste management and reduction. Material efficiency is needed to minimize and reduce resource exploration or exploitation, to reuse of re-cycled materials, to reduce waste, and in turn as reduction of costs. Waste management and reduction is needed so that there would be a minimum burden and environmental impact from the company's externalities.

In the people dimension, the parameters of fair labor practices and transparency are in relate to the company's internal stakeholders, while supply chain partnership, community development, civil society, social innovation, and social responsibility would relate to the wider parties, they are the external stakeholders. Hence, company should not only pay attention to the direct parties in the business operation but also to the indirect parties that offer long term benefits.

In the profit dimension, the parameters are able to contribute to the company's micro level and macro level at the regional and even global level. In companies, efficiency directly reduces costs and prices. In addition, along with the improvement of the company's reputation, sustainability provides benefits in the form of value creation which in turn affects reputation and competitiveness, so that the company has a price premium or price flexibility, gains new investment and technology and job creation.

The parameters above form a strong institution and industry legitimacy (Lamin & Livanis, 2020). Strong institution is an important platform to achieve the SDGs as strong institution can apply the rule of law, encourage economic growth while still considering basic human needs equitably (UNA-UK, 2016). This good institution is shown by the implementation of good corporate governance where the industry concerns with the interests of stakeholders, not only limited with the shareholders. In this case, the industry is expected to operate in a transparent, accountable, responsible, independent, and fair ways in order to realize corporate sustainability.

In contrast to recent certifications which simply put a label in the form of a logo on the product or packaging, sustainability indicator is offered in the form of colors adopted from Proper (Business Performance Rating Program in Environmental Management) in Indonesia. It is admittedly difficult to fulfill all parameters at once. Therefore, it is expected that the sustainability indicator is in the form of a label for consumers marked in black for 0 – 20%, red for >20 – 40%, blue for >40 – 60%, green for >60 – 80%, and gold for 80 – 100% sustainable products.

4. Conclusions

This study finds that there have been various certifications to ensure product quality and is also oriented towards green certification to verify product concern towards environment. A validation is essential considering that consumer knowledge and awareness of product consumption and its impact on the natural and social environment is getting higher. Consumers are willing to spend more money to fulfill their commitments to the environment while greenwashing practice is getting higher. Previous studies reveal that the certification is applied mainly for building and design, product-based forestry, and consumable products, moreover, the parameters are partial dimension of the triple bottom line, while the existing accredited certification institution is actually capable of being a good representative of the certification body. Therefore, it is necessary to combine and modify existing parameters adopted from certification bodies so that are relevant and comprehensive for consumer products that are directly consumed by end-customers in high frequency. The label is essential to increase consumer's confidence towards the product and increase their willingness to pay, reduce price sensitivity, and raise higher demand. This is important in line with the increase in the public economy and education levels, as well as people access to information, especially in Indonesia. Therefore, this study presents the initial parameters for the sustainability indicator by involving elements related to planet issues including resources, energy and water efficiency, emission reduction, and waste management, and people for stakeholders' concerns which includes labor, partner, and community relations. The profit dimension

involves benefits of applying sustainability, they are cost and value-based benefits, and job creation. Future research is expected to use primary data and review the feasibility of the parameters to be implemented in other specific industries.

Acknowledgement

We would like to thank Faculty of Social and Political Sciences, Universitas Diponegoro for the research funding No. 1715/UN7.5.7.2/PG/2021 and the Indonesian Ministry of Environment and Forestry for the initial data.

References

- Acquaye, A. A., Yamoah, F. A., & Feng, K. 2015. An integrated environmental and fairtrade labelling scheme for product supply chains. *International Journal of Production Economics*, 164, 472–483.
- Afshari, H., Agnihotri, S., Searcy, C., & Jaber, M. Y. 2022. Social sustainability indicators: A comprehensive review with application in the energy sector. *Sustainable Production and Consumption*, 31, 263–286.
- Ahmad, W., & Zhang, Q. 2020. Green purchase intention: Effects of electronic service quality and customer green psychology. *Journal of Cleaner Production*, 267(2020), 122053.
- Arouri, M., El Ghoul, S., & Gomes, M. (2021). Greenwashing and product market competition. *Finance Research Letters*, 42(January).
- Bellamy, A. S., Svensson, O., van den Brink, P. J., & Tedengren, M. (2016). What is in a label? Rainforest-Alliance certified banana production versus non-certified conventional banana production. *Global Ecology and Conservation*, 7, 39–48.
- Bettman, J. R., Luce, M. F., & Payne, J. W. 2006. Constructive Consumer Choice Processes. In S. Lichtenstein & P. Slovic (Eds.), *The Construction of Preference* (pp. 323–341). Cambridge University Press.
- Champagne, L. 2020. Exploring Greenwashing on Crowdfunding Platforms (Issue May). EDHEC Business School.
- Chatterjee, S., Sreen, N., Rana, J., Dhir, A., & Sadarangani, P. H. 2021. Impact of ethical certifications and product involvement on consumers decision to purchase ethical products at price premiums in an emerging market context. *International Review on Public and Nonprofit Marketing*, 0123456789.
- Cheung, M. F. Y., & To, W. M. 2019. An extended model of value-attitude-behavior to explain Chinese consumers' green purchase behavior. *Journal of Retailing and Consumer Services*, 50(February), 145–153.
- Choi, Y. H., & Lee, K. H. 2021. Ethical consumers' awareness of vegan materials: Focused on fake fur and fake leather. *Sustainability (Switzerland)*, 13(1), 1–16.
- Collis, J., & Hussey, R. 2021. *Business Research: a practical guide for students*. Directorate of Fish Resource Management. 2021. Ecolabelling. KKP.
- Durif, F., Boivin, C., & Julien, C. 2010. In search of a green product definition. *Innovative Marketing*, 6(1), 25–33.
- Edge. 2021. EDGE in Indonesia. Edge Buildings.
- Farfan, J., & Breyer, C. 2017. Structural changes of global power generation capacity towards sustainability and the risk of stranded investments supported by a sustainability indicator. *Journal of Cleaner Production*, 141, 370–384.
- Formentini, M., & Taticchi, P. 2016. Corporate sustainability approaches and governance mechanisms in sustainable supply chain management. *Journal of Cleaner Production*, 112(2016), 1920–1933.
- Gallego-Álvarez, I., Galindo-Villardón, M. P., & Rodríguez-Rosa, M. 2015. Evolution of sustainability indicator worldwide: A study from the economic perspective based on the X-STATICO method. *Ecological Indicators*, 58, 139–151.
- GBCI. 2021. Green Building Council Indonesia. Green Building Council Indonesia.
- Gunnarsdottir, I., Davidsdottir, B., Worrell, E., & Sigurgeirdottir, S. 2022. Indicators for sustainable energy development: An Icelandic case study. *Energy Policy*, 164(1), 112926.
- Hart, S. L., & Milstein, M. B. 2003. Creating sustainable value. *Academy of Management Executive*, 17(2), 56–67.

- IAPMO. 2021. Sertifikasi green label indonesia bekerjasama dengan green product council indonesia. IAPMO Indonesia.
- Jiménez-Pulido, C., Jiménez-Rivero, A., & García-Navarro, J. 2022. Improved sustainability certification systems to respond to building renovation challenges based on a literature review. *Journal of Building Engineering*, 45(3).
- Kementerian Lingkungan Hidup dan Kehutanan. 2021. Daftar Produk Ekolabel Swadepklarasi Indonesia (Ekolabel Tipe II) (pp. 1–6).
- Kementerian Lingkungan Hidup dan Kehutanan. 2021. Produk. Pusat Standardisasi Lingkungan Dan Kehutanan.
- Lamin, A., & Livanis, G. 2020. Do third-party certifications work in a weak institutional environment? *Journal of International Management*, February, 100742.
- Lange, C., Combris, P., Issanchou, S., & Schlich, P. 2015. Impact of information and in-home sensory exposure on liking and willingness to pay: The beginning of Fairtrade labeled coffee in France. *Food Research International*, 76, 317–324.
- Lee, T. H., Jan, F. H., & Liu, J. T. 2021. Developing an indicator framework for assessing sustainable tourism: Evidence from a Taiwan ecological resort. *Ecological Indicators*, 125, 107596.
- Mohd Suki, N. 2016. Consumer environmental concern and green product purchase in Malaysia: structural effects of consumption values. *Journal of Cleaner Production*, 132, 204–214.
- Morone, P., Caferra, R., D'Adamo, I., Falcone, P. M., Imbert, E., & Morone, A. 2021. Consumer willingness to pay for bio-based products: Do certifications matter? *International Journal of Production Economics*, 240(3), 108248.
- MSC. 2021. Marine Stewardship Council. msc.org
- Mügge, L. M. 2012. Ethnography's contribution to newspaper analysis: claims-making revisited (CES Papers - Open Forum).
- Ogiemwonyi, O. 2022. Factors influencing generation Y green behaviour on green products in Nigeria: An application of theory of planned behaviour. *Environmental and Sustainability Indicators*, 13(3), 100164.
- Onurlubaş, E. 2019. The mediating role of environmental attitude on the impact of environmental concern on green product purchasing intention. *EMAJ: Emerging Markets Journal*, 8(2), 5–18.
- J., Modi, A., & Patel, J. 2016. Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134.
- Pradhan, S. 2018. Role of CSR in the consumer decision making process - The case of India. *Social Responsibility Journal*, 14(1), 138–158.
- Pretner, G., Darnall, N., Testa, F., & Iraldo, F. 2021. Are consumers willing to pay for circular products? The role of recycled and second-hand attributes, messaging, and third-party certification. *Resources, Conservation and Recycling*, 175(3), 105888.
- Qomariah, A., & Prabawani, B. 2020. The effects of environmental knowledge, environmental concern, and green brand image on green purchase intention with perceived product price and quality as the moderating variable. *IOP Conference Series: Earth and Environmental Science*, 448(1), 1–10.
- Rahman, M. M., Nepal, R., & Alam, K. 2021. Impacts of human capital, exports, economic growth and energy consumption on CO₂ emissions of a cross-sectionally dependent panel: Evidence from the newly industrialized countries (NICs). *Environmental Science and Policy*, 121(3), 24–36.
- Raynolds, L. T., Murray, D., & Heller, A. 2007. Regulating sustainability in the coffee sector: A comparative analysis of third-party environmental and social certification initiatives. *Agriculture and Human Values*, 24(2), 147–163.
- Smith, L., Liang, Q., James, P., & Lin, W. 2017. Assessing the utility of social media as a data source for flood risk management using a real-time modelling framework. *Journal of Flood Risk Management*, 10(3), 370–380.
- Tennery, A. 2009. The four biggest 'green' marketing scams. *NBC News*.
- Ticona, J. M., & Frota, M. N. 2008. Assessment of the economic impact of product certification: A significant area of application of measurement. *Measurement: Journal of the International Measurement Confederation*, 41(1), 88–104.
- Ubilava, D., & Foster, K. 2009. Quality certification vs. product traceability: Consumer preferences for informational attributes of pork in Georgia. *Food Policy*, 34(3), 305–310.
- UNA-UK. 2016. Building effective institutions. *SDG's the People Agenda*.

- Urbański, M., & Ul Haque, A. 2020. Are you environmentally conscious enough to differentiate between greenwashed and sustainable items? A global consumers perspective. *Sustainability (Switzerland)*, 12(5), 1–25.
- US Department of Agriculture. 2021. USDA. [usda.gov](https://www.usda.gov)
- Wei, W., Wargocki, P., Zirngibl, J., Bendžalová, J., & Mandin, C. 2020. Review of parameters used to assess the quality of the indoor environment in Green Building certification schemes for offices and hotels. *Energy and Buildings*, 209, 109683.
- Woolley, J. T. 2000. Using media-based data in studies of politics. *American Journal of Political Science*, 44(1), 156.