



## What is Environmental Corporate Social Responsibility (ECSR) and why is it important?

Sayam Aroonsrimorakot<sup>1,2\*</sup> and Meena Laiphrakpam<sup>2</sup>

<sup>1</sup> Interdisciplinary network of the Royal Institute of Thailand  
Center for Research Assessment and Certification for Environmental Management,  
Faculty of Environment and Resource Studies,  
Mahidol University, Salaya, Thailand

---

### Abstract

Nowadays there is a growing concern about climate change and global warming. As a response to solving this challenging issue in the industrial sector, the concept of Environmental corporate social responsibility (ECSR) has increasingly gained significance in the corporate world. Implementation of ECSR activities aims to address the threat of climate change by reducing the negative impact on the environment from business operation processes. ECSR is one dimension of corporate social responsibility (CSR), related to corporate governance, sustainability, and performance having aims to reduce the hazardous impact on the environment in an organization's production process to achieve long-term environmental well-being. This article has the objective to answer these two questions: 1. What is environmental corporate social responsibility (ECSR); and 2. Why ECSR is important? The article used state-of-the-art literature review methods, relevant to the stated objective, and searched by typing keywords such as, "Environmental Corporate Social Responsibility" and "Importance of Environmental Corporate Social Responsibility" from relevant search engines available online. The result found ECSR to be a multi-dimensional concept as it is related to corporate governance, and sustainability, and helps to increase the substantial capacity of a company's competitiveness and performance. ECSR has gained importance increasingly among scholars, policymakers, and practitioners as the implementation of ECSR activities successfully leads to sustainable development. The article concluded that the adoption of ECSR in corporate management is very essential as a strategy to solve environmental problems while strengthening a green ecology for the overall well-being of the economy and society.

**Keywords:** environmental corporate social responsibility (ECSR); corporate social responsibility (CSR); corporate management; environmental well-being; sustainable development

**Article history:** Received 31 March 2023, Revised 05 April 2023, Accepted 22 June 2023

---

### 1. Introduction

In the last few decades corporate social responsibility (CSR) has been gaining popularity and is widespread among industrial experts and researchers because CSR improves a company's image and performance [1]. This is because most industrial companies caused an environmental impact in the form of climate change, global warming, changes in seasons, air pollution, unpredictable weather, and rainfall, which affects the well-being of people, animals, as well as all living beings. To minimize this environmental impact, business management experts create and promote the program CSR, which will help to transform into a green manufacturing company [2]. So CSR can be defined as a concept used for business management in which a company is responsible for the impact of the manufacturing process on the people living in the community, both socially and environmentally [3]. CSR has been defined in many ways in the literature [4]. Corporate

social responsibility (CSR) refers to a company's ethical and sustainable operation toward societal members [5]. This implies that companies should consider ethical and environmental concerns of the community in its industrial operation even though it is not a legal requirement [6]. It is commonly seen that businesses create new jobs and increase wealth. However, daily industrial operation emits lots of carbon dioxide into the atmosphere if the company operates recklessly and does not take responsibility, resulting in a threat to society and the environment [7]. So, it is important for a business company to follow business ethics and adopts strategies of CSR for socio-economic development with environmental sustainability [8]. Adoption of CSR is important specifically since it helps to increase sale volume as customers have preference to buy products from the company that are socially and environmentally friendly. In brief, CSR consists of corporate activities with welfare consideration of stakeholders, community, and environment. There are many reasons for a company to engage in CSR activities as given below [9]:

---

\*Corresponding author; email: sayam.aro2560@gmail.com

- CSR activities are requirements of responsible citizen.
- CSR activities aid employee's motivation, job security, and interest to continue working.
- CSR activities motivate customers to purchase goods and products from environmentally friendly companies.
- CSR activities are available to the company that have environmental concerns, result in lesser costs in logistics and resource usage.
- CSR activities are important feature of a company's risk management. In addition, the adoption of CSR brings lots of benefits to a company as follows [6]:
  - Competitive advantage due to consideration of social and environmental factors.
  - Lesser cost in production due to ethical considerations for sustainability, such as saving resources, using recycled products in packaging, etc.
  - Enhance a better corporate image or brand to the public.
  - Attract more customers.
  - Provide education to employees regarding CSR activities, strategies, and responsibilities.
  - Increased positive attitude to employees regarding personal and career development.

ECSR is one dimension of CSR for environmental protection to achieve long-term environmental well-being. It is the strategy adopted by a company to solve the deterioration of the environment caused by business organizations [10]. Adoption of ECSR is important in the corporate world because ECSR performs multi-dimensional activities, related to corporate governance, sustainability, and an increase in the substantial capacity of a company's competitiveness and performance due to its ability to add green business initiatives to CSR [11]. ECSR particularly focuses on the awareness of climate change and the organizational responsibilities to mitigate adverse environmental effects [12]. In other words, ECSR is a multi-dimensional concept, related to a company's corporate governance, sustainability, and performance, having aimed at reducing the hazardous impact on the environment in the process of an organization's production process. This article is prepared by using the state-of-the-art literature review method, relevant to the stated objectives. Literature for reviewing is searched by typing keywords, such as environmental corporate social responsibility and importance of environmental corporate social responsibility in relevant search engines available online.

This article aims to answer the following questions:

1. What is environmental corporate social responsibility (ECSR)?
2. Why ECSR is important?

## 2. What is environmental corporate social responsibility (ECSR)?

This article focuses on the environmental realm of corporate social responsibility abbreviated as "ECSR" or environmental CSR because there is a growing importance to lessen the impact of greenhouse gas emissions, global warming, climate change, and other environmental problems heightened by the industrial production process, and other reckless human behavior [13]. The concept of environmental CSR (ECSR) is a constituent of CSR, developed for effective sustainable business management with social and environmental concerns. So, ECSR can be termed as an important characteristic of CSR, which is developed by the integration of two paradigms of management, business, and environment, having care at the selection of sustainable equipment, raw materials, and products to minimize environmental deterioration [11]. ECSR has been defined by various scholars from various theories including stakeholder and organizational [14-15], local community CSR management [16], and social welfare[17].

There have been studies that show the positive relationship between ECSR and corporate brand competition of an organization that has the responsibility of environmental protection following CSR guidelines for achieving the target of a sustainable development framework [12]. Industrial operating companies that follow strategies of ECSR management can crucially reduce the hazardous effect on the environment due to industrial activities [18]. ECSR is an organization's activities that address sustainable development issues for environmental preservation, which include the reduction of CO<sub>2</sub> emissions, conservation of natural resources, and promotion of using environmentally friendly products and services [1]. In other words, ECSR aims to enhance business performance while minimizing the side-effects of organizational activities on the environment. ECSR is defined as activities, which need collaboration with stakeholders for systematic implementation and it is aimed at environmental protection for community well-being [19]. ECSR is a company's awareness of its responsibility to operate ethically without negatively affecting society and the environment in which we live. It is the integration of environmental concern in business activities with aims to bring sustainable development and environmental protection, and has been defined based on a literature review from three views [20]:

1. Action-based ECSR: Environmental activities adopted by a company
2. Process-based ECSR: Protection of the natural environment from the impact of business process activities
3. Product-based ECSR: Ways that a company provides environmentally friendly goods and services.

For creating a sustainable world and environment, ECSR includes the following activities [21]:

- Activities to recycle waste products following the guidelines for general waste management, e.g., separating types of generated office waste into different types of bins with different labels as general waste, recyclable waste, or hazardous waste.

- Activities to lessen the amount of generated waste from daily business operations that are harmful to the environment. This includes imparting knowledge about the environmental benefits of saving resources to the employees [22].

- Activities to reduce the amount of energy and water consumed in daily industrial operations, e.g., creating awareness through education about the ways and benefits of less energy and water consumption in business operations. For example, limiting the time of energy and water usage, and selecting innovative devices that save energy and water consumption [23].

- Replace fossil fuel energy with renewable energy in business activities with the promotion and introduction of advantages of switching fossil fuel energy to renewable energy.

- Activities to reduce the amount of plastic consumption. Plastic waste takes long time to decompose. Single-use plastic, even though, is preferred on the ground of safety and health consideration generates massive volumes of plastic waste and increases loads for managing waste, particularly in countries that lack adequate and sophisticated facilities for waste management. These plastic wastes cause more problems to the environment if they are dumped and burned in the open space, which emits hazardous gases and chemicals into the environment. So, efficient plastic waste management activities are essential for solving the environmental problem [24]. The 3Rs strategies, that is, reduction, recycling, and recovery need to be adopted in order to use plastic beneficially for human needs without polluting the environment. This can be implemented by imparting environmental lessons or awareness to consumers regarding the usage and disposal of plastic waste along with innovation to preserve a sustainable environment [25].

- Green innovation activities to reduce GHG emissions in business operations. This includes switching to a sustainable mode of travel and transportation, e.g., walking or cycling for short distance travel, using public transportation for long distance travel, and replacing conventional logistics with green logistics for business cargo transportation [26], changing the form of business meetings, seminars, workshops, and conferences to virtual or online mode, along with a selection of a certified eco-friendly, green hotel or avenue for conference or seminar. As GHG emissions cause environmental air pollution with the presence of Particulate Matter (PM) in the atmosphere, which shortens the life span of the global population, it is therefore important to implement ECSR activities to minimize such impact from industrial operation process, use of fossil fuel energy, and use of vehicles for travel and

transportations.

Implementation of ECSR is important for sustainable development as it aims to offset climate change problems by adopting measures to lessen the impact on the environment. So, ECSR is defined as an action program, adopted by a company to minimize the impact of industrial activities

### 3. Environmental CSR and its importance

Nowadays there is a growing concern about climate change and global warming and as a response to solving this challenging issue in the industrial sector, the concept of ECSR and implementation of ECSR activities has increasingly gained significance in the corporate world. ECSR aims to address the threat of climate change by reducing the negative impact on the environment from the business operation process. Consequently, there has been growing attention to the concept of ECSR among academicians, practitioners, and policymakers as the implementation of ECSR management strategy, a driver of environmentally friendly behavior, can lead to sustainable development [14]. Wu et al. [27] pointed out two dimensions of ECSR, viz., strength (less energy and resource usage, reduction of waste, increasing green products and strategies to control pollution by a firm) and concern (strategies of industrial waste disposal and reduction of environmental polluting source). Many organizations follow ECSR processes and practices to promote pro-environmental behavior among office staff [28] and are increasingly implementing environmentally responsible behavior as it is associated with corporate performance, financial performance, and environmental well-being [29]. ECSR has gained importance recently among academicians and policymakers as it is a factor for sustainable development. Implementation of ECSR can significantly guide an organization in encouraging employees' environmentally friendly behavior [30] by following green philosophy with the objective of a collaborative improvement of society, the economy, and the environment [14]. The following gives the discussion of the growing importance of ECSR gathered from the review of the literature:

Makhdoom et al. [1] investigated the role of various kinds of collaboration between a business supplier, customers, and government offices in studying the role of ECSR and company performance. The result of the study contributed insights into understanding the impact of ECSR on company's performance, which is considered relevant to policymakers and practitioners for the development of sustainable industries in terms of cost reduction, revenue achievement, and reputation improvement for creating a better business brand image. This finding has been supported by another study that reported the positive relationship between ECSR and company performance as adoption of ECSR can

save production cost, through efficient resource usage, and revenue accumulation by developing products and services to increase brand image and reputation. Also, since both consumers and producers have a high interest in being socially responsible, they are likely to favor environmentally responsible firms [31].

CSR has been classified into 4 types of responsibilities: environmental, ethical, philanthropic, and economic. ECSR refers to an organization's commitment to sustainability and environmentally friendly practices at every stage of business operations. Its growing importance can be seen as companies of all sizes and industries are prioritizing sustainable practices to lessen the impact on the environment [32].

Yin et al. [20] studied the linkage between ECSR and the pro-environmental behavior of an employee. The specific aim of the study was to minimize the outcome of industrial operation activities on the environment. The study refers to ECSR as environmentally friendly activities adopted by a company, e.g., reusing, recycling, selecting eco-friendly products for packaging, waste reduction, energy saving, and water conservation to lessen the environmental impact of business activities. The research result confirmed the positivity of ECSR implementation as the promotion of employees' environmental citizenship is the factor for the success of ECSR employees' environmental citizenship behavior.

Alam and Islam [33] attempted to study the combined role of ECSR, GCA (Green Competitive Advantage), and GCI (Green Corporate Image) in business corporations for achieving organizational sustainable competition. This study contributed to a better understanding of the strategic benefits for sustainable competitive advantages, resulting from an integrated green concept in a company's CSR activities, such as resource efficiency, market-sales enhancement, and corporate image branding.

Implementation of ECSR is important as a management tool for environmental management due to the following reasons [34]:

- Increase a company's reputation for using ecological criteria in the production process;
- Create eco-innovation for the long-term sustainable development of a company;
- Promote new energy sources, including renewable energy, that emits low or zero-carbon;
- Encourage the adoption of environmental measures to reduce greenhouse gas emissions; and
- Increase awareness among staff, associated market partners, and the general public of environmental protection through knowledge transfer to increase environmental performance.

Rela et al. [19] emphasized ECSR's influence on the perception of environmental well-being, in terms of food production, water use, sanitation, climate change, etc. ECSR activities have an influence on improving environmental well-being since business or-

ganizations adopt countermeasures to solve negative environmental impact. The environmentally friendly measures includes the usage of renewable energy, reduction of CO<sub>2</sub> emissions, and recycling of waste products to increase the performance of a firm as being sustainable and improve the well-being of the community.

Zelazna et al. [35] showed that many companies increasingly realized the environmental impact of business activities and considered adopting responsible behavior to preserve the resource of the environment. As a result, many companies search for solutions to reduce the environmental impact of business activity at all stages of the manufacturing process. So ECSR is a concept for conducting business activities in strict compliance with the law, without lessening the profit, by voluntarily taking into consideration approaches to reduce the environmental impacts of business operations while aspiring to achieve the target of sustainable development for a better world. Table 1 below provides a summary results from the review of literature according to the article's objectives.

#### 4. Case study analysis of implementing ECSR

Wolniak et al. [47] analyzed the benefits of implementing ECSR activities through a case study in a Poland-based company in Koszalin City from 2017-2020. The result demonstrated that the company has been deeply committed to ECSR issues, including its performance in environmental management, that is, based on sustainable development policy so as to achieve perpetual organizational growth while having concern and care for the natural environment. The implementation of ISO 140001 and ECSR strategy in the company resulted in many benefits for creating a sustainable environment. Due to this contribution, many firms are implementing proactive environmental social responsibility approach, that is, ECSR strategy, which leads to ecological innovation with aims to lessen the negative impact of business activities on the environment and to support continuous environmental sustainability.

Some benefits include providing ECSR steps to achieve sustainable development with environmental protection as given below:

- Save energy and water resource consumption;
- Reduce and manage waste to be safe to the environment through waste sorting, storing, dumping, recycling, etc.;
- Reduce air pollution by implementing innovative and environmentally friendly solutions;
- Establish a company board to maintain and review the environmental policy, goals, and implementation;
- Improve personal commitment of staff to implement and achieve the defined environmental development goals;
- Minimize CO<sub>2</sub> emissions;

**Table 2.** Environmental Corporate Social Responsibility (ECSR) and its importance

Definition/Importance	Objectives/Results
<ul style="list-style-type: none"> <li>- ECSR is an organization's actions relating to environmental issues for sustainable development [1].</li> <li>- ECSR is a company's attempt aimed at integrating environmental care into the business process and with stakeholders' interactions [10].</li> <li>- ECSR is important as it promotes sustained SMEs in both innovative and non-innovative firms [37].</li> <li>- ECSR is a multi-dimensional concept, that has a close relationship to corporate sustainable business performance management [33].</li> <li>- ECSR fosters corporate business sustainability, social, economic, and well-being of the community environmentally [19].</li> <li>- ECSR is a firm's obligation for environmental protection, with strength and concern as working dimensions of corporate environmental responsibility (CER) [27].</li> <li>- ECSR is an extension of the CSR concept, where the main reference is environmental protection [34].</li> <li>- ECSR refers to a company's contribution to result to the development of the economy, society, and community by being environmentally responsible [38].</li> <li>- ECSR is having consideration of social and environmental in the distribution and working process of a business organization along with facilitation of stakeholders' participation [39].</li> <li>- Incorporating ECSR strategies in organization management is considered an effective tool for achieving sustainable performance [40].</li> <li>- ECSR deals with a company's eco-activities, and the reduction of negative impacts environmentally by being responsible in governance, credibility, and care of the environment [12].</li> <li>- Implementation of ECSR is important as it increases a company's prestige and lucrativity [43].</li> <li>- ECSR is the integration of environmental concerns in the working process of business organizations without affecting the economic output [44].</li> <li>- Defined as the environmental care responsibility the corporations take to minimize the hazard of industrial activities, for example, the creation of a green work environment and valuing sustainable development [5].</li> <li>- ECSR is a company's working system having the objective of reducing negative environmental impact from business operations by adopting green activities that have abilities to save energy, water, raw materials, and air while increasing productivity [45].</li> </ul>	<ul style="list-style-type: none"> <li>- Confirm a positive relationship between business performance and ECSR [1].</li> <li>- Adoption of ECSR practices saves production costs, develops innovative products and services, and increases a firm's brand image [36].</li> <li>- Identify the positive impact of ECSR on consumers' allegiance to a firm [10].</li> <li>- Use technological resources and investigate the contribution of ECSR to increase SMEs' (small and medium-sized enterprises) systems and product innovativeness [37].</li> <li>- Investigate relationships of 3 concepts' (ECSR, GCI, and GCA) of a firm. The result showed the important function of ECSR in bridging the other two in the green business world [33].</li> <li>- Explore the impact of ECSR strategies on employees' behavior toward the environment. The result confirmed the positive relationship [20].</li> <li>- ECSR practices had resulted in an increase of community's EWB and sustainability [19].</li> <li>- Reveal CER's impact on company's performance and innovation [27].</li> <li>- Firms that implemented ECSR have a significant impact on the role and attitude of citizens toward environmental issues that resulted in stable development, business success, reputation, ethical behavior, and quality of life [34].</li> <li>- Study the relationship between CSR, green innovation, environmental strategy, and performance. The results showed that CSR contributed to the adoption of an innovative green strategy for improving environmental performance [41].</li> <li>- Study the relationship between CSR practices and sustainable development and also environmentally sustainable development with green innovation [42].</li> <li>- Investigate the role of an airline's ECSR in bridging customer's allegiance supported by factors such as brand prestige, affection and appreciation, and environmental preservation [38].</li> <li>- Investigate the linkage of ECSR and pro-environmental behaviors through the moderating act of empathy. The result confirmed positive [39].</li> <li>- Examine the framework for the adoption of CSR activities, green practices, and the effect on employees' pro-environmental behavior [40].</li> <li>- Propose to study ECSR with the corporate philosophy, output, and equipment used on the environment to minimize resource usage and generated waste [12].</li> <li>- Examine the impact of ECSR on customers' enduring allegiance towards a company [44].</li> <li>- Investigate ECSR's influence on corporate prestige and in increasing profit. The result confirmed positive [43].</li> <li>- Investigate the positive impact of ECSR on corporate financial performance [45].</li> <li>- Examine role, relevance, motives, and pressures to adopt ECSR practices in business companies [46].</li> </ul>

- Improve technical parameters of atmospheric emissions such as time and temperature of combustion, height of emission source, travel of combustion gases; reduce consumption of energy; and lower emissions of air pollutants and volume of waste; and

- Improve all the processes connected with environmental management.

Similarly, Hidayati [48] analyzed the pattern of CSR management in four Indonesian companies by focusing on three main areas: 1. relation of a company's CSR programs and core businesses; 2. programs on the economic, social, and environmental dimensions; and 3. the implementation of CSR programs for the company's competitive advantage and sustainable development. The result indicated high commitment from the four companies in the implementation of CSR programs and business ethics. The result of the study also revealed a comprehensive account of CSR practices of companies in Indonesia, based on the companies' characteristics, CSR programs' relations to the core business; CSR programs covering the economic, social, and environmental dimensions; and the sustainability of the CSR programs. The study contributed to CSR concepts, theories, business ethics, and sustainable development. In this study, sustainable development includes three domains, that is, economy, society, and the environment. The environmental aspect of CSR in this study, such as of Astra Cooperative Company, included the adoption of green strategy, green process, green product, and green employee.

## 5. Conclusions

From the above analysis of literature, it can be stated that ECSR has been defined in many ways by many scholars. It is a management concept whereby a company integrates environmental concerns in daily business activities, by operating in a sustainable to bring sustainable development. ECSR practices increase corporate prestige, customer's enduring allegiance, profitability, competitiveness, financial performance, green innovation, and sustainable development with environmental preservation. Any organization that has the responsibility for environmental protection is considered to be following environmental CSR, which provides a strategic guideline for an organization to achieve sustainable development goals. So, it is a multi-dimensional concept because it is related to corporate governance and sustainability, and helps to increase the substantial capacity of a company's competitiveness and performance. ECSR has gained importance increasingly among scholars, academicians, policymakers, and practitioners in recent decades as the implementation of ECSR activities successfully will lead to sustainable development. Also implementation of ECSR can significantly aid employees' green vision and pro-environmental behavior. A com-

pany needs to implement ECSR as it can help to minimize cost in production, while improving corporate brand image and prestige, thus helping to achieve a better performance in all corporate variables such as management, competitiveness, reputation, innovation, profitability, consumer loyalty, sustainable development, and environmental sustainability. Finally, it can be concluded that the adoption of ECSR in corporate management is very essential as a strategy to solve the environmental problem while strengthening a green ecology for the overall well-being of the economy and society. However, it is important to note that the ECSR activities of a firm require systematic commitments and periodic assessment with stakeholders' collaboration for the successful implementation of sustainable business strategies.

## Acknowledgment

The authors are thankful to Mahidol University Library and Knowledge Center for providing access to all journals and literature available online on the Internet and also for checking for plagiarism in the article manuscript. The authors also would like to thank IRR Journal for their consideration of publishing this article.

## Abbreviations

CER	Corporate environmental responsibility
CSR	Corporate social responsibility
ECSR	Environmental corporate social responsibility
EWB	Environmental well-being
GCA	Green competitive advantage
GCI	Green corporate image
GHGs	Greenhouse gases
SMEs	Small and medium enterprises
3Rs	Reduction, recycling, and recovery

## References

- [1] [1] Z.H. Makhdoom, Y. Gao, X. Song, W.M. Khoso, Z.A. Baloch. Linking environmental corporate social responsibility to firm performance: The role of partnership restructure, *Environmental Science and Pollution Research* (2023) 1-16.
- [2] [2] V.K. Mittal, K.S. Sangwan. Development of a model of barriers to environmentally conscious manufacturing implementation, *International Journal of Production Research* 52(2)(2014) 584-594.
- [3] [3] European Commission. Communication from the commission to the European parliament, the council, the European economic and social committee, and the committee of the regions, 2011, Available from <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/> (accessed 10 Jan 2023).
- [4] [4] A. Dahlsrud. How corporate social responsibility is defined: an analysis of 37 definitions, *Corporate social responsibility and environmental management* 15(1) (2008) 1-13.
- [5] [5] W.F. Guo, J. Zhou, C.L. Yu, S.B. Tsai, Y.Z. Xue, Q. Chen, ... Wu CH. Evaluating the green corporate social responsibility of manufacturing corporations from a green industry law perspective, *International Journal of Production Research* 53(2) (2015) 665-674.
- [6] [6] E. Collier. The importance of Corporate social responsibility for your business, 2018, Available from

- <https://www.highspeedtraining.co.uk/hub/importance-of-corporate-social-responsibility/>
- [7] [7] S. Yadav, D. Bhudhiraja, D. Gupta. Corporate Social Responsibility—The Reflex of Science and Sustainability, *European Journal of Molecular Clinical Medicine* 7 (2021) 6222–6233.
  - [8] [8] L.T. Tiep, N.Q. Huan, T.T.T. Hong. Role of corporate social responsibility in sustainable energy development in the emerging economy, *International journal of energy economics and policy* 11(2021)172-186.
  - [9] [9] G.B. Sprinkle, L.A. Maines. The benefits and costs of corporate social responsibility, *Business Horizons* 53 (5) (2010) 445-453.
  - [10] [10] D. Godefroit-Winkel, M. Schill, F. Diop-Sall. Does environmental corporate social responsibility increase consumer loyalty? *International Journal of Retail Distribution Management* 50(4) (2022) 417-436.
  - [11] [11] N. Rahman, C. Post. Measurement issues in environmental corporate social responsibility (ECSR): Toward a transparent, reliable, and construct valid instrument, *Journal of business ethics*, 105 (2012)307-319.
  - [12] [12] S.P. Chuang, Huang S. J. The effect of environmental corporate social responsibility on environmental performance and business competitiveness: The mediation of green information technology capital, *Journal of business ethics* 150 (2018) 991-1009.
  - [13] [13] S. Khan, M. Murshed, I. Ozturk, K. Khudoykulov. The roles of energy efficiency improvement, renewable electricity production, and financial inclusion in stimulating environmental sustainability in the Next Eleven countries, *Renewable Energy* 193 (2022) 1164-1176.
  - [14] [14] B. Latif, N. Gunarathne, J. Gaskin, T. San Ong, M. Ali. Environmental corporate social responsibility and pro-environmental behavior: The effect of green shared vision and personal ties, *Resources, Conservation, and Recycling* 186 (2022) 106572.
  - [15] [15] C.R. Tolmie, K. Lehnert, H. Zhao. Formal and informal institutional pressures on corporate social responsibility: A cross-country analysis, *Corporate Social Responsibility and Environmental Management* 27(2) (2020) 786-802.
  - [16] [16] K. Fukukawa. *Corporate Social Responsibility and Local Community in Asia*, London: Routledge, 2014.
  - [17] [17] L. Moreno. Welfare mix, CSR and social citizenship, *International journal of sociology and social policy* 30(11/12) (2010) 683-696.
  - [18] [18] Q.S. Deng, R. Alvarado, L. Cuesta, B. Tillaguango, M. Murshed, A. Rehman, ... M. Lopez-Sanchez. Asymmetric impacts of foreign direct investment inflows, financial development, and social globalization on environmental pollution, *Economic Analysis and Policy* 76 (2022) 236-251.
  - [19] [19] I. Z. Rela, A.H. Awang, Z. Ramli, S. Md Sum, M. Meisanti. Effects of environmental corporate social responsibility on environmental well-being perception and the mediation role of community resilience, *Corporate Social Responsibility and Environmental Management* 27(5) (2020) 2176-2187.
  - [20] [20] C. Yin, H. Ma, Y. Gong, Q. Chen, Y. Zhang. Environmental CSR and environmental citizenship behavior: The role of employees' environmental passion and empathy, *Journal of Cleaner Production*, 320 (2021) 128751.
  - [21] [21] H. Hopper. Evolving Environmental CSR for the 21st Century, 2021, Available from <https://www.diligent.com/en-gb/blog/environmental-csr/>
  - [22] [22] S. Aroonsrimorakot. Green Office Management Standard in Mahidol University, Thailand, *Pertanika Journal of Social Sciences Humanities*, 26(4) (2018) 2505-2521.
  - [23] [23] S. Aroonsrimorakot, M. Laiphrakpam, C. Korattana. Green office, its features and importance for sustainable environmental management: A comparative review in search for similarities and differences, *Interdisciplinary Research Review* 14(5) (2019) 31–38.
  - [24] [24] K.V.S. Rajmohan, C. Ramya, M.R. Viswanathan, S. Varjani, S. Plastic pollutants: effective waste management for pollution control and abatement. *Current Opinion in Environmental Science Health*, 12, (2019) 72-84.
  - [25] [25] N. Parashar, S. Hait. Plastics in the time of COVID-19 pandemic: protector or polluter? *Science of the Total Environment* 759 (2021) 144274.
  - [26] [26] S. Aroonsrimorakot, M. Laiphrakpam, S. Mungkun. Green Logistics (GL) for Environmental Sustainability: A Review in Search of Strategies for Thailand's GL Management, *ABAC Journal* 42(2) (2022) 293-319.
  - [27] [27] W.Wu, Z. Liang, Q. Zhang. Effects of corporate environmental responsibility strength and concern on innovation performance: The moderating role of firm visibility, *Corporate Social Responsibility and Environmental Management* 27(3) (2020) 1487-1497.
  - [28] [28] A.M. Ruepert, K. Keizer, L. Steg. The relationship between corporate environmental responsibility, employees' biospheric values, and pro-environmental behavior at work, *Journal of Environmental Psychology* 54 (2017) 65-78.
  - [29] [29] M.A. Camilleri. Corporate sustainability and responsibility: creating value for the business, society and the environment, *Asian Journal of Sustainability and Social Responsibility* 2(1) (2017) 59-74.
  - [30] [30] J.P. Gond, A. El-Akremi, J. Igalens, V. Swaen. Corporate social responsibility influence on employees, *International Center for Corporate Social Responsibility* 54 (2010) 1-47.
  - [31] [31] P. Zhou, F. Arndt, K. Jiang, W. Dai. Looking backward and forward: Political links and environmental corporate social responsibility in China, *Journal of Business Ethics* 169 (2021) 631-649.
  - [32] [32] S. Grawehr. The 4 types of corporate social responsibility your business should consider ( why), 2022, Available from <https://alayagood.com/blog/types-of-corporate-social-responsibility/>
  - [33] [33] S.M. Alam, K.M. Islam. Examining the role of environmental corporate social responsibility in building green corporate image and green competitive advantage, *International Journal of Corporate Social Responsibility* 6(1) (2021) 1-16.
  - [34] [34] A. Wyszomirski, M. Olkiewicz. Environmental corporate social responsibility as a tool for creating the future of environmental protection, *Rocznik Ochrona Srodowiska*, 22 (2020) 1145-1161.
  - [35] [35] A. Zelazna, M. Bojar, E. Bojar. Corporate Social Responsibility towards the Environment in Lublin Region, Poland: A comparative study of 2009 and 2019, *Sustainability* 12(11) (2020), 4463.
  - [36] [36] A. Razzaq, A. Sharif, I. Ozturk, M. Skare. Inclusive infrastructure development, green innovation, and sustainable resource management: Evidence from China's trade-adjusted material footprints, *Resources Policy* 79 (2022) 103076.
  - [37] [37] F.J. Forcadell, F. Ubeda, E. Aracil. Effects of environmental corporate social responsibility on the innovativeness of Spanish industrial SMEs, *Technological Forecasting and Social Change* 162 (2021) 120355.
  - [38] [38] H. Han, J. Yu, W. Kim. Environmental corporate social responsibility and the strategy to boost the airline's image and customer loyalty intentions, *Journal of Travel Tourism Marketing* 36(3) (2019) 371-383.
  - [39] [39] T. Islam, G. Ali, H. Asad. Environmental CSR and pro-environmental behaviors to reduce environmental dilapidation: The moderating role of empathy, *Management Research Review* 42(3) (2019) 332-351.
  - [40] [40] L. Suganthi. Examining the relationship between corporate social responsibility, performance, and employees' pro-environmental behavior at work with green practices as a mediator, *Journal of cleaner production* 232 (2019) 739-750.
  - [41] [41] S. Kraus, S.U. Rehman, F.J.S.García. Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation, *Technological Forecasting and Social Change* 160 (2020) 120262.