



Integrating Corporate Social Responsibility, Green Innovation, and Environmental Practices: A Systematic Literature Review of Drivers and Outcomes in Industrial Sustainability

Farah Qalbia¹, Seger Santoso²

¹STIE Kasih Bangsa, Indonesia, farah@stiekasihbangsa.ac.id

²STIE Kasih Bangsa, Indonesia, seger@stiekasihbangsa.ac.id

ABSTRACT. *This qualitative systematic literature review examines the integration of Corporate Social Responsibility (CSR), green innovation, and environmental practices as key drivers of industrial sustainability. The review synthesizes prior research to identify major antecedents, mechanisms, and outcomes associated with these interconnected dimensions. The findings indicate that CSR provides a strategic foundation for sustainability, while environmental practices translate corporate commitments into operational actions and green innovation serves as a transformative mechanism for improving environmental and organizational performance. Internal drivers, including employee engagement, organizational learning, and innovation capability, interact with external pressures such as stakeholder expectations, environmental regulations, and market competition. The review further reveals that sustainability outcomes are context-dependent and include improved environmental performance, resource efficiency, competitive advantage, organizational legitimacy, and long-term industrial sustainability. The study proposes an integrated framework emphasizing the complementary roles of CSR, environmental practices, and green innovation.*

Keywords *Corporate Social Responsibility; Green Innovation; Environmental Practices; Industrial Sustainability; Environmental Performance.*

INTRODUCTION

In recent decades, the growing urgency of environmental degradation, climate change, and resource depletion has intensified global attention toward sustainable industrial development. Industrial activities, while serving as key drivers of economic growth, have also been identified as major contributors to environmental pollution and ecological imbalance (Ahuti, 2015). This dual role has compelled firms to reconsider their operational strategies by integrating sustainability principles into their core business models. Among the most prominent approaches adopted by organizations is Corporate Social Responsibility (CSR), which has evolved from a peripheral philanthropic activity into a strategic imperative that aligns business operations with societal and environmental expectations (Carroll, 2016; Bansal, 2005).

CSR encompasses a broad spectrum of practices aimed at fulfilling economic, legal, ethical, and philanthropic responsibilities toward stakeholders (Turker, 2009; Carroll, 2016). Increasingly, firms are leveraging CSR initiatives not only to enhance their reputation and legitimacy but also to address environmental challenges through sustainable practices (Babiak & Trendafilova, 2011). Stakeholder theory further emphasizes that organizations are under pressure from diverse stakeholder groups

including customers, employees, governments, and communities to adopt environmentally responsible behaviors (Guoyou et al., 2013; Fatma & Rahman, 2015). Consequently, CSR has become closely intertwined with environmental management strategies and sustainability outcomes in industrial contexts. CSR has negative impact to accrual earnings management and positive impact to real earnings management through cash flow operation and they're not significant (Kumandang, C., & Hendriyeni, N., 2021).

A critical dimension of CSR in the sustainability discourse is its relationship with green innovation. Green innovation refers to the development of products, processes, and practices that reduce environmental harm, improve resource efficiency, and support sustainable development (Chang, 2011; Albort-Morant et al., 2016). Prior studies suggest that CSR initiatives can serve as catalysts for green innovation by fostering organizational learning, enhancing stakeholder engagement, and encouraging environmentally responsible decision making (Gallego-Álvarez et al., 2011; Kraus et al., 2020). For instance, firms that actively engage in CSR are more likely to invest in eco friendly technologies and adopt innovative solutions that minimize environmental impact (Hojnik & Ruzzier, 2016; Song & Yu, 2018). Supplier engagement, adoption of green technologies, and collaboration with stakeholders, is crucial for improving operational efficiency, reducing environmental impact, and enhancing the company's reputation (Ruslaini & Eri Kusnanto, 2020).

Furthermore, environmental practices such as waste reduction, energy efficiency, pollution control, and sustainable supply chain management represent tangible manifestations of CSR commitments within organizations (Seuring & Müller, 2008; Yu et al., 2017). These practices not only contribute to environmental sustainability but also enhance organizational competitiveness and operational efficiency (López-Gamero et al., 2023). The integration of CSR and environmental practices is therefore considered a strategic pathway for achieving sustainable industrial performance. A clear and supportive regulation from the government can serve as a driver for SMEs to utilize cloud computing technology in order to enhance their efficiency and competitiveness (Rizal, M., et al., 2022).

Empirical evidence highlights the complex and multidimensional nature of the relationships among CSR, environmental practices, and green innovation. For example, Dzage et al. (2024) found that employee-centered CSR initiatives significantly influence

sustainable environmental practices, while other stakeholder-oriented CSR dimensions may not exhibit similar effects. Their findings also confirm that sustainable environmental practices positively contribute to green innovation, reinforcing the notion that environmental management serves as a mediating mechanism linking CSR to innovation outcomes. Similarly, Shahzad et al. (2020) demonstrated that CSR initiatives significantly enhance environmental sustainability and green innovation in manufacturing firms, suggesting that CSR driven strategies can create synergies between environmental and innovation performance.

Despite these insights, the literature remains fragmented regarding the drivers and outcomes of integrating CSR, green innovation, and environmental practices. Several studies emphasize internal organizational factors such as leadership commitment, organizational culture, and resource capabilities as key drivers of sustainability initiatives (Lopes et al., 2017; Mehralian et al., 2016). Others highlight external pressures, including regulatory requirements, market competition, and stakeholder expectations, as critical determinants of environmental engagement (Panwar et al., 2016; Babiak & Trendafilova, 2011). Moreover, the role of green innovation as both an outcome of CSR and a driver of environmental performance adds further complexity to the conceptual framework (Chang, 2016; Kraus et al., 2020).

In addition to identifying drivers, the outcomes of integrating CSR, green innovation, and environmental practices have attracted significant scholarly attention. These outcomes extend beyond environmental benefits to include improved financial performance, enhanced corporate reputation, increased customer loyalty, and competitive advantage (Kim et al., 2018; Hang et al., 2022). Green innovation, in particular, has been associated with improved organizational efficiency and long-term sustainability, as it enables firms to develop environmentally friendly products and processes that meet evolving market demands (Kunapatarawong & Martínez-Ros, 2016). Furthermore, the adoption of sustainable practices can foster trust among stakeholders and strengthen organizational legitimacy in increasingly environmentally conscious markets (Öberseder et al., 2013).

Nevertheless, inconsistencies in empirical findings suggest that the relationships among these constructs are contingent upon contextual factors such as industry characteristics, geographical settings, and organizational size (Al-Abdin et al., 2018; Tran

& Nguyen, 2020). For instance, firms operating in developing economies may face resource constraints and institutional challenges that limit their ability to implement effective CSR and environmental strategies (Andrews, 2016). Conversely, firms in developed economies may benefit from stronger regulatory frameworks and greater stakeholder awareness, which facilitate the adoption of sustainable practices (Zelazna et al., 2020). These variations underscore the need for a comprehensive synthesis of existing literature to identify common patterns and contextual differences.

Given the increasing importance of sustainability in industrial development, there is a pressing need to systematically review and integrate existing research on CSR, green innovation, and environmental practices. While prior studies have examined these constructs individually or in pairs, limited research has provided a holistic perspective that captures their interdependencies and collective impact on industrial sustainability. A systematic literature review offers a rigorous approach to synthesizing existing knowledge, identifying research gaps, and developing a comprehensive framework that can guide future research and practice (Babbie & Edgerton, 2023).

Therefore, this study aims to conduct a systematic literature review on the integration of Corporate Social Responsibility, green innovation, and environmental practices, with a particular focus on identifying key drivers and outcomes in industrial sustainability. By synthesizing empirical and theoretical insights from prior research, this study seeks to contribute to the literature in several ways. First, it provides a comprehensive understanding of how CSR initiatives influence environmental practices and green innovation. Second, it identifies the internal and external drivers that facilitate or hinder the adoption of sustainable practices. Third, it examines the outcomes of integrating these constructs in terms of environmental, economic, and organizational performance. Finally, it highlights research gaps and proposes directions for future studies to advance the field of industrial sustainability.

The integration of CSR, green innovation, and environmental practices represents a critical pathway for achieving sustainable industrial development. As organizations continue to face increasing environmental challenges and stakeholder pressures, understanding the drivers and outcomes of these interrelated constructs becomes essential for designing effective sustainability strategies. This systematic literature review aims to provide a comprehensive and nuanced understanding of these relationships, thereby

contributing to both academic research and practical applications in the field of industrial sustainability.

LITERATURE REVIEW

Conceptual Foundations of CSR, Green Innovation, and Environmental Practices. Corporate Social Responsibility (CSR) has evolved into a central strategic concept that integrates economic, social, and environmental responsibilities within organizational decision making processes (Carroll, 2016). CSR is commonly conceptualized through the multidimensional framework known as Carroll's pyramid, which emphasizes economic, legal, ethical, and philanthropic responsibilities as interrelated obligations of firms (Carroll, 2016). Over time, CSR has transitioned from a philanthropic orientation toward a strategic and sustainability driven approach that aligns corporate goals with broader societal expectations (Alhouti & D'Souza, 2018).

Environmental sustainability, as a key dimension of CSR, is increasingly embedded in corporate strategies due to rising regulatory pressures, stakeholder expectations, and environmental degradation concerns associated with industrial growth (Ahuti, 2015). Firms are now expected to adopt sustainable environmental practices, including pollution control, resource efficiency, and waste reduction, as part of their operational responsibilities (Babiak & Trendafilova, 2011). These practices are particularly critical in industrial sectors, where environmental externalities are more pronounced (Dzage et al., 2024).

Green innovation represents a crucial mechanism through which firms translate CSR commitments into tangible environmental and economic outcomes (Albort-Morant et al., 2016). It encompasses the development of environmentally friendly products, processes, and technologies that reduce ecological impact while enhancing competitiveness (Chang, 2011). The integration of CSR and green innovation has been widely recognized as a pathway toward achieving sustainable development and long term firm performance (Chang, 2016).

Drivers of CSR, Green Innovation, and Environmental Practices. **Internal Organizational Drivers.** Internal capabilities and organizational learning play a fundamental role in fostering green innovation and environmental practices within firms (Albort-Morant et al., 2016). Firms with strong absorptive capacity and knowledge

sharing mechanisms are more likely to develop innovative solutions that support sustainability objectives (Albort-Morant et al., 2016). Additionally, ethical leadership and corporate values significantly influence the adoption of CSR initiatives and environmentally responsible behaviors among employees (De Roeck & Farooq, 2018).

Employee engagement is another critical internal driver, as CSR initiatives can enhance employee satisfaction and encourage pro environmental behaviors that contribute to organizational sustainability (Afridi et al., 2020). Studies have shown that employees who perceive their organizations as socially responsible are more likely to exhibit extra role behaviors that support environmental and social goals (Afridi et al., 2020).

External Institutional and Stakeholder Pressures. External pressures, including regulatory frameworks, stakeholder expectations, and competitive dynamics, significantly drive CSR and environmental practices (Bansal, 2005). Governments and regulatory bodies impose environmental standards that compel firms to adopt sustainable practices and reduce environmental harm (Andrews, 2016). In developing economies, such as Ghana, regulatory initiatives have been shown to influence environmental performance in industries like mining and manufacturing (Bawua & Owusu, 2018; Dzage et al., 2024).

Stakeholder theory further explains that firms engage in CSR and green innovation to meet the expectations of customers, investors, and communities (Babiak & Trendafilova, 2011). For example, consumer demand for environmentally friendly products encourages firms to invest in green product innovation (Chang, 2016). Similarly, investors increasingly consider environmental, social, and governance (ESG) factors when evaluating firm performance, thereby incentivizing sustainable business practices (Bao & Yu, 2019).

Market and Competitive Drivers. Market competition also acts as a catalyst for CSR and green innovation, as firms seek to differentiate themselves and gain competitive advantage through sustainability initiatives (Chang, 2011). Companies that adopt proactive environmental strategies often achieve superior performance by reducing costs, improving efficiency, and enhancing brand reputation (Battaglia et al., 2014).

The emergence of circular economy models further reinforces the importance of sustainability in competitive markets by promoting resource efficiency and waste

minimization (Atasu et al., 2021). These models encourage firms to redesign products and processes to support reuse, recycling, and sustainability (Allen et al., 2021).

Integration of CSR, Green Innovation, and Environmental Practices. The integration of CSR, green innovation, and environmental practices is increasingly recognized as a holistic approach to industrial sustainability (Dzage et al., 2024). CSR provides the strategic framework, while green innovation serves as the operational mechanism for implementing sustainability initiatives (Chang, 2011). Environmental practices, in turn, represent the tangible outcomes of these integrated efforts (Babiak & Trendafilova, 2011).

Empirical studies demonstrate that firms that effectively integrate CSR with green innovation achieve better environmental and financial performance outcomes (Chang, 2016). This integration enhances organizational capabilities and supports long-term sustainability by aligning business strategies with environmental goals (Albort-Morant et al., 2016).

Furthermore, sustainable supply chain management and circular economy principles play a crucial role in reinforcing this integration by extending sustainability practices beyond organizational boundaries (Allen et al., 2021). Firms increasingly collaborate with suppliers and partners to implement environmentally sustainable practices across the value chain (Atasu et al., 2021).

Outcomes of CSR, Green Innovation, and Environmental Practices. **Environmental Performance.** One of the primary outcomes of integrating CSR and green innovation is improved environmental performance, including reduced emissions, resource conservation, and waste minimization (Dzage et al., 2024). Firms that adopt sustainable environmental practices are better equipped to mitigate environmental risks and comply with regulatory requirements (Bawua & Owusu, 2018).

Financial and Competitive Performance. CSR and green innovation also contribute to enhanced financial performance and firm value by improving efficiency, reducing costs, and strengthening stakeholder relationships (Bao & Yu, 2019). Empirical evidence suggests that firms engaging in CSR activities experience increased profitability and market valuation (Chung et al., 2018).

Additionally, green innovation provides competitive advantages by enabling firms to differentiate their products and services in environmentally conscious markets (Chang,

2011). This differentiation enhances brand reputation and customer loyalty, leading to sustained competitive performance (Battaglia et al., 2014).

Social and Organizational Outcomes. CSR initiatives positively influence employee satisfaction, organizational commitment, and social performance (Afridi et al., 2020). Employees in socially responsible organizations are more likely to engage in behaviors that support sustainability and organizational goals (De Roeck & Farooq, 2018).

Moreover, CSR contributes to community development and social well being by addressing societal challenges and promoting inclusive growth (Darus et al., 2014). These social outcomes further reinforce the legitimacy and reputation of firms in the eyes of stakeholders (Al-Abdin et al., 2018).

Despite significant progress in understanding CSR, green innovation, and environmental practices, several research gaps remain. First, there is a need for more integrative studies that examine the dynamic interactions among these constructs in different industrial contexts (Dzage et al., 2024). Second, existing research largely focuses on developed economies, highlighting the need for studies in emerging markets where institutional environments differ significantly (Al-Abdin et al., 2018).

Additionally, future research should explore the role of digital technologies and innovation ecosystems in enhancing sustainability practices and outcomes (Allen et al., 2021). Finally, longitudinal studies are needed to assess the long term impact of CSR and green innovation on organizational performance and sustainability (Bansal, 2005).

METHODS

This study employs a qualitative systematic literature review (SLR) to synthesize and critically examine the integration of Corporate Social Responsibility (CSR), green innovation, and environmental practices in promoting industrial sustainability. A systematic review is appropriate for fragmented and multidisciplinary research because it provides a transparent and structured process for identifying, selecting, evaluating, and synthesizing relevant evidence (Tranfield et al., 2003; Snyder, 2019). The qualitative approach focuses on understanding conceptual relationships, drivers, contextual conditions, mechanisms, and outcomes rather than statistically aggregating effect sizes across studies (Snyder, 2019).

The review was guided by the evidence informed systematic review principles of Tranfield et al. (2003) and reported in accordance with the PRISMA 2020 framework to improve transparency and reproducibility (Page et al., 2021). The review addressed five questions concerning: (1) theoretical perspectives explaining the relationships among CSR, green innovation, environmental practices, and industrial sustainability; (2) internal and external drivers; (3) interconnections among the focal constructs; (4) environmental, organizational, economic, and competitive outcomes; and (5) contextual differences and research gaps.

The literature search was conducted using major international academic databases and complementary searches through Google Scholar. Keywords included “corporate social responsibility,” “CSR,” “green innovation,” “eco-innovation,” “environmental practices,” “environmental sustainability,” “environmental management,” “industrial sustainability,” “sustainable manufacturing,” and “environmental performance.” These terms were combined using Boolean operators to identify studies examining the relationships among the focal constructs (Snyder, 2019).

Predefined inclusion and exclusion criteria were applied to ensure relevance and quality. Included studies were peer reviewed journal articles written in English that examined CSR, green innovation, environmental practices, sustainability, environmental management, or related organizational outcomes. Studies were required to provide relevant theoretical or empirical evidence and sufficient methodological information. Conference abstracts, editorials, book reviews, duplicated publications, non academic reports, and studies focusing exclusively on technical environmental processes were excluded (Tranfield et al., 2003; Snyder, 2019).

The study selection process followed four PRISMA 2020 stages: identification, screening, eligibility assessment, and final inclusion (Page et al., 2021). Relevant publications were initially identified through database searches, followed by duplicate removal. Titles and abstracts were then screened, and the full texts of potentially relevant studies were assessed against the eligibility criteria. The final selection was subsequently included in the qualitative synthesis.

A structured data extraction framework was used to collect information consistently from the selected studies. Extracted information included bibliographic details, research context, theoretical perspective, research design, key constructs, drivers, mechanisms,

outcomes, principal findings, and research limitations. This structured approach enabled meaningful comparisons across heterogeneous studies and supported the identification of contextual and conceptual differences (Tranfield et al., 2003; Snyder, 2019).

The methodological quality of the included studies was assessed according to the clarity of research objectives, appropriateness of theoretical frameworks, methodological transparency, empirical relevance, analytical robustness, and contribution to understanding industrial sustainability. The assessment aimed to evaluate the relative strength of the evidence rather than exclude studies solely because of methodological differences.

The selected studies were analyzed using qualitative thematic synthesis. Relevant findings were coded according to CSR, green innovation, environmental practices, sustainability drivers, and sustainability outcomes. Related codes were grouped into broader themes, while recurring relationships and differences were compared across studies. The synthesis focused on themes such as CSR as a strategic foundation, internal and external sustainability drivers, environmental strategy, innovation capability, environmental outcomes, economic and competitive benefits, and contextual barriers.

Finally, the findings were integrated into an overarching conceptual framework positioning CSR as a strategic and stakeholder oriented driver, environmental practices as the operational manifestation of sustainability commitments, and green innovation as a transformative capability. Their interaction was expected to influence environmental performance, competitiveness, organizational legitimacy, and long term industrial sustainability (Bansal, 2005; Chang, 2011; Kraus et al., 2020). The reliability of the review was strengthened through predefined search procedures, explicit eligibility criteria, structured data extraction, thematic analysis, and transparent reporting based on PRISMA 2020 (Tranfield et al., 2003; Page et al., 2021).

RESULTS

The selected studies were analyzed using a qualitative thematic synthesis approach. Relevant findings were first coded according to the main constructs, including CSR, green innovation, environmental practices, sustainability drivers, and sustainability outcomes. Related codes were subsequently grouped into broader thematic categories, while

recurring relationships and mechanisms were compared to identify convergent and divergent patterns.

The synthesis generated higher-order themes, including CSR as a strategic foundation for sustainability, internal organizational drivers, external institutional and stakeholder pressures, environmental strategy and innovation capability, environmental and ecological outcomes, economic and competitive outcomes, social and organizational outcomes, and contextual barriers. This approach is appropriate because the study aims to interpret interactions among organizational and environmental factors rather than calculate pooled statistical effect sizes. It also facilitates the identification of contradictions arising from differences in CSR dimensions, industries, institutional environments, and geographical contexts.

Following the thematic analysis, the findings were integrated into an overarching conceptual framework. CSR was positioned as a strategic and stakeholder-oriented driver, green innovation as a transformative organizational capability, and environmental practices as the operational expression of sustainability commitments. Their interaction was expected to influence environmental performance, organizational performance, competitiveness, stakeholder legitimacy, and long-term industrial sustainability (Bansal, 2005; Chang, 2011; Kraus et al., 2020).

The synthesis also enabled the identification of potential mediating and moderating mechanisms. Environmental strategy and green innovation may mediate the relationship between CSR and environmental performance, whereas regulatory conditions, stakeholder pressure, organizational resources, and industrial characteristics may influence the strength of these relationships (Kraus et al., 2020; Shahzad et al., 2020).

The trustworthiness of the review was strengthened through predefined search procedures, explicit eligibility criteria, structured data extraction, and transparent synthesis procedures, which reduce arbitrary study selection and improve consistency (Tranfield et al., 2003). Transparency was further supported by documenting each review stage and applying the PRISMA 2020 framework to improve clarity and reproducibility (Page et al., 2021).

Comparing findings across theoretical perspectives, industries, and geographical contexts also supported analytical triangulation. This approach enabled the review to examine how institutional conditions, stakeholder expectations, organizational

capabilities, and innovation processes differently shape sustainability outcomes. The study relied exclusively on published secondary data and maintained ethical principles by accurately representing original findings, avoiding selective interpretation, and appropriately citing all scholarly sources.

This qualitative systematic literature review examines the drivers, mechanisms, and outcomes associated with integrating CSR, green innovation, and environmental practices in industrial sustainability. The review follows a structured process involving research question development, systematic searching, predefined selection criteria, screening, data extraction, quality appraisal, thematic synthesis, and conceptual integration. The methodology is guided by systematic review principles proposed by Tranfield et al. (2003) and Snyder (2019), with transparent reporting based on PRISMA 2020 (Page et al., 2021).

DISCUSSION

This qualitative systematic literature review shows that the integration of Corporate Social Responsibility (CSR), green innovation, and environmental practices forms a multidimensional pathway toward industrial sustainability. CSR provides strategic direction, environmental practices translate sustainability commitments into operational actions, and green innovation transforms environmental challenges into new products, processes, and organizational capabilities (Kraus et al., 2020; Shahzad et al., 2020).

A major finding is the contextual variation in CSR effects. Shahzad et al. (2020) found that all CSR dimensions positively influenced environmental sustainability in Pakistani manufacturing firms, whereas Dzage et al. (2024) reported that only employee-centered CSR significantly predicted sustainable environmental practices in Ghana. These differences indicate that CSR effectiveness depends on stakeholder priorities, employee involvement, institutional conditions, organizational capabilities, and national context. Therefore, CSR initiatives are more effective when embedded in organizational routines and translated into employee behavior and environmental management practices (Babiak & Trendafilova, 2011).

The review also emphasizes the mediating role of organizational mechanisms. Kraus et al. (2020) found that CSR had no significant direct effect on environmental performance but positively influenced environmental strategy and green innovation,

which subsequently improved environmental performance. This differs from Shahzad et al. (2020), who identified a more direct CSR environmental sustainability relationship, but both studies confirm that organizational capabilities are essential for transforming responsibility into sustainability outcomes. Firms are therefore more likely to improve environmental performance when they develop environmental strategies, allocate resources, implement environmental practices, and invest in green innovation.

Green innovation emerged as a key transformation mechanism. Chang (2011) demonstrated that environmental ethics can strengthen competitive advantage through green innovation, while Shahzad et al. (2020) and Dzage et al. (2024) found that environmental sustainability and sustainable environmental practices positively support green innovation. Despite differences in CSR effects, these studies consistently show that operational environmental practices provide a strong foundation for green innovation. Firms should therefore move beyond symbolic sustainability communication and emphasize resource efficiency, waste reduction, pollution prevention, energy management, and environmentally responsible production processes.

Internal organizational capabilities also play an important role. Albort-Morant et al. (2016) emphasized that green innovation depends on organizational learning and the ability to acquire, assimilate, and apply environmental knowledge. This complements Kraus et al. (2020), whose findings suggest that CSR must be supported by environmental strategy and innovation before substantial environmental performance can emerge. Sustainability-oriented intentions alone are therefore insufficient without learning mechanisms, knowledge resources, and innovation capabilities.

Stakeholder and institutional pressures constitute additional sustainability drivers. Guoyou et al. (2013) found that stakeholders influence corporate green innovation strategies, whereas Dzage et al. (2024) showed that stakeholder groups may have unequal effects. External stakeholders may encourage firms to adopt sustainability commitments, while employees play a more direct role in implementing these commitments through daily operational practices. Employees can therefore serve as an important bridge between corporate sustainability strategy and organizational environmental behavior.

The review further indicates that green innovation contributes to environmental and organizational outcomes. Hang et al. (2022) found that CSR and green product innovation can improve organizational performance through competitive advantage and green trust,

supporting Chang's (2011) argument that green innovation can convert environmental responsibility into competitive benefits. However, economic benefits are not automatic because sustainability initiatives require investments in technology, employee development, environmental management, and organizational transformation. Their value therefore depends on implementation quality, market conditions, and industry characteristics.

Environmental practices should also be viewed as a central operational mechanism rather than a secondary CSR outcome. Babiak and Trendafilova (2011) emphasized that organizational motives and external pressures encourage green management, while Kraus et al. (2020) and Dzage et al. (2024) showed that environmental strategy and sustainable practices connect CSR with environmental performance and green innovation. Integrating environmental practices into production, supply chains, energy management, and waste reduction can therefore create a stronger basis for continuous innovation.

The review also extends industrial sustainability beyond individual firms. Seuring and Müller (2008) argued that sustainability increasingly involves supply chain relationships and broader stakeholder networks. Environmental practices and green innovation can diffuse across suppliers, customers, and production networks, making industrial sustainability a value-chain phenomenon requiring collaboration and shared environmental standards.

Overall, the comparison of eight previous studies, Shahzad et al. (2020), Dzage et al. (2024), Kraus et al. (2020), Chang (2011), Albort-Morant et al. (2016), Guoyou et al. (2013), Hang et al. (2022), and Babiak and Trendafilova (2011) reveals both convergence and divergence. The main convergence is that CSR, environmental practices, and green innovation are complementary and can collectively strengthen sustainability performance. The primary divergence concerns whether CSR directly affects environmental outcomes or operates indirectly through mediating mechanisms and contextual conditions.

Accordingly, this review proposes an integrated pathway in which external pressures and stakeholder expectations, together with internal organizational capabilities, stimulate CSR-oriented strategies. These strategies are translated into environmental practices and environmental strategy, which support green innovation and subsequently

contribute to environmental performance, competitiveness, organizational legitimacy, and long-term industrial sustainability.

CONCLUSION

This qualitative systematic literature review examined how Corporate Social Responsibility (CSR), green innovation, and environmental practices interact to promote industrial sustainability. The findings show that these dimensions are interconnected components of an integrated sustainability system: CSR provides strategic direction, environmental practices translate commitments into operational actions, and green innovation develops solutions that reduce environmental impacts while improving competitiveness (Babiak & Trendafilova, 2011; Chang, 2011; Kraus et al., 2020).

The relationship between CSR and industrial sustainability is generally positive but context-dependent. CSR does not always directly improve environmental performance, as environmental strategy and green innovation may mediate this relationship (Kraus et al., 2020). Shahzad et al. (2020) similarly found that CSR contributes to environmental sustainability and stimulates green innovation. However, Dzage et al. (2024) showed that only employee-centered CSR significantly influenced sustainable environmental practices, indicating that CSR effectiveness depends on organizational routines, employee behavior, institutional conditions, and industrial characteristics.

Green innovation represents a critical transformation mechanism by converting environmental challenges and CSR commitments into cleaner production, environmentally friendly products, resource-efficient technologies, and improved environmental management (Albort-Morant et al., 2016; Chang, 2011). Environmental practices and sustainability strategies can stimulate green innovation, which subsequently improves environmental and competitive outcomes (Dzage et al., 2024; Shahzad et al., 2020).

Internal capabilities, including employee engagement, organizational learning, knowledge sharing, environmental strategy, and innovation capability, influence firms' ability to transform CSR commitments into measurable environmental improvements. External pressures from stakeholders, regulations, and market competition also encourage sustainability-oriented strategies and green innovation (Babiak & Trendafilova, 2011; Guoyou et al., 2013).

Overall, the review proposes an integrated pathway in which internal and external drivers stimulate CSR-oriented strategies, which are translated into environmental practices and green innovation, leading to improved environmental performance, resource efficiency, competitiveness, organizational legitimacy, and long-term industrial sustainability. Firms should therefore integrate CSR into core strategies, production processes, employee management, innovation systems, and supply chains rather than treat it as an isolated philanthropic activity (Hang et al., 2022; Seuring & Müller, 2008). The strongest sustainability outcomes emerge when CSR provides strategic direction, environmental practices enable implementation, and green innovation delivers transformational capability.

LIMITATION

Despite its theoretical and practical contributions, this qualitative systematic literature review has several limitations. First, the review is subject to database and publication coverage limitations because systematic reviews depend on selected databases, search strategies, keywords, publication types, and language criteria. Relevant studies may therefore have been excluded if they were not indexed in the selected databases, published in languages other than English, or used different terminology for the focal constructs (Snyder, 2019; Tranfield et al., 2003).

Second, the included studies are heterogeneous in terms of countries, industries, organizational characteristics, theoretical perspectives, and methodologies. Consequently, differences in the measurement and implementation of CSR, green innovation, and environmental practices limit direct comparisons, and the findings should be interpreted as thematic patterns rather than universal causal relationships.

Third, the review relies on qualitative synthesis rather than statistical meta-analysis. Although this approach provides a deeper understanding of relationships and contextual mechanisms, it does not estimate the magnitude of direct, mediating, or moderating effects. Future studies could therefore apply meta-analytic techniques to strengthen the evidence.

The review may also be affected by publication bias because studies reporting significant or theoretically interesting results are more likely to be published, potentially overrepresenting positive relationships. In addition, the evidence is concentrated in

specific developing and emerging economies, particularly Pakistan, Ghana, and Malaysia (Dzage et al., 2024; Kraus et al., 2020; Shahzad et al., 2020), limiting generalizability across different institutional and industrial contexts.

Finally, many studies rely on cross sectional and self reported data, limiting long term causal interpretation and increasing the risk of common method bias. Future research should employ longitudinal, comparative, and multi source approaches, objective environmental indicators, and examine moderating factors such as regulation, organizational size, technological capability, industry type, digital transformation, and institutional quality. These efforts would improve the generalizability and explanatory power of industrial sustainability research.

REFERENCES

- Afridi, S. A., Afsar, B., Shahjehan, A., Khan, W., Rehman, Z. U., & Khan, M. A. S. (2020). Impact of corporate social responsibility attributions on employee's extra role behaviors: Moderating role of ethical corporate identity and interpersonal trust. *Corporate Social Responsibility and Environmental Management*, 27, 1–14.
- Ahuti, S. (2015). Industrial growth and environmental degradation. *International Education and Research Journal*, 1(5), 5–7.
- Al-Abdin, A., Roy, T., & Nicholson, J. D. (2018). Researching corporate social responsibility in the Middle East: The current state and future directions. *Corporate Social Responsibility and Environmental Management*, 25, 47–65.
- Albort-Morant, G., Leal-Millán, A., & Cepeda-Carrión, G. (2016). The antecedents of green innovation performance: A model of learning and capabilities. *Journal of Business Research*, 69(11), 4912–4917.
- Alhouthi, S., & D'Souza, G. (2018). Benefits of corporate social responsibility. *Journal of Consumer Marketing*, 35 (3), 277–286.
- Andrews, N. (2016). Challenges of corporate social responsibility (CSR) in domestic settings: An exploration of mining regulation vis-à-vis CSR in Ghana. *Resources Policy*, 47, 9–17.
- Andrews, N. (2016). Challenges of CSR in domestic settings. *Resources Policy*, 47, 9–17.
- Babbie, E., & Edgerton, J. D. (2023). *Fundamentals of social research*. Cengage.
- Babiak, K., & Trendafilova, S. (2011). CSR and environmental responsibility: Motives and pressures to adopt green management practices. *Corporate Social Responsibility and Environmental Management*, 18(1), 11–24.
- Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26 (3), 197–218. <https://doi.org/10.1002/smj.441>
- Bawua, S. A., & Owusu, R. (2018). Analyzing the effect of AKOBEN program on the environmental performance of mining in Ghana: A case study of a gold mining company. *Journal of Sustainable Mining*, 17 (1), 11–19.
- Carroll, A. B. (2016). Carroll's pyramid of CSR: Taking another look. *International Journal of Corporate Social Responsibility*, 1, Article 3.

- Chang, C. H. (2011). Environmental ethics and competitive advantage. *Journal of Business Ethics*, 104, 361–370.
- Chang, C. H. (2016). Determinants of green product innovation. *Corporate Social Responsibility and Environmental Management*, 23, 65–76.
- Chang, C.-H. (2011). The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation. *Journal of Business Ethics*, 104, 361–370. <https://doi.org/10.1007/s10551-011-0914-x>
- De Roeck, K., & Farooq, O. (2018). Corporate social responsibility and ethical leadership: Investigating their interactive effect on employees' socially responsible behaviors. *Journal of Business Ethics*, 151, 923–939.
- Dzage, E. J., Hussain, M. R., Dapaah, P. O., & Mustapha, Y. (2024). Corporate social responsibility, sustainable environmental practices and green innovation: Perspectives from the Ghanaian manufacturing industry. *International Journal of Corporate Social Responsibility*, 9, Article 4. <https://doi.org/10.1186/s40991-024-00090-2>
- Fatma, M., & Rahman, Z. (2015). Consumer perspective on CSR. *Management Research Review*, 38(2), 195–216.
- Gallego-Álvarez, I., et al. (2011). CSR and innovation. *Management Decision*, 49, 1709–1727.
- Guoyou, Q., Saixing, Z., Chiming, T., Haitao, Y., & Hailiang, Z. (2013). Stakeholders' influences on corporate green innovation strategy: A case study of manufacturing firms in China. *Corporate Social Responsibility and Environmental Management*, 20(1), 1–14.
- Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq, J. (2022). Does corporate social responsibility and green product innovation boost organizational performance? A moderated mediation model of competitive advantage and green trust. *Economic Research-Ekonomska Istraživanja*, 35(1), 537–557.
- Hojnik, J., & Ruzzier, M. (2016). Drivers of eco-innovation. *Environmental Innovation and Societal Transitions*, 19, 31–41.
- Kim, K. H., Kim, M., & Qian, C. (2018). Effects of corporate social responsibility on corporate financial performance: A competitive-action perspective. *Journal of Management*, 44 (3), 1097–1118.
- Kraus, S., Rehman, S. U., & Sendra García, F. J. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, 160, 120262. <https://doi.org/10.1016/j.techfore.2020.120262>
- Kumandang, C., & Hendriyeni, N. (2021). Corporate Social Responsibility, Corporate Governance dan Manajemen Laba pada Perusahaan Manufaktur di Indonesia Tahun 2015-2019. *Journal of Management and Business Review*, 18(2), 193-208.
- Kunapatarawong, R., & Martínez-Ros, E. (2016). Green innovation and employment. *Research Policy*, 45(6), 1218–1232.
- Lopes, C. M., Scavarda, A., Hofmeister, L. F., Thomé, A. M. T., & Vaccaro, G. L. R. (2017). An analysis of the interplay between organizational sustainability, knowledge management, and open innovation. *Journal of Cleaner Production*, 142, 476–488.
- López-Gamero, M. D., et al. (2023). Environmental management and competitiveness. *CSR and Environmental Management*, 30(2), 548–562.

- Mehralian, G., Nazari, J. A., Zarei, L., & Rasekh, H. R. (2016). The effects of corporate social responsibility on organizational performance in the Iranian pharmaceutical industry: The mediating role of total quality management. *Journal of Cleaner Production*, 135, 689–698. <https://doi.org/10.1016/j.jclepro.2016.06.116>
- Muhammad Rizal, Ruslaini Ruslaini, & Eri Kusnanto. (2022). Peran Regulasi dalam Mendorong Adopsi Cloud Computing UMKM DKI Jakarta. *Journal of Business, Finance, and Economics* (JBFE), 3(1), 130–136.
- Öberseder, M., Schlegelmilch, B. B., & Murphy, P. E. (2013). CSR practices and consumer perceptions. *Journal of Business Research*, 66 (10), 1839–1851.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Panwar, R., et al. (2016). Competitive strategies and sustainability. *Journal of Cleaner Production*, 129, 578–585.
- Ruslaini Ruslaini, & Eri Kusnanto. (2020). Sustainability Dalam Rantai Pasok Global: Tinjauan Literatur Dari Perspektif Bisnis Internasional dan Manajemen Rantai Pasok. *Journal of Business, Finance, and Economics* (JBFE), 1(2).
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699–1710.
- Shahzad, M., Qu, Y., Javed, S. A., Zafar, A. U., & Rehman, S. U. (2020). Relation of environment sustainability to CSR and green innovation: A case of Pakistani manufacturing industry. *Journal of Cleaner Production*, 253, 119938. <https://doi.org/10.1016/j.jclepro.2019.119938>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Song, W., & Yu, H. (2018). Green innovation strategy and green innovation: The roles of green creativity and green organizational identity. *Corporate Social Responsibility and Environmental Management*, 25 (2), 135–150.
- Tran, K. T., & Nguyen, P. V. (2020). CSR in industry context. *Sustainability*, 12(3).
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>
- Turker, D. (2009). Measuring CSR. *Journal of Business Ethics*, 85, 411–427.
- Yu, W., Ramanathan, R., & Nath, P. (2017). Environmental pressures and performance: An analysis of the roles of environmental innovation strategy and marketing capability. *Technological Forecasting and Social Change*, 117, 160–169.
- Zelazna, A., et al. (2020). CSR and environmental responsibility. *Sustainability*, 12(11).