

Sustainable Business Strategies: The Role of EHS in Driving Long-term Value Creation

<https://www.doi.org/10.56830/WRBA07202501>

Abdulelah Alnafisah 

Assistant Professor, Business Administration Department, College of Administration and Financial Science, Saudi Electronic University, Dammam, KSA

a.alnafisah@seu.edu.sa

Daifallah Alzahrani

Business Administration Department, College of Administration and Financial Science, Saudi Electronic University, Dammam, KSA

Abstract

This research investigates the strategic role of Environmental, Health, and Safety (EHS) programs within sustainable business strategies and their contribution to long-term value creation. In an era where organizations face increasing pressure from stakeholders, regulators, and consumers to demonstrate their commitment to environmental and social responsibility, EHS programs have evolved beyond their traditional role of compliance into powerful tools for achieving sustainable growth. The study examines the petrochemical industry in Saudi Arabia during 2024-2025, offering insights into how EHS can be integrated into broader corporate objectives to enhance financial performance, improve corporate reputation, mitigate risks, and foster innovation. Through quantitative analysis of survey data from 290 industry professionals, the research identifies a significant relationship between EHS initiatives and corporate reputation and stakeholder confidence, while revealing areas where the connection between EHS and other business outcomes requires further development. The findings provide both theoretical contributions to sustainability discourse and practical implications for business leaders seeking to leverage EHS as a strategic enabler of long-term value creation.

Keywords: Environmental Health and Safety, Sustainable Business Strategies, Long-term Value Creation, Corporate Reputation, Stakeholder Confidence

1. Introduction

1.1 Background

Sustainable business strategies have become increasingly critical in today's corporate landscape, where organizations are facing growing pressures from stakeholders, governments, and consumers to adopt practices that promote long-term profitability and address environmental, social, and governance (ESG) concerns. Among the various components that contribute to sustainability, Environmental, Health, and Safety (EHS) programs play a significant role in driving long-term value creation (Abatan, et al., 2024). These programs aim to minimize the negative impacts of business

activities on the environment and human health while promoting safe and responsible practices across all operations. EHS strategies are not only essential for regulatory compliance but also provide a competitive advantage by enhancing corporate reputation, improving operational efficiencies, and ensuring risk mitigation (Nosratabadi, Mosavi, Shamshirband, Zavadskas, Rakotonirainy, & Chau, 2019). As sustainability becomes a central focus in corporate governance, the importance of EHS programs has gained momentum in driving organizational success and ensuring business resilience in the face of increasing environmental challenges.

While numerous studies have explored the connection between sustainability and business performance, few have thoroughly examined the integral role of EHS programs in promoting long-term value creation. Much of the existing literature has focused on isolated sustainability initiatives, such as waste management, carbon reduction, and workplace safety. However, there is limited research on how EHS strategies, when integrated into broader business operations, can drive systemic and sustainable change within organizations (Haseeb, Hussain, Kot, Androniceanu, & Jermisittiparsert, 2019). Many organizations still operate in silos, treating EHS as a compliance-driven function rather than a strategic asset. This gap in the literature presents an opportunity for this study to explore how EHS strategies can be leveraged to create tangible business value. By focusing on the ways in which EHS programs contribute to long-term value creation, this research aims to contribute to the broader discourse on sustainable business practices and offer actionable insights for organizations looking to integrate EHS more effectively into their strategic goals.

1.2 Problem Statement

The problem addressed by this research revolves around the limited understanding of how Environmental, Health, and Safety (EHS) programs can be effectively integrated into broader sustainable business strategies to drive long-term value creation. While many organizations have established EHS programs to ensure regulatory compliance and safeguard their operations from environmental and health-related risks, there is a significant gap in the literature regarding how these programs can be leveraged strategically to generate lasting business value. Existing research primarily focuses on the operational and compliance aspects of EHS, often treating it as a reactive function rather than a proactive strategy that contributes to overall business performance. This narrow focus fails to recognize the potential of EHS in driving innovation, enhancing organizational resilience, and improving stakeholder relationships. Furthermore, despite the growing emphasis on sustainability in business practices, few studies have explored the direct link between EHS initiatives and sustainable business outcomes, particularly in terms of financial growth, brand equity, and competitive advantage.

1.3 Research Objectives

This study aims to:

- Analyze the impact of EHS programs on financial performance and long-term business profitability
- Evaluate the role of EHS programs in enhancing corporate reputation and stakeholder trust

- Assess how EHS initiatives contribute to operational efficiency and risk mitigation
- Examine the influence of EHS strategies on fostering innovation and competitive advantage

1.4 Research Questions

- How do EHS programs influence financial performance and long-term business profitability?
- In what ways do EHS initiatives enhance corporate reputation and stakeholder trust?
- How do EHS programs contribute to operational efficiency and risk mitigation?
- What is the role of EHS strategies in fostering innovation and competitive advantage?

1.5 Research Hypotheses

Based on the research objectives, four hypotheses were formulated:

- H1: There is a statistically significant relationship between health, safety and environment programs and financial performance and long-term business profitability
- H2: There is a statistically significant relationship between health, safety and environment initiatives and corporate reputation and stakeholder confidence
- H3: There is a statistically significant relationship between health, safety and environment programs and operational efficiency and risk mitigation
- H4: There is a statistically significant relationship between health, safety and environment strategies and innovation and competitive advantage

2. Literature Review

The integration of Environmental, Health, and Safety (EHS) programs into sustainable business strategies has been explored in several studies, although much of the literature focuses on either the individual elements of EHS or the broader concept of sustainability without addressing the synergies between the two. A number of studies highlight the significance of EHS in corporate governance and its role in risk management, emphasizing the need for businesses to mitigate environmental and health risks to ensure compliance with increasingly stringent regulations. Studies (Cosenz, Rodrigues, & Rosati, 2020) argue that EHS programs are crucial for businesses to comply with regulatory frameworks, but their effectiveness in generating long-term value remains understudied. Similarly, research by Bocken et al. (2019) demonstrates that while EHS programs may enhance organizational safety and minimize environmental damage, their direct connection to overall business value creation is often unclear, with a predominant focus on minimizing risks rather than fostering opportunities for growth.

2.1 The Role of EHS in Corporate Governance and Risk Management

Corporate governance and risk management now revolve around Environment, Health, and Safety (EHS) initiatives, which are critical to shaping organizational strategy. Modern companies

operate in an environment where stakeholder expectations and regulatory standards are rapidly changing, requiring a shift from traditional compliance-oriented approaches to more comprehensive and proactive EHS systems (Schoenmaker & Schramade, 2019). Companies that neglect to include EHS issues in their corporate governance systems often suffer significantly in terms of finance, legitimacy, and reputation. A study by (Mio, Costantini, & Panfilo, 2022) shows that companies that have EHS policies well embedded in their governance structures not only reduce the risk of fines and legal penalties but also improve operational stability and long-term resilience.

Growing amounts of studies show how crucial it is to include EHS ideas into business governance to enhance risk management and mitigating techniques. Although risk management has always been linked with financial and operational risks, new research indicate that environmental and safety hazards are as important in deciding the long-term survival of a business (Bocken, Boons, & Baldassarre, 2018). Companies which include EHS into their Enterprise Risk Management (ERM) systems are more suited to spot possible risks before they become crises. Companies in high-risk sectors such manufacturing, energy, and construction, for instance, have been progressively using predictive analytics and digital monitoring systems to instantly identify environmental and safety hazards.

2.2 The Link Between EHS and Financial Performance

As companies try to strike a balance between sustainability goals and profitability, the link between Environmental, Health, and Safety (EHS) initiatives and corporate financial performance has attracted more and more interest in recent years (Ibrahim, Ibrahim, & Hussain, 2023). Companies have always seen EHS programs mostly as compliance tools meant to satisfy legal requirements and prevent fines. Modern studies, however, indicate that intelligently combined EHS initiatives can be rather effective agents of financial success. Companies who aggressively support environmental sustainability, worker safety, and health management often see long-term financial gains going beyond simple compliance (Ebaid, 2023).

By controlling costs and operational efficiency, one of the most important ways that EHS programs support financial success is through companies that adopt environmentally friendly policies such as resource optimization, waste reduction programs, and energy-efficient technology that will significantly save on their operating expenses. Companies that use EHS-based efficiency initiatives have cheaper material prices, lower energy usage, and better manufacturing processes. Furthermore, occupational safety programs are a vital part of EHS, helping to save money by reducing employee absenteeism, medical expenses, and compensation claims (Ahinful, 2018).

Strong EHS programs boost firm financial success by raising investor trust and increasing access to financing, hence transcending internal cost reductions (Wiengarten, Fan, Pagell, & Lo, 2019). Environmental, Social, and Governance (ESG) factors have grown to be a major factor influencing investment decisions in recent years; institutional investors and financial analysts give firms with high sustainability credentials top priority. Studies reveal that companies with strong ESG ratings—those which include strong EHS policies—often have reduced capital costs and better valuation multiples (Ilelaboye & Alade, 2022).

2.3 EHS as a Driver of Corporate Reputation and Stakeholder Trust

With Environmental, Health, and Safety (EHS) initiatives progressively influencing public opinion and stakeholder confidence, corporate reputation has become a major determinant of the success and lifetime of companies. Consumers, investors, government agencies, and local communities examine company operations more closely than ever in the modern corporate environment, making companies answerable for their environmental effect, workplace safety policies, and general social responsibility (Adikwu, Ozobu, Odujobi, Onyekwe, & Nwulu, 2023). Businesses that proactively include EHS practices into their corporate models usually build good reputations, attract devoted consumers, and preserve good rapport with important stakeholders.

Beyond consumer impression, EHS initiatives significantly affect business reputation and are thus very important in forming investor confidence. When making financial decisions in the age of socially conscious investment, stakeholders give environmental and safety performance more and more thought. Investors understand that businesses with strong EHS practices are less likely to be liable financially from legal non-compliance, workplace accidents, or environmental problems (Thoti, Pasha, Shankar, Yaziz, & Uday, 2024). Companies who neglect EHS projects can find diminishing stock values, more government scrutiny, and trouble getting finance.

2.4 The Impact of EHS on Innovation and Competitive Advantage

As companies realize the strategic potential of proactive EHS strategies, Environmental, Health, and Safety (EHS) management has attracted a lot of interest lately in helping to create innovation and competitive advantage. EHS programs have concentrated mostly on guaranteeing regulatory compliance and reducing hazards to the environment and health. Nonetheless, an increasing amount of studies shows that EHS offers companies a way to improve operational efficiency and stimulate innovation, thereby transcending its conventional function (Al-Shami & Rashid, 2022).

Through its impact on product and process development, EHS is one of the main means in which it may inspire creativity. Businesses who make investments in sustainable product designs, cleaner manufacturing technologies, and circular economy ideas often find creative ideas that not only satisfy legal needs but also appeal to the rising customer demand for environmentally and socially conscious goods. Moreover, a main driver of competitive advantage might be the inclusion of EHS issues into research and development (R&D) operations. Studies show that companies including EHS elements into their R&D activities are more likely to reach discoveries in resource efficiency, pollution reduction, and sustainable product creation (Wang, Liu, & Zhang, 2021).

2.5 Challenges and Future Directions in EHS Integration

Although several obstacles still prevent Environmental, Health, and Safety (EHS) initiatives from being fully adopted and implemented, their inclusion into company plans has great advantages. The most important obstacle is the general view of EHS as a cost center instead than a strategic investment. Many companies, especially those with an eye toward short-term financial success, see EHS programs as statutory responsibilities that incur extra expenses without appreciable benefits

(Heacock, et al., 2022). This kind of thinking sometimes causes decision-makers to be reluctant to provide enough funds for EHS initiatives, therefore reducing their efficacy.

The difficulty of including EHS systems throughout worldwide supply chains—especially for multinational companies functioning in different regulatory environments—adds even another obstacle. Companies with large supply chains have to negotiate different national and regional rules, different degrees of EHS compliance depending on culture, and varied degrees of enforcement. This variance makes it challenging to create uniform regulations and guarantee consistent application throughout all sites (Stabilini, et al., 2024).

3. Methodology

3.1 Research Design and Approach

This research adopts a quantitative approach to systematically analyze the role of EHS programs in long-term value creation. A cross-sectional survey design was employed, capturing data at a specific point in time to assess the current state of EHS implementation and its impact on business outcomes. The study focuses on petrochemical companies in Saudi Arabia, selected due to the industry's high environmental and safety risks and the country's emphasis on sustainable development through Vision 2030.

3.2 Population and Sample

The target population consisted of EHS managers, sustainability officers, and decision-makers in petrochemical companies in Saudi Arabia. These individuals were selected based on their direct involvement in implementing and overseeing EHS programs. Using purposive sampling, 290 respondents were selected from various departments and management levels within the petrochemical industry. The sample size was considered sufficient to extract useful insights while maintaining a manageable scope for data collection and analysis.

3.3 Data Collection

Data were collected using a structured questionnaire comprising multiple sections that addressed critical dimensions of Environmental, Health, and Safety (EHS) implementation. These dimensions included regulatory compliance, risk management, sustainability impact, and business performance. A 5-point Likert scale (ranging from 1 = Strongly Agree to 5 = Strongly Disagree) was employed to measure participants' perceptions and experiences quantitatively. To enhance accessibility and maximize the response rate, the survey was administered electronically. The final sample consisted of 487 respondents.

3.4 Data Analysis

The collected data was analyzed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including mean, standard deviation, frequency distribution, and percentages, were used to summarize and interpret the demographic and general response data. Inferential

statistical analysis was conducted to test the research hypotheses using regression analysis to examine relationships between EHS practices and various dimensions of long-term value creation.

3.5 Reliability and Validity

To ensure reliability and validity, the questionnaire was subjected to Cronbach's alpha testing. The total Cronbach's alpha coefficient for the entire questionnaire was 0.813, indicating an acceptable degree of reliability. Content validity was achieved by designing the questionnaire in alignment with established theoretical frameworks and industry best practices.

4. Results and Analysis

4.1 Demographic Characteristics

The study sample demonstrated strong representation from experienced professionals in the petrochemical industry. The majority of participants (85.1%) fell within the 26-45 age range, with 44.1% aged 36-45 years and 41.0% aged 26-35 years. Male participants comprised 75.2% of the sample, while female participants made up 24.8%. In terms of education, 59.0% held bachelor's degrees, 20.3% had master's degrees, and 16.9% possessed diplomas. Regarding industry experience, 34.0% had 6-10 years of experience, 22.6% had 1-5 years, and 21.9% had 11-15 years of experience. The majority of respondents (54.5%) worked in companies with 1,001-5,000 employees, indicating strong representation from medium to large-sized organizations.

4.2 EHS Practices Assessment

The assessment of Health, Safety, and Environment (EHS) practices revealed generally positive perceptions among respondents. The highest-ranked statement was "Employees receive regular training on health, safety, and environmental policies" (Mean = 2.41, SD = 0.648), indicating strong agreement with training initiatives. "Environmental sustainability is a priority in my company's operations" ranked second (Mean = 2.39, SD = 0.543), reflecting consensus on sustainability importance. "The company invests in advanced safety technologies to prevent workplace hazards" received the third-highest rating (Mean = 2.35, SD = 0.560), suggesting favorable perceptions of proactive safety investments.

The overall mean score for EHS practices was 2.28 (SD = 0.296), with the general direction of responses being "Agree." This indicates a positive organizational climate regarding EHS, with strong perceptions in areas like training and sustainability. However, relatively lower rankings for audits and emergency response communication point to opportunities for increased transparency and engagement in those domains.

4.3 Long-term Value Creation Dimensions

4.3.1 Financial Performance and Long-term Business Profitability

The analysis of financial performance and long-term business profitability revealed moderate agreement among participants. The highest-ranked statement was "Strong EHS performance enhances the company's reputation, leading to increased market opportunities" (Mean = 2.30, SD = 0.526).

"Implementing EHS initiatives leads to cost savings through improved resource efficiency" ranked second (Mean = 2.27, SD = 0.470), reflecting belief in the economic efficiency resulting from EHS initiatives.

The overall dimension yielded a mean score of 2.51 (SD = 0.648), reflecting general agreement among participants. These findings suggest that respondents perceive a positive link between EHS efforts and business profitability, particularly in areas like cost savings, reputation enhancement, and operational stability.

4.3.2 Company Reputation and Stakeholder Confidence

The company reputation and stakeholder confidence dimension showed consistent agreement among respondents. The highest-rated statement was "Transparency in sustainability reports strengthens stakeholder confidence" (Mean = 2.29, SD = 0.495). Two statements tied for second place: "Customers prefer products from companies with strong sustainability initiatives" and "Customers prefer products from companies with strong EHS policies" (both Mean = 2.25).

The overall mean for this dimension was 2.21 (SD = 0.253), indicating high consensus and general agreement among respondents. These findings emphasize that EHS and sustainability practices are perceived to positively impact both customer behavior and stakeholder confidence.

4.3.3 Operational Efficiency and Risk Mitigation

The operational efficiency and risk mitigation dimension revealed interesting patterns in responses. The highest-ranked statement was "EHS policies increase operational delays" (Mean = 2.83, SD = 1.011), indicating agreement but with high variability. This suggests that while many participants perceive EHS policies as contributing to operational delays, opinions are divided.

"Implementing EHS measures reduces workplace incidents and associated costs" and "Integrating environmental policies improves resource efficiency" both received means of 2.26 (SD = 0.438), indicating strong agreement on the preventive and efficiency benefits of EHS interventions.

The overall dimension yielded a mean score of 2.50 (SD = 0.676), reflecting general agreement among respondents. These findings suggest that while employees acknowledge the operational and legal benefits of EHS, perceptions vary regarding potential operational trade-offs.

4.3.4 Innovation and Competitive Advantage

The innovation and competitive advantage dimension produced mixed results. The highest-ranked statement was "Investing in EHS limits our ability to innovate" (Mean = 3.04, SD = 1.093), indicating moderate agreement with notable variability. This suggests that some respondents perceive EHS investment as a constraint on innovation, though views are divided.

"Sustainable practices differentiate the company from competitors" scored a mean of 2.33 (SD = 0.557), indicating general agreement on the strategic value of sustainability in gaining competitive edge. "EHS policies encourage technological innovation in operations" ranked fourth (Mean = 2.32, SD = 0.488), suggesting shared belief that EHS frameworks can stimulate operational innovation.

The overall dimension produced a mean score of 2.62 (SD = 0.756), indicating moderate agreement. These results suggest that while participants generally appreciate the competitive value of EHS integration, concerns about cost and innovation trade-offs still exist.

4.4 Hypothesis Testing Results

Regression analysis was conducted to test the four research hypotheses. The results revealed varying relationships between EHS practices and different dimensions of long-term value creation:

Hypothesis 1 (Financial Performance): The analysis revealed no statistically significant relationship between EHS programs and financial performance ($R^2 = 0.001$, $p = 0.600$). The results suggest that EHS practices do not appear to have a meaningful influence on long-term business profitability within this study context.

Hypothesis 2 (Corporate Reputation): A statistically significant relationship was found between EHS initiatives and corporate reputation and stakeholder confidence ($R^2 = 0.042$, $p = 0.002$). The coefficient for EHS practices was 0.174 with a t-value of 3.129, supporting the significance of the impact.

Hypothesis 3 (Operational Efficiency): No statistically significant relationship was found between EHS programs and operational efficiency or risk mitigation ($R^2 = 0.001$, $p = 0.587$). The findings imply that EHS programs do not have a meaningful effect on improving operational efficiency or mitigating risks in this context.

Hypothesis 4 (Innovation and Competitive Advantage): No statistically significant relationship was found between EHS strategies and innovation or competitive advantage ($R^2 = 0.002$, $p = 0.450$). The results suggest that EHS strategies do not significantly influence innovation or provide competitive advantage within this study.

5. Discussion

The analysis of Environmental, Health, and Safety (EHS) practices highlights the growing recognition of sustainability and corporate responsibility as key drivers of long-term value creation. As (Cosenz, Rodrigues, & Rosati, 2020) suggest, businesses adopting sustainable practices are better positioned to maintain long-term profitability, with sustainability becoming integral to their business models. EHS practices, especially those that focus on sustainability reporting and resource efficiency, contribute significantly to the competitive advantage of companies in the petrochemical industry (Geissdoerfer, Vladimirova, & Evans, 2018). The survey results from this study align with this argument, as a majority of respondents emphasized the importance of sustainability efforts in driving financial and operational success.

The significant relationship found between EHS initiatives and corporate reputation and stakeholder confidence supports the existing literature on the reputational benefits of sustainability practices. As (Geissdoerfer, Vladimirova, & Evans, 2018) argue, sustainability-oriented business model innovation relies heavily on transparent communication with stakeholders to build trust and ensure alignment with corporate goals. The results of this survey reflect a growing recognition among

participants that transparent sustainability reports are vital for fostering stakeholder confidence. Companies that excel in EHS practices often do so by clearly communicating their efforts, as suggested by (Epstein, 2018), who emphasizes the importance of integrating sustainability into corporate strategy and reporting to enhance stakeholder relationships.

The lack of significant relationships between EHS practices and financial performance, operational efficiency, and innovation presents interesting findings that diverge from some established literature. This could be attributed to several factors. First, many of the benefits derived from EHS strategies are long-term, intangible, or indirect, such as enhanced brand image, regulatory compliance, risk mitigation, and improved employee morale—all of which can influence profitability over time but may not immediately register in standard financial indicators. Second, the current implementation of EHS practices in the observed organizations may not be sufficiently integrated with broader innovation or operational frameworks.

The study's findings regarding operational efficiency reveal a complex relationship between EHS implementation and operational performance. While respondents acknowledged that EHS measures reduce workplace incidents and improve resource efficiency, they also indicated that EHS policies can increase operational delays. This reflects the challenges discussed by (Gelmez, Özceylan, & Mrugalska, 2024) regarding the balance between regulatory compliance and operational agility. The emphasis on legal and regulatory compliance as a key benefit of EHS practices highlights their importance in safeguarding companies against potential legal and reputational risks, aligning with the broader body of literature that suggests proactive EHS measures strengthen a company's position within its industry.

6. Conclusion

This research provides valuable insights into the complex relationship between Environmental, Health, and Safety (EHS) programs and long-term value creation in the petrochemical industry. While the study did not find statistically significant relationships between EHS practices and financial performance, operational efficiency, or innovation and competitive advantage, it did reveal a compelling link between EHS initiatives and corporate reputation and stakeholder confidence. This divergence highlights the complexity of assessing the value of EHS interventions, especially when attempting to quantify their direct financial or operational impacts.

The findings suggest that many of the benefits derived from EHS strategies are long-term, intangible, or indirect, such as enhanced brand image, regulatory compliance, risk mitigation, and improved employee morale—all of which can influence profitability over time but may not immediately register in standard financial indicators. Additionally, the current implementation of EHS practices in the observed organizations may not be sufficiently integrated with broader innovation or operational frameworks, which could explain the lack of significant statistical relationships in those areas.

The research contributes to the growing body of evidence that emphasizes the reputational and social capital gains of proactive EHS investment, particularly in contexts where stakeholders are

more attuned to environmental and social governance practices. The study affirms that while not all benefits of EHS programs are immediately measurable through financial or operational metrics, their contribution to organizational legitimacy and sustainability remains both significant and strategic.

Given the increasingly dynamic and competitive business environment, these results suggest that companies should consider reframing how they perceive and utilize EHS strategies. Rather than viewing EHS solely as a regulatory necessity or an ethical obligation, organizations might benefit from embedding it more deeply into their strategic and operational models. By doing so, EHS can serve not just as a mechanism for managing risks, but as a catalyst for building stakeholder trust and long-term resilience.

6.1 Recommendations

Based on the research findings, several recommendations emerge for organizations seeking to maximize the value of their EHS investments:

1. **Strategic Integration:** Organizations should embed EHS programs into their long-term strategic objectives to enhance alignment with corporate goals and ensure that sustainability considerations are integrated into all business decisions.
2. **Stakeholder Communication:** Given the strong relationship between EHS and stakeholder confidence, companies should use EHS initiatives as a core part of their brand and reputation-building strategies, clearly communicating efforts and achievements to both internal and external stakeholders.
3. **Long-term Perspective:** Implement longitudinal tracking systems to better assess the delayed financial and operational benefits of EHS practices, recognizing that many benefits may not be immediately apparent in short-term metrics.
4. **Innovation Integration:** Encourage innovation within EHS programs by integrating them into R&D and product development activities to discover new ways of enhancing efficiency and compliance while driving competitive advantage.
5. **Cultural Development:** Foster an organizational culture that values safety, environmental responsibility, and continuous improvement to ensure EHS becomes an intrinsic part of corporate identity rather than merely a compliance function.

6.2 Limitations and Future Research

This study is subject to several limitations that should be acknowledged. The geographical constraint to Saudi Arabia's petrochemical industry may limit the generalizability of results to other regions or industrial contexts. The cross-sectional design captures data at a specific point in time, potentially missing the long-term benefits of EHS investments. Additionally, the reliance on self-reported data may introduce response bias.

Future research should explore longitudinal approaches to capture the long-term benefits of EHS investments, expand to multiple industries and geographic regions, and incorporate qualitative

methods to gain deeper insights into the mechanisms through which EHS creates value. Research should also investigate how different organizational contexts and implementation approaches affect the relationship between EHS and business outcomes.

References

- Abatan, A., Jacks, B. S., Ugwuanyi, E. D., Nwokediegwu, Z. Q., Obaigbena, A., Daraojimba, A. I., et al. (2024). The role of environmental health and safety practices in the automotive manufacturing industry. *Engineering Science & Technology Journal*, 5(2), 531-542.
- Adikwu, F. E., Ozobu, C. O., Odujobi, O., Onyekwe, F. O., & Nwulu, E. O. (2023). Advances in EHS compliance: A conceptual model for standardizing health, safety, and hygiene programs across multinational corporations.
- Ahinful, G. (2018). The relationship between environmental management practices and financial performance of Ghanaian SMEs. (*Doctoral dissertation, Bournemouth University*).
- Al-Shami, S., & Rashid, N. (2022). A holistic model of dynamic capabilities and environment management system towards eco-product innovation and sustainability in automobile firms. *Journal of Business & Industrial Marketing*, 37(2), 402-416.
- Bocken, N., Boons, F., & Baldassarre, B. (2018). Sustainable business model experimentation by understanding ecologies of business models. *Journal of Cleaner Production*, 208, 1498-1512.
- Cosenz, F., Rodrigues, V. P., & Rosati, F. (2020). Dynamic business modeling for sustainability: Exploring a system dynamics perspective to develop sustainable business models. *Business Strategy and the Environment*, 29(2), 651-664.
- Ebaid, I. E. (2023). Nexus between sustainability reporting and corporate financial performance: Evidence from an emerging market. *International Journal of Law and Management*, 65(2), 152-171.
- Epstein, M. J. (2018). Making sustainability work: Best practices in managing and measuring corporate social, environmental and economic impacts. *Routledge*.
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401-416.
- Gelmez, E., Özceylan, E., & Mrugalska, B. (2024). The Impact of Green Supply Chain Management on Green Innovation, Environmental Performance, and Competitive Advantage. *Sustainability*, 16(22), 9757.
- Haseeb, M., Hussain, H. I., Kot, S., Androniceanu, A., & Jermisittiparsert, K. (2019). Role of social and technological challenges in achieving a sustainable competitive advantage and sustainable business performance. *Sustainability*, 11(14), 3811.
- Heacock, M. L., Lopez, A. R., Amolegbe, S. M., Carlin, D. J., Henry, H. F., Trottier, B. A., et al. (2022). Enhancing data integration, interoperability, and reuse to address complex and

- emerging environmental health problems. *Environmental Science & Technology*, 56(12), 7544-7552.
- Ibrahim, R., Ibrahim, Y. K., & Hussain, M. S. (2023). Environmental reporting and financial performance of listed industrial and consumer goods firms in Nigeria. *FUDMA Journal of Accounting and Finance Research*, 1(2), 123-140.
- Ilelaboye, C. S., & Alade, M. E. (2022). Environmental accounting and financial performance of listed family-owned companies in Nigeria. *International Review of Business and Economics*, 6(1), 18.
- Mio, C., Costantini, A., & Panfilo, S. (2022). Performance measurement tools for sustainable business: A systematic literature review on the sustainability balanced scorecard use. *Corporate Social Responsibility and Environmental Management*, 29(2), 367-384.
- Nosratabadi, S., Mosavi, A., Shamshirband, S., Zavadskas, E. K., Rakotonirainy, A., & Chau, K. W. (2019). Sustainable business models: A review. *Sustainability*, 11(6), 1663.
- Schoenmaker, D., & Schramade, W. (2019). Investing for long-term value creation. *Journal of Sustainable Finance & Investment*, 9(4), 356-377.
- Stabilini, C., Antoniou, S., Berrevoet, F., Boormeester, M., Bracale, U., de Beaux, A., et al. (2024). ENGINE—An EHS Project for Future Guidelines. *Journal of Abdominal Wall Surgery*, 3, 13007.
- Thoti, K. K., Pasha, M. A., Shankar, C. U., Yaziz, M. F., & Uday, M. (2024). An Analysis Examining the Way Supply Chain Management-Focused Third-Party Environmental Audits Contributed to Business Sustainability Efforts. *Economic Sciences*, 20(2), 177-189.
- Wang, J., Liu, H., & Zhang, Y. (2021). Green innovation and firm performance: The role of environmental management systems. *Journal of Cleaner Production*, 285, 124811.
- Wiengarten, F., Fan, D., Pagell, M., & Lo, C. K. (2019). Deviations from aspirational target levels and environmental and safety performance: Implications for operations managers acting irresponsibly. *Journal of Operations Management*, 65(6), 490-516.