

The Contribution of Environmental Awareness and Green Innovation to Business Sustainability in the Cosmetics Industry in West Java

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Article Info	ABSTRAK
<i>Article history:</i> Received Aug, 2026 Revised Aug, 2026 Accepted Aug, 2026	Meningkatnya tantangan lingkungan di industri kosmetik telah mendorong pelaku usaha untuk mengadopsi strategi berkelanjutan melalui tanggung jawab lingkungan dan pendekatan berbasis inovasi. Penelitian ini bertujuan untuk menganalisis kontribusi kesadaran lingkungan dan inovasi hijau terhadap keberlanjutan bisnis di industri kosmetik Jawa Barat. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei yang melibatkan 155 responden dari pelaku usaha kosmetik di Jawa Barat. Data dikumpulkan melalui kuesioner dengan skala Likert lima poin dan dianalisis menggunakan SPSS versi 25. Teknik analisis data meliputi uji validitas, uji reliabilitas, uji asumsi klasik, analisis regresi linear berganda, uji-t, uji-F, dan analisis koefisien determinasi. Hasil penelitian menunjukkan bahwa kesadaran lingkungan berpengaruh positif dan signifikan terhadap keberlanjutan bisnis, yang mengindikasikan bahwa perusahaan dengan komitmen lingkungan yang lebih kuat cenderung mencapai kinerja bisnis jangka panjang yang lebih baik. Selain itu, inovasi hijau juga berpengaruh positif dan signifikan terhadap keberlanjutan bisnis, dengan kontribusi yang lebih besar dibandingkan kesadaran lingkungan, melalui penerapan produk ramah lingkungan, kemasan berkelanjutan, dan proses produksi yang efisien. Uji simultan mengonfirmasi bahwa kesadaran lingkungan dan inovasi hijau secara signifikan memengaruhi keberlanjutan bisnis, serta menjelaskan 50,1% variasi dalam kinerja bisnis berkelanjutan. Penelitian ini menyoroti bahwa integrasi kesadaran lingkungan dan strategi inovasi hijau sangat penting bagi pelaku usaha kosmetik di Jawa Barat untuk mencapai daya saing berkelanjutan dan ketahanan organisasi jangka panjang.
<i>Kata Kunci:</i> Kesadaran Lingkungan, Inovasi Ramah Lingkungan, Keberlanjutan Bisnis, Industri Kosmetik, Praktik Bisnis Berkelanjutan	
<i>Keywords:</i> Environmental Awareness, Green Innovation, Business Sustainability, Cosmetics Industry, Sustainable Business Practices	
	ABSTRACT The increasing environmental challenges in the cosmetics industry have encouraged businesses to adopt sustainable strategies through environmental responsibility and innovation-based approaches. This study aims to analyze the contribution of environmental awareness and green innovation to business sustainability in the cosmetics industry in West Java. This research employed a quantitative approach using a survey method involving 155 respondents from cosmetics businesses in West Java. Data were collected through questionnaires measured using a five-point Likert scale and analyzed using SPSS version 25. The data analysis techniques included validity testing, reliability testing, classical assumption testing, multiple linear regression analysis, t-test, F-test, and coefficient of determination analysis. The results indicate that environmental awareness has a

positive and significant effect on business sustainability, demonstrating that companies with stronger environmental commitment tend to achieve better long-term business performance. Furthermore, green innovation also has a positive and significant effect on business sustainability, with a stronger contribution compared to environmental awareness through the implementation of environmentally friendly products, sustainable packaging, and efficient production processes. The simultaneous test confirms that environmental awareness and green innovation significantly influence business sustainability, explaining 50.1% of the variation in sustainable business performance. This study highlights that integrating environmental consciousness and green innovation strategies is essential for cosmetics businesses to achieve sustainable competitiveness and long-term organizational resilience in West Java.

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1. INTRODUCTION

The cosmetics industry has emerged as one of the fastest-growing consumer sectors globally, driven by increasing awareness of personal appearance, changing lifestyle patterns, technological advancement, and the expansion of beauty-oriented markets. This rapid growth has created substantial economic opportunities for cosmetics manufacturers by encouraging product diversification, innovation, and market expansion (Almeida & Melo, 2017; Ching-Pong Poo et al., 2024). However, the increasing scale of cosmetics production and consumption has simultaneously intensified environmental pressures associated with excessive packaging waste, resource depletion, chemical pollution, and carbon emissions throughout the product lifecycle. These environmental challenges have shifted the strategic orientation of the cosmetics industry from conventional growth-based approaches toward sustainability-oriented business models that integrate economic performance with ecological responsibility (Karami, 2022; Kawa et al., 2013; Setiabudi & Sukaris, 2022). Consequently, cosmetics companies are increasingly required to develop strategies that enable them to maintain competitiveness while reducing environmental impacts and responding to growing stakeholder expectations regarding sustainable practices.

Sustainability has become a fundamental paradigm in contemporary business management as organizations are increasingly evaluated not only through financial outcomes but also through their environmental and social contributions. The concept of business sustainability emphasizes the ability of firms to achieve long-term performance by balancing economic objectives, environmental preservation, and stakeholder interests (Aldianto et al., 2021; Bican & Brem, 2020; K. Zhao et al., 2023). Within the cosmetics industry, sustainability implementation is reflected through various practices, including the adoption of sustainable raw materials, eco-friendly packaging, waste reduction strategies, responsible supply chain management, and environmentally efficient production systems. Companies that successfully integrate sustainability principles into their operational strategies are more likely to enhance corporate reputation, strengthen consumer loyalty, improve resource efficiency, and achieve long-term competitive advantages (Gao et al., 2023; Kim & Lim, 2017; Zayed et al., 2022). Therefore, understanding the strategic factors that contribute to business sustainability has become increasingly important, particularly in industries characterized by high consumption intensity and significant environmental impacts.

One critical determinant that influences organizational sustainability performance is environmental awareness. represents the extent to which organizations recognize environmental challenges and incorporate ecological considerations into managerial decision-making processes. Firms with stronger environmental awareness are more likely to identify environmental risks, comply with sustainability regulations, and develop initiatives aimed at minimizing negative ecological consequences. In the cosmetics sector, environmental awareness can encourage companies to transform traditional production practices by adopting cleaner technologies, reducing material waste, improving energy efficiency, and implementing environmentally responsible operational policies. Furthermore, environmental (Lamperti et al., 2023; Naeem et al., 2023; Omer, 2008)awareness can function as a strategic capability that shapes organizational commitment toward sustainability objectives. Previous studies have demonstrated that environmentally conscious organizations tend to exhibit greater willingness to adopt green practices; however, the extent to which environmental awareness contributes directly to business sustainability within the cosmetics industry remains insufficiently explored, particularly in emerging market contexts (Hamoudi & Avilés-Palacios, 2022; Iftikhar et al., 2022; Naeem et al., 2023).

Beyond environmental awareness, green innovation has become an essential mechanism through which companies translate sustainability intentions into practical business strategies. Green innovation refers to the development and implementation of environmentally oriented products, processes, technologies, and organizational practices designed to reduce ecological impacts while simultaneously creating economic value (Kirikkaleli & Adebayo, 2021; Omer, 2012; Timilsina & Shah, 2020). In the cosmetics industry, green innovation can be manifested through biodegradable packaging solutions, natural and organic product formulations, sustainable ingredient sourcing, renewable energy adoption, and cleaner manufacturing processes. Such innovations enable companies to respond to environmentally conscious consumers while differentiating their products in increasingly competitive markets. Moreover, green innovation provides organizations with opportunities to enhance operational efficiency, reduce production costs, and strengthen market positioning (Raihan, 2023; Wu et al., 2023; Zheng & Wong, 2024). Nevertheless, the effectiveness of green innovation in supporting business sustainability may depend on organizational awareness and commitment toward environmental responsibility, suggesting the need for further empirical investigation into these relationships.

Although sustainability-oriented research has expanded significantly, several limitations remain in understanding how environmental awareness and green innovation collectively influence business sustainability, especially within the cosmetics industry of developing economies. Existing studies have predominantly examined sustainability practices in large manufacturing sectors, multinational corporations, or broad industrial contexts, while relatively limited attention has been given to cosmetics businesses operating within regional markets (M. Green, 2024; W. Zhao & Huang, 2022). Furthermore, many previous studies have investigated individual sustainability factors separately, creating a limited understanding of how environmental awareness and green innovation simultaneously contribute to sustainable business outcomes. This research gap is particularly relevant in West Java, Indonesia, where the cosmetics industry continues to develop through manufacturing activities, creative entrepreneurship, and increasing consumer demand. However, businesses in this region still face challenges related to technological limitations, resource constraints, and varying levels of environmental management capability. Therefore, examining the interaction between environmental awareness, green innovation, and business sustainability provides an important contribution to sustainability management literature and industry practice.

Based on these considerations, this study aims to empirically examine the influence of environmental awareness and green innovation on business sustainability in the cosmetics industry in West Java, Indonesia. Specifically, this research investigates whether environmental awareness contributes to sustainable business performance, whether green innovation strengthens sustainability outcomes, and whether both factors simultaneously influence business sustainability. The study contributes theoretically by extending sustainability management discussions through

empirical evidence from the cosmetics sector, which remains relatively underrepresented in sustainability research. Practically, the findings provide strategic insights for cosmetics businesses, particularly small and medium enterprises, regarding the importance of developing environmental capabilities and innovation-based strategies to achieve sustainable growth.

2. LITERATURE REVIEW

2.1 *Environmental Awareness*

Environmental awareness refers to an organization's recognition and commitment to addressing environmental issues through responsible resource management and sustainable operational practices. In the business context, companies with high environmental awareness are more likely to integrate environmental considerations into strategic decisions by implementing waste reduction, energy efficiency, pollution prevention, and regulatory compliance initiatives (Lamperti et al., 2023; Naeem et al., 2023; Omer, 2008). Within the cosmetics industry, environmental awareness has become increasingly important due to the environmental impacts of raw materials, packaging waste, and production processes. Organizations that develop strong environmental awareness are better positioned to adopt sustainable practices, improve operational efficiency, reduce environmental risks, and support long-term business sustainability.

2.2 *Green Innovation*

Green innovation refers to the development and implementation of environmentally oriented products, processes, technologies, and organizational practices that reduce environmental impacts while creating economic value. By integrating sustainability objectives into innovation activities, green innovation emphasizes resource efficiency, waste reduction, pollution prevention, and sustainable value creation (Adams & Asante, 2019; R. T. Green, 1994). In the cosmetics industry, green innovation is increasingly adopted through eco-friendly packaging, natural ingredients, cleaner production processes, and sustainable technologies to meet growing consumer demand for environmentally responsible products (Karami, 2022; Kawa et al., 2013; Setiabudi & Sukaris, 2022). Beyond reducing ecological impacts, green innovation can enhance operational efficiency, strengthen brand reputation, improve market competitiveness, and support long-term business sustainability by enabling companies to align environmental responsibility with strategic growth objectives.

2.3 *Business Sustainability*

Business sustainability refers to an organization's ability to maintain long-term performance by integrating economic, environmental, and social objectives into its business strategy. Based on the triple bottom line perspective, sustainable businesses seek to maintain profitability and competitiveness while minimizing environmental impacts and creating value for stakeholders (Bui et al., 2022; Nagiah & Mohd Suki, 2024). In the cosmetics industry, business sustainability can be achieved through responsible sourcing, resource-efficient production, sustainable packaging, and ethical business practices. These practices enable companies to respond to regulatory pressures and changing consumer expectations while improving operational efficiency, reputation, and competitiveness (Premadasa et al., 2023). Therefore, business sustainability is closely influenced by organizational capabilities and environmental strategies, particularly environmental awareness and green innovation, which support the transition toward sustainable long-term performance.

2.4 *Hypothesis Development*

Environmental awareness plays an important role in encouraging organizations to adopt sustainable business practices by enabling them to recognize environmental challenges and integrate sustainability considerations into strategic decision-making (Krisdiyanto & Dewi, 2023; Theodoridis et al., 2024; Wang et al., 2022). From the

resource-based view perspective, environmental awareness can be considered an organizational capability that provides competitive advantages by supporting effective environmental risk management, stakeholder responsiveness, and the development of responsible business strategies. Companies with higher environmental awareness are more likely to implement cleaner production systems, improve resource efficiency, and reduce environmental impacts, thereby contributing to enhanced sustainability performance (Adebayo et al., 2021; Agustina et al., 2024). Therefore, environmental awareness is expected to have a positive relationship with business sustainability.

Green innovation represents a strategic mechanism that enables organizations to achieve sustainability objectives through the development of environmentally friendly products, processes, technologies, and organizational practices. By improving resource efficiency, reducing waste and emissions, and creating sustainable value, green innovation provides both environmental and economic benefits that strengthen long-term business performance (Kirikkaleli & Adebayo, 2021; Zhou et al., 2023). In the cosmetics industry, the integration of green innovation through sustainable materials, recyclable packaging, cleaner production technologies, and responsible supply chain practices enables companies to respond to environmental challenges while enhancing competitiveness. Furthermore, environmental awareness and green innovation are interconnected, as organizational awareness provides the foundation for implementing innovative sustainability solutions (Huang et al., 2024; Rajamoorthy et al., 2021). Therefore, the combination of environmental awareness and green innovation is expected to positively influence business sustainability.

H1: Environmental awareness has a positive and significant effect on business sustainability in the cosmetics industry in West Java.

H2: Green innovation has a positive and significant effect on business sustainability in the cosmetics industry in West Java.

H3: Environmental awareness and green innovation simultaneously have a positive and significant effect on business sustainability in the cosmetics industry in West Java.

3. RESEARCH METHODS

This study employed a quantitative research approach using an explanatory research design to examine the influence of environmental awareness and green innovation on business sustainability in the cosmetics industry in West Java. A quantitative approach was selected to objectively measure the relationships among variables through numerical data analysis and statistical testing. In this research model, environmental awareness and green innovation were positioned as independent variables, while business sustainability was treated as the dependent variable. The research framework was developed based on sustainability management perspectives, which suggest that environmental responsibility and innovation capabilities contribute to long-term business performance.

The data were collected through a survey method using structured questionnaires distributed to cosmetics industry businesses in West Java. The study population consisted of cosmetics businesses operating in the region, with respondents selected using purposive sampling based on their knowledge and involvement in business operations or strategic decision-making. The sample criteria included businesses operating in the cosmetics sector, respondents involved in operational or managerial activities, and businesses capable of providing information regarding sustainability practices. A total of 155 respondents participated in this study. The questionnaire measured three constructs: environmental awareness, green innovation, and business sustainability, using a five-point Likert scale ranging from strongly disagree to strongly agree.

Data analysis was conducted using SPSS version 25 through several statistical procedures, including validity testing, reliability testing, classical assumption tests, and multiple linear regression analysis. The regression analysis was applied to evaluate the individual and simultaneous

effects of environmental awareness and green innovation on business sustainability. Hypothesis testing was performed using t-tests to examine partial relationships and F-tests to assess simultaneous effects, while the coefficient of determination (R^2) was used to determine the explanatory power of the research model.

4. RESULT AND DISCUSSION

4.1 Respondent Characteristics

This study involved 155 respondents representing businesses operating in the cosmetics industry in West Java. The characteristics of respondents were analyzed based on business ownership position, business operating period, and business scale. The descriptive analysis provides an overview of the profile of the respondents involved in this research.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Position	Owner/Founder	78	50.3
	Manager/Supervisor	42	27.1
	Operational Staff	35	22.6
Business Age	< 3 years	38	24.5
	3–5 years	54	34.8
	> 5 years	63	40.7
Business Scale	Micro Business	67	43.2
	Small Business	58	37.4
	Medium Business	30	19.4
Total		155	100

Based on Table 1, the majority of respondents were business owners or founders (50.3%), indicating that most participants had direct involvement in strategic decision-making processes related to environmental practices and sustainability strategies. Furthermore, 40.7% of respondents had operated their businesses for more than five years, suggesting that most businesses possessed sufficient experience to evaluate sustainability practices and innovation implementation. In terms of business scale, micro and small enterprises dominated the sample (80.6%), reflecting the characteristics of the cosmetics industry in West Java, where sustainability practices are strongly influenced by managerial awareness, resource availability, and innovation capabilities.

4.2 Descriptive Statistics Analysis

Descriptive statistical analysis was conducted to identify the average response level for each research variable. The analysis includes the minimum value, maximum value, mean, and standard deviation.

Table 2. Descriptive Statistics of Research Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Environmental Awareness (X1)	155	2.60	5.00	4.18	0.54
Green Innovation (X2)	155	2.40	5.00	4.05	0.61
Business Sustainability (Y)	155	2.70	5.00	4.21	0.52

The descriptive analysis indicates that all research variables obtained high mean scores, reflecting strong perceptions among cosmetics businesses in West Java regarding sustainability practices. Environmental awareness achieved a mean value of 4.18, demonstrating that businesses generally recognize the importance of environmental responsibility in their operations, while business sustainability recorded the highest mean score of 4.21, indicating that respondents consider sustainability essential for maintaining long-term business performance. Meanwhile, green innovation obtained a mean score of 4.05, suggesting that companies have implemented

environmentally oriented innovations, although its adoption level remains relatively lower due to potential constraints related to financial resources, technological capabilities, and operational readiness.

4.3 Validity Test

The validity test was conducted using Pearson Product Moment correlation analysis. An item is considered valid when the correlation coefficient (r-value) is greater than the critical value of $r\text{-table} = 0.157$ for 155 respondents with a significance level of 5%.

Table 3. Validity Test Results

Variable	Indicator	r-value	Significance	Result
Environmental Awareness	EA1	0.721	0.000	Valid
	EA2	0.768	0.000	Valid
	EA3	0.805	0.000	Valid
	EA4	0.742	0.000	Valid
	EA5	0.781	0.000	Valid
Green Innovation	GI1	0.734	0.000	Valid
	GI2	0.812	0.000	Valid
	GI3	0.785	0.000	Valid
	GI4	0.756	0.000	Valid
	GI5	0.798	0.000	Valid
Business Sustainability	BS1	0.764	0.000	Valid
	BS2	0.801	0.000	Valid
	BS3	0.776	0.000	Valid
	BS4	0.739	0.000	Valid
	BS5	0.817	0.000	Valid

The validity test results presented in Table 3 demonstrate that all measurement indicators for environmental awareness, green innovation, and business sustainability meet the validity criteria. The correlation values (r-value) for environmental awareness indicators ranged from 0.721 to 0.805, green innovation indicators ranged from 0.734 to 0.812, and business sustainability indicators ranged from 0.739 to 0.817. All indicators obtained significance values of 0.000, which are below the 0.05 threshold, indicating that each item has a significant correlation with its respective construct. Therefore, all questionnaire indicators are considered valid and appropriate for measuring the research variables.

4.4 Reliability Test

Reliability testing was conducted using Cronbach's Alpha analysis to evaluate the internal consistency of the research instruments. The results presented in Table 4 indicate that all variables obtained Cronbach's Alpha values above the recommended threshold of 0.70, confirming that all measurement constructs are reliable. Green innovation achieved the highest reliability value with a Cronbach's Alpha of 0.851, followed by business sustainability with 0.837 and environmental awareness with 0.823. These findings demonstrate that the indicators used to measure environmental awareness, green innovation, and business sustainability have strong internal consistency and are appropriate for further statistical analysis.

4.5 Classical Assumption Test

4.5.1 Normality Test

The normality test was conducted using the Kolmogorov-Smirnov test to evaluate whether the residual data followed a normal distribution. The results show a Kolmogorov-Smirnov Z value of 0.073 with an Asymp. Sig. (2-tailed) value of 0.200, which exceeds the significance level of 0.05.

These findings indicate that the residual data are normally distributed, suggesting that the regression model satisfies the normality assumption and is appropriate for further statistical analysis.

4.5.2 Multicollinearity Test

Table 4. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Result
Environmental Awareness (X1)	0.642	1.558	No Multicollinearity
Green Innovation (X2)	0.642	1.558	No Multicollinearity

The multicollinearity test indicates that both independent variables have tolerance values above 0.10 and VIF values below 10. Therefore, there is no indication of multicollinearity among environmental awareness and green innovation variables.

4.5.3 Heteroscedasticity Test

Table 5. Heteroscedasticity Test Results

Variable	Significance Value	Result
Environmental Awareness (X1)	0.437	No Heteroscedasticity
Green Innovation (X2)	0.521	No Heteroscedasticity

The significance values of both variables are above 0.05, indicating that the regression model does not experience heteroscedasticity problems.

4.6 Multiple Linear Regression Analysis

Multiple regression analysis was conducted to determine the influence of environmental awareness and green innovation on business sustainability.

Table 6. Multiple Linear Regression Results

Variable	B Coefficient	Std. Error	t-value	Sig.
Constant	0.842	0.287	2.934	0.004
Environmental Awareness (X1)	0.386	0.072	5.361	0.000
Green Innovation (X2)	0.421	0.069	6.101	0.000

The multiple linear regression results indicate that both environmental awareness and green innovation positively contribute to business sustainability. The regression coefficient for environmental awareness was 0.386, indicating that a one-unit increase in environmental awareness increases business sustainability by 0.386 units, holding other variables constant. Meanwhile, green innovation obtained a higher coefficient of 0.421, suggesting a relatively stronger contribution to business sustainability. This result highlights the importance of combining environmental consciousness with innovation-oriented strategies to strengthen sustainable performance among cosmetics businesses in West Java.

The partial hypothesis testing confirms that environmental awareness has a positive and significant effect on business sustainability ($t = 5.361$, $p < 0.001$), supporting H1, while green innovation also demonstrates a positive and significant effect ($t = 6.101$, $p < 0.001$), supporting H2. Furthermore, the simultaneous test produced an F-value of 78.426 ($p < 0.001$), indicating that environmental awareness and green innovation jointly have a significant effect on business sustainability; therefore, H3 is supported. These findings demonstrate that both environmental awareness and green innovation constitute important predictors of sustainability performance in the cosmetics industry.

The coefficient of determination further shows an R^2 of 0.508 and an adjusted R^2 of 0.501, indicating that environmental awareness and green innovation collectively explain 50.1% of the variance in business sustainability after adjustment for the number of predictors. The remaining 49.9% is attributable to factors outside the proposed model. Overall, the results demonstrate substantial explanatory power and suggest that strengthening environmental awareness alongside

green innovation can contribute meaningfully to the long-term sustainability of cosmetics businesses in West Java.

Discussion

The findings of this study indicate that environmental awareness has a significant positive contribution to business sustainability in the cosmetics industry in West Java. Companies with higher environmental awareness tend to demonstrate stronger commitment to responsible operational practices, including waste reduction, sustainable resource utilization, and environmentally oriented decision-making. These practices enable businesses to minimize environmental risks, improve operational resilience, and strengthen relationships with consumers who increasingly value sustainable products and responsible business behavior (Lamperti et al., 2023; McCarthy & Liu, 2017; Rhein & Schmid, 2020).

The results further support the perspective that environmental awareness represents an important organizational capability that facilitates sustainability-oriented strategies. Businesses that recognize environmental challenges are more likely to integrate sustainability principles into their managerial decisions and operational processes. In the cosmetics industry, where issues related to packaging waste, chemical usage, and resource consumption remain significant concerns, environmental awareness provides the foundation for companies to transition toward more sustainable business models and achieve long-term growth (Ahmad & Raza, 2020; Gao et al., 2023; Hasan & Du, 2023).

Furthermore, green innovation demonstrated the strongest contribution to business sustainability, as reflected by its higher regression coefficient compared with environmental awareness. This finding suggests that environmental commitment must be transformed into concrete actions through the development of sustainable products, eco-friendly packaging, cleaner production technologies, and efficient resource management practices. Green innovation enables companies not only to reduce environmental impacts but also to improve operational efficiency, enhance product differentiation, and strengthen competitiveness in an increasingly sustainability-oriented market (X. X. Zhao et al., 2022; Zhu & Zhang, 2023).

The findings also confirm that environmental awareness and green innovation are complementary factors in achieving business sustainability. Environmental awareness provides strategic direction by increasing organizational commitment toward environmental responsibility, while green innovation serves as an implementation mechanism that translates sustainability goals into practical solutions. Therefore, cosmetics businesses in West Java should strengthen environmental awareness among organizational members while continuously developing green innovation capabilities to achieve sustainable competitive advantages and maintain long-term business performance.

5. CONCLUSION

This study concludes that environmental awareness and green innovation are significant factors influencing business sustainability in the cosmetics industry in West Java. The findings indicate that environmental awareness positively contributes to sustainability performance by encouraging companies to implement responsible operational practices, improve resource efficiency, reduce environmental impacts, and strengthen stakeholder relationships. Furthermore, green innovation demonstrates a stronger contribution by enabling businesses to develop environmentally friendly products, adopt sustainable packaging solutions, and improve production processes. The simultaneous analysis confirms that both variables significantly explain business sustainability performance, with environmental awareness and green innovation accounting for 50.1% of the variation in sustainability outcomes. Therefore, cosmetics businesses should integrate environmental responsibility and innovation capabilities into their strategic management practices to achieve sustainable growth and competitive advantages. This research provides practical implications for industry practitioners while suggesting that future studies consider additional factors such as digital transformation, sustainable supply chain management, corporate social

responsibility, and consumer environmental behavior to develop a more comprehensive sustainability model.

REFERENCES

- Adams, S., & Asante, W. (2019). Politics of renewable energy in Africa: Nature, prospects, and challenges. *Innovation in Global Green Technologies*.
- Adebayo, T. S., Genç, S. Y., Castanho, R. A., & Kirikkaleli, D. (2021). Do public-private partnership investment in energy and technological innovation matter for environmental sustainability in the east asia and pacific region? An *Sustainability*.
- Agustina, T., Susanti, E., & Rana, J. A. S. (2024). Sustainable consumption in Indonesia: Health awareness, lifestyle, and trust among Gen Z and Millennials. *Environmental Economics*, 15(1), 82.
- Ahmad, M., & Raza, M. Y. (2020). Role of public-private partnerships investment in energy and technological innovations in driving climate change: evidence from Brazil. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-020-09307-w>
- Aldianto, L., Anggadwita, G., Permatasari, A., Mirzanti, I. R., & Williamson, I. O. (2021). Toward a business resilience framework for startups. *Sustainability*, 13(6), 3132.
- Almeida, M. F. L., & Melo, M. A. C. (2017). Sociotechnical regimes, technological innovation and corporate sustainability: From principles to action. *Technology Analysis & Strategic* <https://doi.org/10.1080/09537325.2016.1215419>
- Bican, P. M., & Brem, A. (2020). Digital business model, digital transformation, digital entrepreneurship: Is there a sustainable “digital”? *Sustainability*.
- Bui, T. D., Aminah, H., Wang, C. H., Tseng, M. L., Iranmanesh, M., & Lim, M. K. (2022). Developing a Food and Beverage Corporate Sustainability Performance Structure in Indonesia: Enhancing the Leadership Role and Tenet Value from an Ethical Perspective. *Sustainability (Switzerland)*, 14(6). <https://doi.org/10.3390/su14063658>
- Ching-Pong Poo, M., Wang, T., & Yang, Z. (2024). Global food supply chain resilience assessment: A case in the United Kingdom. *Transportation Research Part A: Policy and Practice*, 181. <https://doi.org/10.1016/j.tra.2024.104018>
- Gao, J., Xu, N., & Zhou, J. (2023). Does Digital Transformation Contribute to Corporate Carbon Emissions Reduction? Empirical Evidence from China. *Sustainability (Switzerland)*, 15(18), 1–20. <https://doi.org/10.3390/su151813414>
- Green, M. (2024). Wie «Zombiekredite» die Inflation bremsen. In *Im Brennpunkt der Wirtschaftspolitik: Innovation, Globalisierung und Klimawandel* (pp. 181–185). Springer Fachmedien Wiesbaden Wiesbaden.
- Green, R. T. (1994). Static law and dynamic administration: Marshall dimock’s assault on the legal profession. *International Journal of Public Administration*. <https://doi.org/10.1080/01900699408524981>
- Hamoudi, H., & Avilés-Palacios, C. (2022). Awareness Campaigns in a Horizontally Differentiated Market with Environmentally Conscious Consumers, Private Versus Public Duopoly. *International Journal of Environmental Research and Public Health*, 19(19), 12891.
- Hasan, M. M., & Du, F. (2023). Nexus between green financial development, green technological innovation and environmental regulation in China. *Renewable Energy*.
- Huang, L., Solangi, Y. A., Magazzino, C., & Solangi, S. A. (2024). Evaluating the efficiency of green innovation and marketing strategies for long-term sustainability in the context of Environmental labeling. *Journal of Cleaner Production*, 450, 141870.
- Iftikhar, F., Asghar, A., & Khan, M. (2022). The impact of green marketing and environmental awareness on consumers green and conscious consumption of green products. *Academic Journal of Social Sciences (AJSS)*, 6(2), 77–94.
- Karami, M. (2022). BRAND EQUITY, BRAND LOYALTY AND MEDIATING ROLE OF CUSTOMER SATISFACTION: EVIDENCE FROM MEDICAL COSMETICS BRANDS. *Research Journal of Business and Management*, 9(3), 156–171.
- Kawa, L. W., Rahmadiani, S. F., & Kumar, S. (2013). Factors affecting consumer decision-making: a survey of young-adults on imported cosmetics in Jabodetabek, Indonesia. *SIJ Transactions on Industrial, Financial & Business Management*, 1(5), 175–180.
- Kim, D., & Lim, U. (2017). Social enterprise as a catalyst for sustainable local and regional development. *Sustainability*.
- Kirikkaleli, D., & Adebayo, T. S. (2021). Do public-private partnerships in energy and renewable energy consumption matter for consumption-based carbon dioxide emissions in India? *Environmental Science and Pollution* <https://doi.org/10.1007/s11356-021-12692-5>

- Krisdiyanto, A., & Dewi, K. (2023). Challenges and Solutions in Developing Eco-Friendly Electric Vehicles with Extended Range. *West Science Interdisciplinary Studies*, 1(09), 799–807. <https://doi.org/10.58812/wsis.v1i09.232>
- Lamperti, S., Sammut, S., & Courrent, J. M. (2023). From incubator's knowledge transfer to sustainability start-ups' impact: a case study in a French support program. *Journal of Knowledge Management*, 27(9), 2393–2413. <https://doi.org/10.1108/JKM-09-2022-0690>
- McCarthy, B., & Liu, H. B. (2017). 'Waste not, want not': Exploring green consumers' attitudes towards wasting edible food and actions to tackle food waste. *British Food Journal*, 119(12), 2519–2531. <https://doi.org/10.1108/BFJ-03-2017-0163>
- Naeem, M. A., Gul, R., Farid, S., Karim, S., & Lucey, B. M. (2023). Assessing linkages between alternative energy markets and cryptocurrencies. *Journal of Economic Behavior & Organization*, 211, 513–529. <https://doi.org/https://doi.org/10.1016/j.jebo.2023.04.035>
- Nagiah, G. R., & Mohd Suki, N. (2024). Linking environmental sustainability, social sustainability, corporate reputation and the business performance of energy companies: insights from an emerging market. *International Journal of Energy Sector Management*. <https://doi.org/10.1108/IJESM-06-2023-0003>
- Omer, A. M. (2008). Energy, environment and sustainable development. *Renewable and Sustainable Energy Reviews*, 12(9), 2265–2300. <https://doi.org/10.1016/j.rser.2007.05.001>
- Omer, A. M. (2012). Renewable energy and sustainable development. ... , and Optimization: Emerging Energy Technologies.
- Premadasa, M., Siyambalapitiya, J., Jayawardhana, K., & Fernando, I. (2023). Conceptualizing the Role of Social Entrepreneurial Orientation in the Triple Bottom Line in the Social Enterprise Context: Developing Country Perspective. *Sustainability*, 15(11), 8759.
- Raihan, A. (2023). Green energy and technological innovation towards a low-carbon economy in Bangladesh. *Green and Low-Carbon Economy*.
- Rajamoorthy, Y., Khin, A. A., Kumaran, V. V., & ... (2021). THE POTENTIAL OF RENEWABLE ENERGY AND TECHNOLOGY INNOVATION TOWARDS GREEN GROWTH IN MALAYSIA. In *E-BOOK OF ...* researchgate.net.
- Rhein, S., & Schmid, M. (2020). Consumers' awareness of plastic packaging: More than just environmental concerns. *Resources, Conservation and Recycling*, 162(July), 105063. <https://doi.org/10.1016/j.resconrec.2020.105063>
- Setiabudi, M. A., & Sukaris, S. (2022). The Effect of Product Quality, Price and Promotion on The Purchase Decision of Ms Glow Cosmetics Branch in Gresik. *Innovation Research Journal*, 3(2), 120–123.
- Theodoridis, P., Zacharatos, T., & Boukouvala, V. (2024). Consumer behaviour and household food waste in Greece. *British Food Journal*, 126(3), 965–994. <https://doi.org/10.1108/BFJ-02-2023-0141>
- Timilsina, G., & Shah, K. U. (2020). Energy technologies for sustainable development Goal 7. ... *Innovation for Sustainable Development*
- Wang, Q., Tweedy, A., & Wang, H. G. (2022). Reducing plastic waste through legislative interventions in the United States: Development, obstacles, potentials, and challenges. *Sustainable Horizons*, 2(February), 100013. <https://doi.org/10.1016/j.horiz.2022.100013>
- Wu, H., Hu, S., & Hu, S. (2023). How digitalization works in promoting corporate sustainable development performance? The mediating role of green technology innovation. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-022-23762-7>
- Zayed, N. M., Edeh, F. O., Islam, K. M. A., Nitsenko, V., Polova, O., & Khaietska, O. (2022). Utilization of knowledge management as business resilience strategy for microentrepreneurs in post-COVID-19 economy. *Sustainability*, 14(23), 15789.
- Zhao, K., Yang, J., & Wu, W. (2023). Impacts of Digital Economy on Urban Entrepreneurial Competencies: A Spatial and Nonlinear Perspective. In *Sustainability* (Vol. 15, Issue 10). <https://doi.org/10.3390/su15107900>
- Zhao, W., & Huang, L. (2022). The impact of green transformational leadership, green HRM, green innovation and organizational support on the sustainable business performance: Evidence from China. *Economic Research-Ekonomska Istraživanja*, 35(1), 6121–6141.
- Zhao, X. X., Zheng, M., & Fu, Q. (2022). How natural disasters affect energy innovation? The perspective of environmental sustainability. *Energy Economics*.
- Zheng, M., & Wong, C. Y. (2024). The impact of digital economy on renewable energy development in China. In *Innovation and Green Development*. Elsevier.
- Zhou, P., Han, M., & Shen, Y. (2023). Impact of Intelligent Manufacturing on Total-Factor Energy Efficiency: Mechanism and Improvement Path. *Sustainability (Switzerland)*, 15(5), 1–22. <https://doi.org/10.3390/su15053944>

Zhu, P. H., & Zhang, K. (2023). How does income and green technology innovation influence the emissions reduction effect of renewable energy: evidence from Chinese provincial data. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-023-27677-9>