

DRIVING CIRCULAR BUSINESS PRACTICES THROUGH GREEN HUMAN RESOURCES AND ENVIRONMENTAL STRATEGY: THE ROLES OF INNOVATION AND ECOSYSTEM COLLABORATION IN MSMEsErta^{1,2*}, Rofiaty³, Risna Wijayanti³, Margono³

^{1.} Doctoral Program in Management Science, Faculty of Economics and Business, Universitas Brawijaya, Malang, INDONESIA Email id: ertaerta@student.ub.ac.id

^{2.} Study Program of Sports Management, Faculty of Sport and Health Science, Universitas Negeri Surabaya, Surabaya, INDONESIA

^{3.} Faculty of Economics and Business, Universitas Brawijaya, INDONESIA

Abstract

The increasing environmental challenges and global sustainability pressures have encouraged Micro, Small, and Medium Enterprises (MSMEs) to adopt circular business practices as part of sustainable business transformation. However, the implementation of circular economy practices among MSMEs remains limited due to inadequate green competencies, weak environmental strategies, and insufficient collaborative ecosystems. This study aims to examine the effects of Green Human Resource Management (GHRM) and Environmental Strategy on Circular Business Practices, with Innovation serving as a mediating variable and Ecosystem Collaboration acting as a moderating variable. This study employed a quantitative explanatory approach involving MSMEs in the food and beverage sector in East Java, particularly in Surabaya, Malang, and Gresik. Data were collected from 247 MSME owners and managers using structured questionnaires and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The study adopted the Natural Resource-Based View (NRBV) as the main theoretical framework. The findings reveal that GHRM and Environmental Strategy significantly influence Innovation and Circular Business Practices. Innovation was found to partially mediate the relationships between GHRM, Environmental Strategy, and Circular Business Practices. Furthermore, Ecosystem Collaboration significantly strengthens the relationship between Environmental Strategy and Circular Business Practices. These results indicate that environmentally oriented organizational capabilities and collaborative ecosystems are critical drivers of circular business implementation among MSMEs. This study contributes theoretically by extending the application of NRBV in the context of circular economy practices among MSMEs. Practically, the findings provide implications for policymakers and MSME practitioners in developing sustainability-oriented strategies through green human resource development, environmental commitment, innovation enhancement, and ecosystem collaboration to accelerate the transition toward a circular economy.

Keywords: Circular Business Practices; Green Human Resource Management; Environmental Strategy; Innovation; Ecosystem Collaboration; MSMEs; Natural Resource-Based View.

Introduction

The establishment of the ASEAN Economic Community (AEC) has intensified global competition, requiring Indonesia to strengthen the competitiveness of its Micro, Small, and Medium Enterprises (MSMEs), particularly in the food and beverage sector, which significantly contributes to economic growth and employment. Despite the rapid expansion of MSMEs, especially in East Java, environmental challenges such as increasing industrial waste, inefficient resource utilization, and dependence on linear production systems remain critical issues. These conditions highlight the urgency of adopting circular business practices that emphasize resource efficiency, waste reduction, and sustainable value creation through the principles of reduce, reuse, recycle, and recover (Gajanayake et al., 2024; Megawati et al., 2024).

Over the last decade, the circular economy has emerged as a strategic global approach to addressing environmental degradation and resource scarcity caused by the traditional “take–make–dispose” model. The circular economy is estimated to generate approximately US\$4.5 trillion in economic benefits by 2030 through resource efficiency, cost reduction, and sustainable market creation (Lacy & Rutqvist, 2015; Ellen MacArthur Foundation, 2021). In addition, the European Union integrated the “Circular Economy Action Plan” into the European Green Deal to support sustainable development and net-zero emission targets (Ezeudu & Kennedy, 2024; Muafi & Sugarindra, 2023). Similarly, the World Economic Forum (2022) emphasized that circular transformation has become a competitive strategy across industries, including manufacturing and consumer goods sectors. Companies such as Philips, IKEA, and Unilever have integrated circular principles into their supply chains through sustainable product design and ecosystem collaboration.

In Indonesia, circular economy implementation is increasingly recognized as a strategic pathway toward sustainable economic transformation. Reports from Ministry of National Development Planning of Indonesia (Bappenas) (2021) indicated that circular economy adoption could contribute IDR 593 trillion to national GDP and create approximately 4.4 million new jobs by 2030. Furthermore, a joint report by United Nations Development Programme and Bappenas (2022) estimated that circular economy practices could reduce greenhouse gas emissions by up to 126 million tons of CO₂e annually. However, despite these opportunities, many MSMEs still face structural and cultural barriers in adopting circular business practices, including limited environmental awareness, inadequate green competencies, and insufficient collaboration networks (De Angelis, 2024; von Kolpinski et al., 2023). According to the Asian Development Bank, many MSMEs in Southeast Asia still face significant barriers in adopting environmentally sustainable practices due to limited financial capacity, lack of technological support, and uncertainty regarding direct economic benefits from green investments (Tan & Ng, 2023).

Previous studies have demonstrated that MSMEs often prioritize short-term profitability over sustainability initiatives, resulting in limited adoption of circular economy practices (Muzamwese et al., 2024; Nikam & Melati, 2023). Research by Capponi and Castaldi (2025), Ezeudu and Kennedy (2024), and Muafi and Sugarindra (2023) further revealed that the major challenges in implementing circular economy practices lie in organizational mindset transformation and the absence of supportive systems. Similarly, Kirzherr et al. (2018) emphasized that limited knowledge, inadequate organizational capabilities, and weak institutional support remain significant barriers to circular economy implementation, particularly among small and medium-sized enterprises (SMEs). Therefore, the transition toward circular business models requires a strategic approach that emphasizes not only technological adaptation but also the development of green human resources, environmental strategies, innovation capabilities, and collaborative business ecosystems (Gajanayake et al., 2024; Neligan et al., 2023; Zhakysbayeva et al., 2024). This study adopts the Natural Resource-Based View (NRBV) as the primary theoretical foundation. NRBV extends the Resource-Based View by emphasizing environmental capabilities as strategic resources that can generate sustainable competitive advantage (Andersén, 2021; McDougall et al., 2019; Wang et al., 2024). Within this perspective, green human resources and environmental strategies are viewed as critical organizational capabilities that enhance innovation and support circular business practices. Innovation serves as a mediating mechanism that transforms internal green capabilities into sustainable operational practices (Aranda-Usón et al., 2019; Atanasova et al., 2021), while ecosystem collaboration strengthens the effectiveness of innovation through knowledge sharing, resource integration, and inter-organizational cooperation (Chirumalla et al., 2024; Trevisan et al., 2021).

Although previous studies have examined sustainability and circular economy practices, limited research has simultaneously explored the integrated roles of green human resources, environmental strategy, innovation, and ecosystem collaboration in driving circular business practices among MSMEs, particularly in the context of East Java. Therefore, this study aims to investigate the effects of green human resources and environmental strategy on circular business practices, with innovation acting as a mediating variable and ecosystem collaboration as a moderating variable. This research is expected to contribute theoretically to the development of NRBV and circular economy literature while also providing practical insights for MSMEs and policymakers in accelerating sustainable business transformation.

Materials and Methods

Study Design: This study employed a quantitative research approach using an explanatory design to examine the relationships among Green Human Resource Management (GHRM), Environmental Strategy, Innovation, Ecosystem Collaboration, and Circular Business Practices in Micro, Small, and Medium Enterprises (MSMEs). The study aimed to analyze both direct and indirect effects among variables based on the Natural Resource-Based View (NRBV) perspective.

Population and Sample: The population of this study consisted of MSMEs operating in the food and beverage sector in East Java, particularly those located in Surabaya, Malang, and Gresik. These regions were selected because they represent major MSME centers with different environmental and industrial characteristics related to circular business implementation.

The sampling technique used was purposive sampling, with respondents selected based on the following criteria:

1. MSMEs operating for at least three years;
2. MSMEs engaged in food and beverage production activities;
3. MSMEs implementing or having awareness of environmentally friendly business practices; and
4. Owners or managers directly involved in operational and strategic decision-making processes.

The minimum sample size followed the recommendation of Hair et al. (2021), which suggests that the sample should be at least 5–10 times the number of indicators used in the research model. Considering the number of indicators in this study, a minimum sample of 200 respondents was considered adequate for analysis using Structural Equation Modeling (SEM).

Data Collection Procedure: Primary data were collected through a structured questionnaire distributed both online and offline to MSME owners and managers. The questionnaire used a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Prior to the main survey, a pilot test involving 30 respondents was conducted to ensure the validity and reliability of the research instrument. Secondary data were obtained from government reports, academic publications, and sustainability-related documents relevant to MSMEs and circular economy implementation.

Measurement of Variables: The constructs used in this study were adapted from previous empirical studies to ensure content validity.

1. Green Human Resource Management (GHRM) was measured using indicators related to green recruitment, green training, green performance evaluation, and employee environmental involvement adapted from previous studies on GHRM practices (Jabbour & Santos, 2008; Tang et al., 2018).
2. Environmental Strategy was measured through organizational initiatives associated with environmental commitment, eco-efficient operations, waste minimization, and sustainability-oriented strategic planning adapted from Banerjee (2002) and Fraj et al. (2015).
3. Innovation referred to the organization’s capability to develop environmentally sustainable products, processes, and business models, measured using indicators adapted from Chen et al. (2006) and Fernando et al. (2019).
4. Ecosystem Collaboration was measured through indicators associated with inter-organizational cooperation, stakeholder integration, knowledge sharing, and collaborative sustainability initiatives adapted from Adner (2017) and Chirumalla et al. (2024).
5. Circular Business Practices referred to organizational activities associated with resource efficiency, waste minimization, recycling, reuse, and resource recovery processes adapted from Kirchherr et al. (2018) and Geissdoerfer et al. (2020).

Data Analysis Technique: Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 4. PLS-SEM was selected because it is suitable for predictive and exploratory research models involving complex relationships and latent variables. The analysis consisted of two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model).

The outer model assessment included tests of convergent validity, discriminant validity, composite reliability, and Cronbach’s alpha. Convergent validity was established when factor loadings exceeded 0.70 and Average Variance Extracted (AVE) values were greater than 0.50. Reliability was considered satisfactory when Composite Reliability (CR) and Cronbach’s alpha values exceeded the recommended threshold of 0.70 (Hair et al., 2021).

The inner model evaluation included coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and hypothesis testing through bootstrapping procedures with 5,000 subsamples. Mediation analysis was conducted to examine the mediating role of innovation, while moderation analysis was performed to evaluate the moderating effect of ecosystem collaboration on the relationship between environmental strategy and circular business practices.

Results

Respondent Profile: A total of 247 valid responses were collected from MSME owners and managers operating in the food and beverage sector in East Java, Indonesia. The respondents were distributed across Surabaya, Malang, and Gresik, representing urban, tourism-based, and industrial MSME ecosystems. Most respondents were female (58.3%), aged between 31–45 years (46.6%), and had operated their businesses for more than five years (61.9%). The majority of MSMEs employed fewer than 10 workers (72.1%), indicating the dominance of micro-scale enterprises.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	103	41.7%
	Female	144	58.3%
Age	<30 years	54	21.9%
	31–45 years	115	46.6%
	>45 years	78	31.5%
Business Age	<5 years	94	38.1%
	≥5 years	153	61.9%
Number of Employees	<10 employees	178	72.1%
	10–20 employees	51	20.6%
	>20 employees	18	7.3%

Measurement Model Assessment: The measurement model was evaluated through convergent validity, discriminant validity, and reliability tests using SmartPLS 4. The results showed that all indicator loadings exceeded the recommended threshold of 0.70. In addition, the Average Variance Extracted (AVE) values for all constructs were above 0.50, indicating satisfactory convergent validity. Composite Reliability (CR) and Cronbach’s Alpha values also exceeded 0.70, confirming construct reliability.

Table 2. Reliability and Validity Results

Variable	Cronbach’s Alpha	Composite Reliability	AVE
Green Human Resource Management	0.912	0.928	0.684
Environmental Strategy	0.901	0.921	0.662
Innovation	0.895	0.918	0.651
Ecosystem Collaboration	0.887	0.911	0.633
Circular Business Practices	0.926	0.939	0.701

The discriminant validity test using the Fornell-Larcker Criterion also confirmed that each construct was empirically distinct from the others.

Table 3. Discriminant Validity (Fornell-Larcker Criterion)

Variable	GHRM	ES	INN	EC	CBP
GHRM	0.827				
ES	0.681	0.814			
INN	0.703	0.742	0.807		
EC	0.615	0.691	0.734	0.796	
CBP	0.728	0.781	0.802	0.744	0.837

Note: GHRM = Green Human Resource Management; ES = Environmental Strategy; INN = Innovation; EC = Ecosystem Collaboration; CBP = Circular Business Practices.

Structural Model Assessment

The structural model evaluation showed that the proposed model had substantial explanatory power. The R^2 value for Innovation was 0.592, indicating that Green Human Resource Management and Environmental Strategy explained 59.2% of the variance in Innovation. Meanwhile, the R^2 value for Circular Business Practices was 0.718, suggesting that the combined influence of Green Human Resource Management, Environmental Strategy, Innovation, and Ecosystem Collaboration explained 71.8% of the variance in Circular Business Practices.

Table 4. Coefficient of Determination (R^2)

Endogenous Variable	R^2
Innovation	0.592
Circular Business Practices	0.718

The predictive relevance (Q^2) values for all endogenous constructs were above zero, indicating that the model had acceptable predictive capability.

Hypothesis Testing: Hypothesis testing was conducted using the bootstrapping procedure with 5,000 subsamples. The results indicated that Green Human Resource Management significantly influenced Innovation ($\beta = 0.364, p < 0.001$) and Circular Business Practices ($\beta = 0.221, p < 0.01$). Environmental Strategy also had significant positive effects on Innovation ($\beta = 0.472, p < 0.001$) and Circular Business Practices ($\beta = 0.298, p < 0.001$). Furthermore, Innovation significantly

influenced Circular Business Practices ($\beta = 0.356, p < 0.001$). The mediation analysis demonstrated that Innovation partially mediated the relationships between Green Human Resource Management and Circular Business Practices, as well as between Environmental Strategy and Circular Business Practices. In addition, Ecosystem Collaboration significantly moderated the relationship between Environmental Strategy and Circular Business Practices ($\beta = 0.167, p < 0.05$), indicating that stronger collaboration ecosystems enhanced the effectiveness of environmental strategies in driving circular business practices.

Table 5. Hypothesis Testing Results

Hypothesis	Relationship	Path Coefficient (β)	t-value	p-value	Result
H1	GHRM \rightarrow Innovation	0.364	5.782	0.000	Supported
H2	Environmental Strategy \rightarrow Innovation	0.472	7.114	0.000	Supported
H3	GHRM \rightarrow Circular Business Practices	0.221	3.226	0.001	Supported
H4	Environmental Strategy \rightarrow Circular Business Practices	0.298	4.116	0.000	Supported
H5	Innovation \rightarrow Circular Business Practices	0.356	5.027	0.000	Supported
H6	GHRM \rightarrow Innovation \rightarrow Circular Business Practices	0.129	3.887	0.000	Supported
H7	Environmental Strategy \rightarrow Innovation \rightarrow Circular Business Practices	0.168	4.102	0.000	Supported
H8	Ecosystem Collaboration \times Environmental Strategy \rightarrow Circular Business Practices	0.167	2.455	0.014	Supported

Discussion

The findings of this study demonstrate that Green Human Resource Management (GHRM) significantly influences innovation and circular business practices among MSMEs. This result indicates that environmentally oriented human resource practices, such as green training, environmental awareness development, and employee involvement in sustainability initiatives, contribute to strengthening organizational innovation capability and the implementation of circular business models. These findings support the Natural Resource-Based View (NRBV), which emphasizes that environmental capabilities can become strategic organizational resources that generate sustainable competitive advantage (Andersén, 2021; McDougall et al., 2019; Wang et al., 2024). The results are also consistent with previous studies showing that green human resources encourage organizations to develop environmentally sustainable operational practices and improve organizational adaptability toward ecological transformation (Gajanayake et al., 2024). For MSMEs in East Java, green competencies enable business actors to manage waste more effectively, optimize resource utilization, and develop environmentally friendly products that support circularity principles.

Environmental Strategy was also found to have a significant positive effect on innovation and circular business practices. This finding suggests that MSMEs with stronger environmental commitment tend to adopt eco-efficient production systems, waste reduction initiatives, and sustainable operational planning more effectively. In line with the NRBV perspective, environmental strategy reflects a proactive organizational capability that supports long-term sustainability and competitiveness (Fraj et al., 2015). This result confirms previous findings by Ezeudu and Kennedy (2024) and Muafi and Sugarindra (2023), which emphasized that environmental commitment plays an essential role in encouraging organizations to transition from linear business models toward circular business systems. In the context of MSMEs, environmental strategies become increasingly important because many small businesses still face challenges related to limited environmental awareness and resource efficiency (De Angelis, 2024; von Kolpinski et al., 2023).

The study further revealed that innovation significantly affects circular business practices and mediates the relationship between GHRM, Environmental Strategy, and Circular Business Practices. This finding indicates that internal green capabilities alone are insufficient unless transformed into innovative products, processes, and business models. Innovation acts as a strategic mechanism that enables MSMEs to implement sustainability initiatives practically and economically. These results support prior studies suggesting that green innovation facilitates waste minimization, resource recovery, and sustainable value creation within circular economy systems (Chen et al., 2006; Fernando et al., 2019). Moreover, Aranda-Usón et al. (2019) argued that innovation capability allows firms to convert sustainability-oriented resources into operational and market advantages. In the MSME context, innovation may include the utilization of production waste for new products, eco-friendly packaging development, and digitalization of sustainable supply chain processes.

Another important finding is that Ecosystem Collaboration significantly strengthens the relationship between Environmental Strategy and Circular Business Practices. This result implies that collaboration among MSMEs, suppliers, government institutions, local communities, and industrial stakeholders enhances the effectiveness of environmental strategies in implementing circular business models. These findings are aligned with ecosystem theory, which emphasizes that sustainability transformation cannot be achieved solely through internal organizational capabilities but also requires inter-organizational cooperation and resource integration (Adner, 2017; Chirumalla et al., 2024). Previous studies by Trevisan et al. (2021) and Neligan et al. (2023) also confirmed that collaborative ecosystems facilitate knowledge sharing, technological access, and sustainability-oriented innovation. In East Java, collaboration ecosystems are particularly relevant because MSMEs often face limitations in capital, technology, and environmental management capabilities, making partnerships essential for accelerating circular economy implementation.

Overall, this study confirms that the successful implementation of circular business practices among MSMEs requires an integrated approach involving green human resources, environmental strategy, innovation capability, and ecosystem collaboration. The findings extend the application of the Natural Resource-Based View by demonstrating that environmental and collaborative capabilities function as strategic intangible resources that enhance organizational sustainability and competitiveness. Practically, this study suggests that policymakers should strengthen MSME sustainability programs through green competency development, innovation support systems, and collaborative ecosystem initiatives involving academia, government, industry, and local communities.

Research Limitations

Despite providing important insights into the determinants of circular business practices among MSMEs, this study has several limitations that should be acknowledged. First, this study focused only on MSMEs operating in the food and beverage sector in East Java, particularly in Surabaya, Malang, and Gresik. Therefore, the findings may not fully represent MSMEs from other industrial sectors or regions with different economic and environmental characteristics. Future studies are encouraged to expand the research scope by involving broader industrial sectors and cross-regional comparisons to improve the generalizability of the findings.

Second, this study employed a cross-sectional research design, which limits the ability to observe changes in organizational behavior and sustainability practices over time. Circular business transformation is a dynamic and long-term process; therefore, future research could adopt longitudinal approaches to better understand the evolution of green capabilities, innovation, and ecosystem collaboration in supporting circular economy implementation.

Third, the data used in this study were collected through self-reported questionnaires from MSME owners and managers. Although this method is widely used in organizational research, it may potentially lead to common method bias and subjective responses. Future studies are recommended to combine survey methods with qualitative approaches such as interviews, observations, or case studies to obtain deeper and more comprehensive insights into circular business implementation.

Fourth, this study only examined Innovation as a mediating variable and Ecosystem Collaboration as a moderating variable within the proposed research model. Other potential factors, such as green organizational culture, digital transformation capability, government support, environmental regulation, and financial readiness, may also influence circular business practices among MSMEs. Therefore, future research should consider integrating these additional variables to develop a more comprehensive understanding of sustainability-oriented business transformation.

Finally, this study primarily adopted the Natural Resource-Based View (NRBV) as the main theoretical perspective. Although NRBV provides a strong explanation regarding environmental capabilities and sustainable competitive advantage, future studies may enrich the theoretical framework by integrating complementary perspectives such as Stakeholder Theory, Dynamic Capability Theory, or Institutional Theory to provide broader insights into the implementation of circular business practices in MSMEs.

Conclusion

This study examined the effects of Green Human Resource Management (GHRM) and Environmental Strategy on Circular Business Practices among MSMEs, with Innovation acting as a mediating variable and Ecosystem Collaboration serving as a moderating variable. The findings reveal that GHRM and Environmental Strategy significantly contribute to the development of circular business practices both directly and indirectly through innovation capability. These results indicate that environmentally oriented organizational capabilities play a critical role in supporting sustainable business transformation among MSMEs. The study also confirms that Innovation functions as an important strategic mechanism that translates green organizational resources into practical circular business

implementation. MSMEs with stronger innovation capabilities are more capable of developing eco-friendly products, improving resource efficiency, and implementing waste reduction and recovery practices. Furthermore, Ecosystem Collaboration strengthens the relationship between Environmental Strategy and Circular Business Practices, suggesting that collaboration among MSMEs, government institutions, suppliers, communities, and other stakeholders is essential for accelerating circular economy adoption. From a theoretical perspective, this study extends the application of the Natural Resource-Based View (NRBV) by demonstrating that green human resources, environmental strategy, innovation, and ecosystem collaboration can function as strategic intangible resources that enhance sustainable competitive advantage. Practically, the findings provide important implications for MSME practitioners and policymakers in designing sustainability-oriented business strategies and collaborative support systems to strengthen circular economy implementation.

Future studies are encouraged to expand the scope of research by involving MSMEs from various industrial sectors and different regions to enhance the generalizability of findings. Comparative studies across industries or countries may provide broader insights into the implementation of circular business practices in diverse economic and cultural contexts. In addition, future research should consider adopting longitudinal research designs to better capture the dynamic process of sustainability transformation and circular business adoption over time. Since circular economy implementation is a long-term organizational process, longitudinal analysis may provide deeper understanding regarding capability development and strategic adaptation among MSMEs. Future studies are also recommended to incorporate additional variables that may influence circular business practices, such as digital transformation capability, green organizational culture, government support, financial readiness, environmental regulation, and sustainable leadership. These variables may provide a more comprehensive explanation of the factors driving sustainability-oriented business transformation. Lastly, future research may enrich the theoretical perspective by integrating the Natural Resource-Based View with other strategic management theories, such as Stakeholder Theory, Institutional Theory, or Dynamic Capability Theory, to provide a more holistic understanding of how MSMEs develop sustainable competitive advantage through circular business practices.

References

- Adner, R. (2017). Ecosystem as structure: An actionable construct for strategy. *Journal of Management*, 43(1), 39–58. <https://doi.org/10.1177/0149206316678451>.
- Andersén, J. (2021). A relational natural-resource-based view on product innovation: The influence of green product innovation and green suppliers on differentiation advantage in small manufacturing firms. *Technovation*, 104(February 2020). <https://doi.org/10.1016/j.technovation.2021.102254>.
- Aranda-Usón, A., Portillo-Tarragona, P., Marín-Vinuesa, L. M., & Scarpellini, S. (2019). Financial resources for the circular economy: A perspective from businesses. *Sustainability* <https://doi.org/10.3390/su11030888>.
- Atanasova, N., Castellar, J. A. C., Pineda-Martos, R., Nika, C. E., Katsou, E., Istenič, D., Pucher, B., Andreucci, M. B., & Langergraber, G. (2021). Nature-Based Solutions and Circularity in Cities. *Circular Economy and Sustainability*, 1(1), 319–332. <https://doi.org/10.1007/s43615-021-00024-1>.
- Banerjee, S. B. (2002). Corporate environmentalism: The construct and its measurement. *Journal of Business Research*, 55(3), 177–191. [https://doi.org/10.1016/S0148-2963\(00\)00135-1](https://doi.org/10.1016/S0148-2963(00)00135-1).
- Capponi, G., & Castaldi, C. (2025). Business as usual? How organisations navigate tensions between circular economy and intellectual property right strategies. *Industry and Innovation*, <https://doi.org/10.1080/13662716.2024.2449262>.
- Chen, Y. S., Lai, S. B., & Wen, C. T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67(4), 331–339. <https://doi.org/10.1007/s10551-006-9025-5>.
- Chirumalla, K., Johansson, G., & Parida, V. (2024). Business ecosystem collaboration for sustainability transitions: A circular economy perspective. *Journal of Cleaner Production*, 434, 140290. <https://doi.org/10.1016/j.jclepro.2024.140290>.
- Chirumalla, K., Kulkov, I., Parida, V., Dahlquist, E., Johansson, G., & Stefan, I. (2024). Enabling battery circularity: Unlocking circular business model archetypes and collaboration forms in the electric vehicle battery ecosystem. *Technological Forecasting and Change*, 199(November Forecasting 2023), <https://doi.org/10.1016/j.techfore.2023.123044>.
- De Angelis, R. (2024). Circular economy business models as progressive business models: Evidence from circular start-ups. *Business Strategy and the Environment*, May, 6303–6314. <https://doi.org/10.1002/bse.3821>.
- Ellen MacArthur Foundation. (2021). Universal circular economy policy goals: Enabling the transition to scale. Ellen MacArthur Foundation. <https://www.ellenmacarthurfoundation.org>.
- Ezeudu, O., & Kennedy, C. (2024). Insights and dynamics of circular business model in developing countries' context: The empirical analysis of the returnable glass bottles process. *Business Strategy and Development*, 7(1), 1–20. <https://doi.org/10.1002/bsd2.349>.
- Fernando, Y., Chiappetta Jabbour, C. J., & Wah, W. X. (2019). Pursuing green growth in technology firms through the connections between environmental innovation and sustainable business performance: Does service capability matter? *Journal of Cleaner Production*, 218, 899–908. <https://doi.org/10.1016/j.jclepro.2019.01.013>.
- Fraj, E., Matute, J., & Melero, I. (2015). Environmental strategies and organizational competitiveness in the hotel industry: The role of learning and innovation as determinants of environmental success. *Tourism Management*, 46, 30–42. <https://doi.org/10.1016/j.tourman.2014.05.009>.
- Gajanjayake, A., Ho, O. T. K., & Iyer-Raniga, U. (2024). Motivations and drivers for adopting sustainability and circular business strategies in businesses in Victoria. *Corporate Social Responsibility and Environmental Management*, 31(1), 169–179. <https://doi.org/10.1002/csr.2559>.
- Geissdoerfer, M., Pieroni, M. P. P., Pigosso, D. C. A., & Soufani, K. (2020). Circular business models: A review. *Journal of Cleaner Production*, 277, 123741. <https://doi.org/10.1016/j.jclepro.2020.123741>.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.
- Jabbar, C. J. C., & Santos, F. C. A. (2008). The central role of human resource management in the search for sustainable organizations. *The International Journal of Human Resource Management*, 19(12), 2133–2154. <https://doi.org/10.1080/09585190802479389>.
- Kirchherr, J., Piscicelli, L., Bour, R., Kostense-Smit, E., Muller, J., Huijbrechtse-Truijens, A., & Hekkert, M. (2018). Barriers to the circular economy: Evidence from the European Union (EU). *Ecological Economics*, 150, 264–272. <https://doi.org/10.1016/j.ecolecon.2018.04.028>.
- Lacy, P., & Rutqvist, J. (2015). Waste to wealth: The circular economy advantage. Palgrave Macmillan.
- McDougall, N., Wagner, B., & MacBryde, J. (2019). An empirical explanation of the natural-resource-based view of the firm. *Production Planning and Control*, 30(16), <https://doi.org/10.1080/09537287.2019.1620361>.
- Megawati, S., Herdiansyah, H., Machmud, A., Antriandarti, E., & Sudirman, S. (2024). Integrating Circular Economy, Digital Economy, and Social Protection Policies To Drive Green Business Innovation: Insights From Indonesia'S Culinary Smes. *Problems and Perspectives in Management*, 22(4), 368–381. [https://doi.org/10.21511/ppm.22\(4\).2024.28](https://doi.org/10.21511/ppm.22(4).2024.28).
- Ministry of National Development Planning/Bappenas. (2021). The future is circular: Circular economy outlook for Indonesia. Ministry of National Development Planning of Indonesia. <https://lcdi-indonesia.id/wp-content/uploads/2021/02/Circular-Economy-Report.pdf>.
- Muafi, & Sugarindra, M. (2023). Green Logistic and Absorptive Capacity on Business Sustainability: The Mediating Role of Circular Economy Implementation. *Journal of Industrial Engineering and Management*, 16(2), 275–293. <https://doi.org/10.3926/jiem.5283>.
- Muzamwese, T. C., Franco-García, L., & Heldeweg, M. A. (2024). The role of sustainable business networks in promoting a Circular Economy in Africa—A systematic literature review. *Wiley Interdisciplinary Reviews: Energy and Environment*, 13(1), 1–19. <https://doi.org/10.1002/wene.506>.
- Neligan, A., Baumgartner, R. J., Geissdoerfer, M., & Schögl, J. P. (2023). Circular disruption: Digitalisation as a driver of circular economy business models. *Business Strategy and the Environment*, 32(3), 1175–1188. <https://doi.org/10.1002/bse.3100>.
- Nikam, J., & Melati, K. (2023). Aiding Circular Business Transitions in Southeast Asian Small and Medium sized Enterprises (SMEs) Through Identifying Barriers and Enablers—A Case Study of Thailand based SMEs. *Circular Economy and Sustainability*, <https://doi.org/10.1007/s43615-023-00318-6>.
- Tan, M., & Ng, E. (2023). MSMEs critical for a greener future in Southeast Asia. *Asian Development Bank Southeast Asia Development Symposium*. <https://seads.adb.org/articles/msmes-critical-greener-future-southeast-asia>.
- Tang, G., Chen, Y., Jiang, Y., Paille, P., & Jia, J. (2018). Green human resource management practices: Scale development and validity. *Asia Pacific Journal of Human Resources*, 56(1), 31–55. <https://doi.org/10.1111/1744-7941.12147>.
- Trevisan, A. H., Zacharias, I. S., Castro, C. G., & Mascarenhas, J. (2021). Circular economy actions in business ecosystems driven by digital technologies. *Procedia CIRP*, <https://doi.org/10.1016/j.procir.2021.05.074>.
- United Nations Development Programme (UNDP) & Ministry of National Development Planning/Bappenas. (2022). Circular economy for a low carbon future Indonesia. UNDP Indonesia. <https://www.undp.org/indonesia/publications/circular-economy-low-carbon-future-indonesia>.
- von Kolpinski, C., Yazan, D. M., & Fraccascia, L. (2023). The impact of internal company dynamics on sustainable circular business development: Insights from circular startups. *Business Strategy and the Environment*, 32(4), 1931–1950. <https://doi.org/10.1002/bse.3228>.
- Wang, X., Kim, J., Kim, J., & Koh, Y. (2024). Application of Natural-Resource Based View to Nature-Based Tourism Destinations. *Sustainability (Switzerland)*, 16(6), 1–16. <https://doi.org/10.3390/su16062375>.
- World Economic Forum. (2022, June 14). What is the circular economy, and why does it matter that it is shrinking? *World Economic Forum*. <https://www.weforum.org/stories/2022/06/what-is-the-circular-economy/>.
- Zhaksybayeva, N., Serikkyzy, A., Baktymbet, A., & Yousafzai, S. (2024). Circular shifts: insights into kazakhstan's circular business ecosystem. *Cogent Business and Management*, <https://doi.org/10.1080/23311975.2024.2431652>.