9th International Seminar of Research Month 2024
Volume 2025
http://dx.doi.org/10.11594/nstp.2025.4705

NST Proceedings
OPEN ACCESS

Conference Paper

Impact of Green Creativity on Industrial Sustainability: A literature Review

Wiwik Handayani*, Nurkholish Majid, Virginia Mandasari, Septian Sony Utomo, Faiz Umar Hadi, M. Idris Ariyanto

Management Study Program, Faculty of Economic, Universitas Pembangunan Nasional "Veteran" Jawa Timur, Surabaya 60294, Indonesia

*Corresponding author:
E-mail:
wiwik.em@upnjatim.ac.id

ABSTRACT

This research abstract provides an overview of the impact of green creativity on industrial sustainability initiatives based on a literature review of relevant studies. The review encompasses a range of research articles that explore the relationship between green creativity and sustainability outcomes in various industrial contexts. The key findings from the literature review, including the positive influence of green creativity on organizational sustainability, pollution control, and environmental management. Studies emphasize the importance of fostering a culture of creativity, integrating green technologies, and implementing green HRM practices to enhance sustainability efforts and reduce environmental impact within organizations. Furthermore, research acknowledges limitations within the existing literature, such as the need for more cross-industry studies, longitudinal research, and standardized measurement tools to assess green creativity's impact on sustainability consistently. Recommendations for further research are proposed, including the exploration of cross-industry studies, longitudinal assessments of green creativity, the development of standardized measurement tools, interdisciplinary research approaches, and investigations into the policy implications of promoting green creativity in organizations and industries. In conclusion, this research uunderline the critical role of green creativity for driving industrial sustainability initiatives and environmental stewardship, providing a foundation for future research to advance our understanding of how green creativity contributes to sustainable practices and environmental responsibility in industrial settings.

Keywords: Green creativity, waste reduction, pollution control, industrial sustainability

Introduction

In the era of industrialization, environmental issues have gained paramount importance due to the significant impact of industrial activities on the environment. The transition towards Industry 4.0 and the subsequent evolution towards Industry 5.0 emphasize the need for sustainable practices in manufacturing and production processes (Yitmen, 2023; Kumar et al., 2020). Green processes and technologies play a crucial role in achieving positive sustainability outcomes in manufacturing (Vrchota et al., 2020). The adoption of Business Intelligence Systems (BIS) is highlighted as a means to address sustainability challenges in the Industry 4.0 era (Ahmad et al., 2020). Moreover, sustainability has become a central theme in reshaping business operations and strategies, especially in industries like textiles and clothing (Sadika, 2024).

Efforts to quantify industrial land use dynamics are essential for sustainable industrial management, particularly in large-scale areas (Huang et al., 2018). Sustainable energy consumption is a key focus in the Industry 4.0 era, with research investigating techniques to ensure energy efficiency

How to cite:
Handayani, W., Majid, N., Utomo, S. S., Hadi, F. U., & Ariyanto, M. I. (2025). Impact of green creativity on industrial sustainability: A literature review. *9th International Seminar of Research Month 2024*. NST Proceedings. pages 26-32. doi: 10.11594/ nstp.2025.4705

(Awogbemi et al., 2022). Frameworks like the Interval Type-2 Fuzzy Super SBM Network DEA are being developed to assess sustainability performance in logistics, emphasizing circular economy strategies (Pishdar et al., 2021). Additionally, understanding consumers' changing intentions toward sustainable practices is crucial for guiding industrial enterprises toward sustainable actions in the supply chain (Yang, 2023).

The importance of environmental efficiency in industrial sectors is underscored by studies evaluating industrial eco-efficiency and the impact of economic growth, foreign direct investment, and innovation on environmental efficiency (Guo et al., 2021; Wang et al., 2018). Industrial agglomeration and urbanization have been linked to environmental pollution, highlighting the need to address sustainability concerns in industrial development (Zhu & Xia, 2018). Sustainable development in urban industrialization requires attention to various fields like social, economic, technology, administration, ecology, and law to ensure balanced development and reduce welfare inequalities (Budiman, 2021).

Environmental regulations play a significant role in shaping the comparative advantage of resource-based industries, with a positive impact noted on these industries (Jin, 2024). The goals of Industry 5.0 include creating more sustainable workplaces and adopting environmentally friendly industrial techniques (Yitmen, 2023). The application of Industry 4.0 technologies in small and medium enterprises (SMEs) is crucial for ethical and sustainable operations in the circular economy era (Kumar et al., 2020). Zero-defect manufacturing practices are being explored to achieve sustainable and resilient manufacturing in the Industry 4.0 era (Psarommatis et al., 2023).

To address the pressing need for reducing waste and pollution in the industrial sector and promoting green outcomes, innovative approaches such as green creativity are essential. Green creativity involves the development and implementation of novel ideas, technologies, and processes that prioritize environmental sustainability Wirda et al. (2019). By harnessing green innovation, industries can achieve a competitive advantage while contributing to environmental protection (Chen & Liu, 2018). This shift towards green practices is crucial in the era of industrialization, where pollution and waste generation have significant negative impacts on the environment and human health (Velayatzadeh, 2023).

One effective strategy to reduce waste and pollution is through the utilization of industrial by-products and waste materials in the production of composite materials (Ali et al., 2021). This approach not only minimizes environmental pollution but also reduces the reliance on synthetic materials, thereby promoting sustainability. Additionally, the valorization of waste residues through industrial biotechnology offers a sustainable solution for converting waste into valuable products, such as enzymes, through microbial fermentation (Qayyum, 2023). Such approaches align with the principles of circular economy and resource efficiency, essential for achieving green outcomes in industrial processes.

Furthermore, the adoption of innovative waste management techniques, such as phytoremediation, can help reduce waste concentrations and address environmental pollution challenges effectively (Widyastuti & Suprayitno, 2020). Phytoremediation leverages plant-based systems to remediate contaminated soil or water, offering a natural and sustainable approach to waste treatment. Similarly, the exploitation of sulfate-reducing bacteria presents a promising avenue for the simultaneous treatment of metallic and non-metallic wastes, contributing to pollution control and environmental remediation (Hussain et al., 2016).

The purpose of this research is to explore and assess the role of sustainable practices, technologies, and strategies in the era of industrialization, with a focus on Industry 4.0 and the emerging Industry 5.0 paradigm. The study aims to investigate how the integration of green processes, business intelligence systems, and innovative waste management techniques can enhance environmental efficiency, reduce pollution, and promote sustainability within industrial sectors. By examining the adoption of circular economy principles, green creativity, and the utilization of industrial by-products, the research seeks to provide insights into effective approaches for achieving positive

sustainability outcomes in manufacturing and production processes. Additionally, this study will evaluate the impact of environmental regulations, industrial agglomeration, and urbanization on sustainability, with a particular emphasis on resource-based industries. Through this comprehensive analysis, the research intends to contribute to the development of sustainable industrial management frameworks that address the challenges posed by modern industrial activities and align with the goals of Industry 5.0 for creating environmentally friendly and resilient industrial systems.

Material and Methods

To investigate the role of green creativity in reducing waste and pollution in the industrial sector, a comprehensive literature review will be conducted. The research will focus on synthesizing existing knowledge and insights from relevant studies to understand the impact of green creativity on environmental sustainability practices. The following research method will be employed:

1. Literature Search: Relevant academic databases such as Scopus, Web of Science, and Google Scholar will be systematically searched using keywords such as "green creativity," "waste reduction," "pollution control," and "industrial sustainability." The search will include articles published in peer-reviewed journals, conference proceedings, and research reports.
2. Synthesis of Findings: The findings from the literature review will be synthesized to provide a comprehensive overview of the role of green creativity in reducing waste and pollution in industrial contexts. The review will highlight best practices, challenges, and opportunities for integrating green creativity into sustainable industrial practices.
3. Implications and Recommendation: Based on the synthesized findings, implications for industry practitioners, policymakers, and researchers will be discussed. Recommendations for promoting green creativity, enhancing waste reduction strategies, and fostering environmental sustainability in industrial operations will be provided. By employing a rigorous literature review methodology, this research aims to contribute to the understanding of how green creativity can be leveraged to reduce waste and pollution in industrial settings, ultimately promoting sustainable practices and environmental stewardship.

Results and Discussion

Green creativity for waste reduction

Green creativity plays a crucial role in driving sustainable practices and waste reduction initiatives across various industries. This literature review aims to investigate the influence of green creativity on waste reduction strategies, drawing insights from a variety of studies that emphasize the importance of innovative approaches in promoting environmental sustainability. Jiang et al. (2020) emphasize the significance of measuring green creativity among employees in green enterprises, highlighting the need for creative solutions to tackle environmental challenges. Developing green creativity skills among employees can lead to the generation of innovative ideas for waste reduction and pollution control (Jiang et al., 2020). Vasconcelos et al. (2019) advocate for the integration of Lean and Green practices to improve operational performance and decrease waste levels in production processes. By merging lean manufacturing principles with environmental management strategies, organizations can achieve synergies that contribute to waste reduction and operational efficiency (Vasconcelos et al., 2019). Bamisaye & Adeitan (2018) focus on green supply chain management in the Nigerian garment industry, stressing the importance of effective waste disposal practices.

Through a comprehensive literature review, the study identifies barriers to recycling, environmental performance indicators, and drivers for implementing green supply chain practices to minimize waste generation (Bamisaye & Adeitan, 2018). Malokani et al. (2023) explore the impact of waste reduction, green employee behavior, and resource use on environmental strategy in

manufacturing companies. The study underscores the role of employee participation in green initiatives, such as recycling programs, in achieving significant reductions in environmental impacts and promoting sustainable waste management practices (Malokani et al., 2023). Taha and Abbas (2023) shed light on the role of environmental monitoring in fostering green creativity. By highlighting the importance of meeting environmental protection requirements, green creativity is positioned as a key driver for sustainable waste reduction and pollution control efforts (Taha & Abbas, 2023). Nassani et al. (2023) delve into zero waste management practices, examining the direct impact of green technology on waste reduction initiatives. The study underscores the importance of adopting green technologies and implementing green supply chain practices to achieve zero waste goals (Nassani et al., 2023). By nurturing innovative solutions, integrating lean and green practices, and promoting green supply chain management, organizations can effectively reduce waste generation, minimize pollution, and advance environmental sustainability.

Green creativity for pollution control

Green creativity plays a crucial role in driving innovative solutions for pollution control and environmental sustainability across various sectors. This literature review synthesizes key findings from relevant studies that explore the impact of green creativity on pollution control strategies and initiatives. Qiu et al. (2020) demonstrate the cost-effectiveness of coupled green–gray stormwater control measures for non-point source pollution. The study highlights that integrating green and gray infrastructure not only controls costs effectively but also enhances pollution control during high-intensity rainfall events, making it an optimal scheme for urban pollution prevention ("Industry 4.0, Artificial Intelligence, and Mechanical Engineering towards Industry 5.0", 2024). Guo et al. (2022) focus on the spatial effects of green technology innovation on provincial environmental pollution in China. The research reveals that green technological innovation directly suppresses provincial environmental pollution, emphasizing the critical role of technological advancements in pollution control efforts at the regional level (Yitmen, 2023). Fatoki (2019) finds that green entrepreneurial orientation positively influences green performance by reducing pollution, waste, and energy consumption. This highlights the significant impact of proactive green practices on pollution control and environmental sustainability within organizations (Kumar et al., 2020). Yuying et al. (2009) apply green input-output matrix analysis to sustainable development in China, emphasizing the importance of resource restoration and pollution control.

The study underscores the need for environmentally conscious practices to mitigate pollution and promote sustainable resource management (Vrchota et al., 2020). Zahrani (2022) investigates the mediating role of green team creativity and green human resource management practices in organizational sustainability. The analysis reveals that fostering green creativity and implementing green HRM practices significantly contribute to pollution control and overall organizational sustainability (Ahmad et al., 2020). Li (2023) highlights the role of green dynamic capabilities and green creativity in environmental and social innovation behavior. The study underscores the importance of nurturing green creativity to drive sustainable growth and enhance pollution control efforts within organizations (Sadika, 2024). Jiang et al. (2020) focus on measuring green creativity among employees in green enterprises. By developing a scale for assessing employee green creativity, the study emphasizes the importance of fostering creative solutions to address environmental challenges, including pollution control (Huang et al., 2018). The critical role of green creativity in pollution control efforts and environmental management by promoting innovative solutions, integrating green technologies, and fostering a culture of sustainability, organizations can effectively mitigate pollution, reduce environmental impact, and advance pollution control initiatives.

Green creativity for industrial sustainability

Green creativity has a crucial role in promoting sustainable practices and fostering environmental stewardship within industrial settings. This literature review synthesizes key findings from relevant studies that investigate the impact of green creativity on industrial sustainability initiatives. Zahrani et al. (2022) highlight the mediating roles of team creativity and green human resource management practices in enhancing organizational sustainability. The study emphasizes the positive influence of green team creativity and HRM practices on promoting sustainability within organizations, stressing the importance of cultivating a culture of creativity and environmental consciousness. Huo et al. (2020) delve into the commitment of top management teams to human resource management to foster green creativity.

By underlining the role of industrial competitiveness in driving innovation and the adoption of clean technology, the study underscores the significance of developing appropriate regulatory policies to support environmental sustainability. Alyahya et al. (2023) explore the antecedents of hotels' green creativity, focusing on the impact of green HRM, environmentally specific servant leadership, and psychological green climate. The study reveals that green dynamic capabilities significantly influence employees' green creativity, highlighting the importance of organizational climate and leadership in promoting sustainable practices. Aeknarajindawat and Jermsittiparsert (2019) investigate the mediating role of green creativity in the relationship between proactive green innovation, reactive green innovation, and the performance of green product development. The study emphasizes the benefits of green innovations in reducing pollution, enhancing productivity, and improving accountability, ultimately contributing to the reputation and sustainability of businesses. Nassani et al. (2023) examine zero waste management practices, emphasizing the role of green technology and the green supply chain in achieving sustainable waste reduction. The study underscores the importance of integrating green compliance and ecological aspects into supply chain management to guide organizations toward zero waste management and environmental sustainability. Jia et al. (2018) explore the continuous mediating effects of green HRM on employees' green passion through transformational leadership and green creativity. The study highlights how addressing environmental challenges through innovation enables organizations to gain competitive advantages and contribute to sustainable practices.

Green creativity in driving industrial sustainability initiatives by fostering a culture of creativity, implementing green HRM practices, and integrating green technologies into supply chain management, organizations can enhance their sustainability efforts, reduce environmental impact, and promote a culture of environmental responsibility.

Conclusion

The literature review has provided valuable insights into the impact of green creativity on industrial sustainability initiatives. Studies have highlighted the positive influence of green creativity on organizational sustainability, pollution control, and environmental management. By fostering a culture of creativity, integrating green technologies, and implementing green HRM practices, organizations can enhance their sustainability efforts and reduce environmental impact. Despite the valuable contributions of the reviewed studies, some limitations exist. The literature predominantly focuses on specific industries or regions, limiting the generalizability of findings. Additionally, there is a need for more longitudinal studies to assess the long-term impact of green creativity on industrial sustainability. Furthermore, the measurement of green creativity and its effects on sustainability outcomes may vary across studies, warranting standardized assessment tools for better comparability.

Future research should explore the impact of green creativity across diverse industries to understand its universal applicability and effectiveness in promoting sustainability. Conducting longitudinal studies to track the long-term effects of green creativity on industrial sustainability outcomes can provide valuable insights for sustainable development. Developing standardized

measurement tools for assessing green creativity and its influence on sustainability can enhance comparability and facilitate meta-analyses. Encouraging interdisciplinary research that integrates perspectives from psychology, sustainability, and innovation can offer a holistic understanding of the role of green creativity in industrial sustainability. Investigating the policy implications of promoting green creativity in organizations and industries can guide policymakers in formulating strategies to support sustainable practices. By addressing these recommendations, future research can further advance our understanding of how green creativity contributes to industrial sustainability and environmental stewardship.

Acknowledgment

This work was financially supported by LPPM UPN "Veteran" Jawa Timur through "DIPA 2024". Therefore, we are grateful for this funding and support of this research.

References

Aeknarajindawat, N., & Jermsittiparsert, K. (2019). The mediating role of green creativity in the relationship between proactive green innovation, reactive green innovation and the performance of green product development: a case of thai sports manufacturing firms. *Conference: Journal of Human Sport and Exercise - 2019 - Summer Conferences of Sports Science.* https://doi.org/10.14198/jhse.2019.14.proc5.45

Ahmad, S., Miskon, S., Alabdan, R., & Tlili, I. (2020). Towards sustainable textile and apparel industry: exploring the role of business intelligence systems in the era of industry 4.0. *Sustainability, 12*(7), 2632. https://doi.org/10.3390/su12072632

Ali, M., Hossain, M., Ahmed, S., & Chowdhury, A. (2021). Fabrication and characterization of composite materials using multiple waste materials (leather & jute fabrics) and unsaturated polyester resin. *Nano Hybrids and Composites, 33,* 1-11. https://doi.org/10.4028/www.scientific.net/nhc.33.1

Alyahya, M., Aliedan, M., Agag, G., & Abdelmoety, Z. (2023). The antecedents of hotels' green creativity: the role of green hrm, environmentally specific servant leadership, and psychological green climate. *Sustainability, 15*(3), 2629. https://doi.org/10.3390/su15032629

Awogbemi, O., Kallon, D., Owoputi, A., & Mansaray, K. (2022). Sustainable energy consumption in the industry 4.0 era. *IEOM Society International.* https://doi.org/10.46254/af03.20220037

Bamisaye, O., & Adeitan, A. (2018). A review of green supply chain management on waste disposal: a study of Nigerian garment industry. *Advances in Research, 17*(3), 1-9. https://doi.org/10.9734/air/2018/45017

Budiman, B. (2021). Sustainable development in urban industrialization era (case study bontang city). *Dia Jurnal Ilmiah Administrasi Publik, 19*(2), 224-236. https://doi.org/10.30996/dia.v19i2.5577

Chen, J. and Liu, L. (2018). Profiting from green innovation: the moderating effect of competitive strategy. *Sustainability, 11*(1), 15. https://doi.org/10.3390/su11010015

Fatoki, O. (2019). Green entrepreneurial orientation and firm performance in South Africa. *Journal of Entrepreneurship and Sustainability Issues, 7*(1), 247-262. https://doi.org/10.9770/jesi.2019.7.1(19)

Guo, L., Xu, Y., & Tan, W. (2022). *Spatial effects of green technology innovation on provincial environmental pollution in China*. https://doi.org/10.21203/rs.3.rs-1234275/v1

Guo, M., Hong, L., & Liu, W. (2021). The impact of economic growth, fdi, and innovation on environmental efficiency of the logistics industry in provinces along the belt and road in china: an empirical study based on the panel tobit model. *Science Progress, 104*(2), 003685042110180. https://doi.org/10.1177/00368504211018054

Huang, L., Wu, Y., Zheng, Q., et al. (2018). Quantifying the spatiotemporal dynamics of industrial land uses through mining free access social datasets in the mega hangzhou bay region, China. *Sustainability, 10*(10), 3463. https://doi.org/10.3390/su10103463

Huo, W., Li, X., Zheng, M., Liu, Y., & Yan, J. (2020). Commitment to human resource management of the top management team for green creativity. *Sustainability, 12*(3), 1008. https://doi.org/10.3390/su12031008

Hussain, A., Hasan, A., Javid, A., & Qazi, J. (2016). Exploited application of sulfate-reducing bacteria for concomitant treatment of metallic and non-metallic wastes: a mini review. *3 Biotech, 6*(2), 1-10. https://doi.org/10.1007/s13205-016-0437-3

Jia, J., Liu, H., Chin, T., & Hu, D. (2018). The continuous mediating effects of GHRM on employees' green passion via transformational leadership and green creativity. *Sustainability, 10*(9), 3237. https://doi.org/10.3390/su10093237

Jiang, H., Wang, K., Lu, Z., Liu, Y., Wang, Y., & Li, G. (2020). Measuring green creativity for employees in green enterprises: scale development and validation. *Sustainability, 13*(1), 275. https://doi.org/10.3390/su13010275

Jiang, H., Wang, K., Lu, Z., Liu, Y., Wang, Y., & Li, G. (2020). Measuring green creativity for employees in green enterprises: scale development and validation. *Sustainability, 13*(1), 275. https://doi.org/10.3390/su13010275

Jin, Z. (2024). The specific impact of environmental regulations on the comparative advantage of resource-based industries. *Lecture Notes in Education Psychology and Public Media, 38*(1), 1-5. https://doi.org/10.54254/2753-7048/38/20240571

Kumar, R., Singh, R., & Dwivedi, Y. (2020). Application of industry 4.0 technologies in smes for ethical and sustainable operations: analysis of challenges. *Journal of Cleaner Production, 275,* 124063. https://doi.org/10.1016/j.jclepro.2020.124063

Li, C. (2023). Role of green dynamic capabilities on environmental and social innovation behavior: mediating of green creativity and moderating of innovation proclivity. *Sustainability, 15*(20), 14996. https://doi.org/10.3390/su152014996

Malokani, D., Qureshi, A., Inayat, A., & Mahar, Q. (2023). Impact of reduction of waste and waste, green employee behavior and reduction of resource use on environmental strategy: manufacturing companies top management's perception. *Journal of Social Sciences Review, 3*(2), 27-39. https://doi.org/10.54183/jssr.v3i2.221

Nassani, A., Hussain, H., Condrea, E., Grigorescu, A., Yousaf, Z., & Haffar, M. (2023). Zero waste management: investigation of green technology, the green supply chain, and the moderating role of csr intentions. *Sustainability, 15*(5), 4169. https://doi.org/10.3390/su15054169

Nassani, A., Hussain, H., Condrea, E., Grigorescu, A., Yousaf, Z., & Haffar, M. (2023). Zero waste management: investigation of green technology, the green supply chain, and the moderating role of csr intentions. *Sustainability, 15*(5), 4169. https://doi.org/10.3390/su15054169

Pishdar, M., Shakib, M., Antuchevičienė, J., & Vilkonis, A. (2021). Interval type-2 fuzzy super sbm network dea for assessing sustainability performance of third-party logistics service providers considering circular economy strategies in the era of industry 4.0. *Sustainability, 13*(11), 6497. https://doi.org/10.3390/su13116497

Psarommatis, F., Fraile, F., Mendonça, J., Meyer, O., Lazaro, O., & Kiritsis, D. (2023). Editorial: zero defect manufacturing in the era of industry 4.0 for achieving sustainable and resilient manufacturing. *Frontiers in Manufacturing Technology, 3.* https://doi.org/10.3389/fmtec.2023.1124624

Qayyum, A. (2023). Valorization of lignocellulosic waste using *Halothermophilic bacillus* sp.: A sustainable approach for the production of glycoside hydrolase. 1-27. https://doi.org/10.21203/rs.3.rs-3204586/v1

Qiu, S., Yin, H., Deng, J., & Li, M. (2020). Cost-effectiveness analysis of green–gray stormwater control measures for non-point source pollution. *International Journal of Environmental Research and Public Health, 17*(3), 998. https://doi.org/10.3390/ijerph17030998

Sadika, D. (2024). Sustainability trends in textile and clothing industry of bangladesh before and post pandemic era. *European Journal of Theoretical and Applied Sciences, 2*(2), 420-436. https://doi.org/10.59324/ejtas.2024.2(2).36

Taha, I. and Abbas, A. (2023). The role of environmental monitoring in promoting green creativity. *Economics and Business, 37*(1), 15-36. https://doi.org/10.2478/eb-2023-0002

Vasconcelos, D., Viana, F., & Neto, J. (2019). Lean and green: the contribution of lean production and environmental management to the waste reduction. *Revista de Administração da UFSM, 12*(2), 365-383. https://doi.org/10.5902/1983465921750

Velayatzadeh, M. (2023). *Heavy metals in surface soils and crops*. https://doi.org/10.5772/intechopen.108824

Vrchota, J., Pech, M., Rolínek, L., & Bednář, J. (2020). Sustainability outcomes of green processes in relation to industry 4.0 in manufacturing: Systematic review. *Sustainability, 12*(15), 5968. https://doi.org/10.3390/su12155968

Wang, X., Wu, Q., Majeed, S., & Sun, D. (2018). Fujian's industrial eco-efficiency: Evaluation based on SBM and the empirical analysis of Influencing factors. *Sustainability, 10*(9), 3333. https://doi.org/10.3390/su10093333

Widyastuti, D., & Suprayitno, D. (2020). Effectiveness of kangkungan (*Ipomea crassicaulis*) to reduce bod levels of tofu waste using the phytoremediator method. *International Journal of Research and Studies Publishing, 10*(10), 60-64. https://doi.org/10.29322/ijsrp.10.10.2020.p10611

Wirda, F., Herizon, H., Herri, H., Elfindri, E., & Rivai, H. (2019). Green innovation as a determinant of competitive advantage in creative industry in Indonesia. *Proceedings of the Social and Humaniora Research Symposium (SoRes 2018).* https://doi.org/10.2991/sores-18.2019.94

Yang, H. (2023). Sustainable luxury purchase behavior in the post-pandemic era: a grounded theory study in China. *Frontiers in Psychology, 14.* https://doi.org/10.3389/fpsyg.2023.1260537

Yitmen, I. (2023). Investigating the causal relationships among enablers of the construction 5.0 paradigm: integration of operator 5.0 and society 5.0 with human-centricity, sustainability, and resilience. *Sustainability, 15*(11), 9105. https://doi.org/10.3390/su15119105

Yuying, W., Yue, X., & Yan, F. (2009). Application of green input output matrix to sustainable development in China. https://doi.org/10.1109/picmet.2009.5261974

Zahrani, A. (2022). Team creativity and green human resource management practices' mediating roles in organizational sustainability. *Sustainability, 14*(19), 12827. https://doi.org/10.3390/su141912827

Zahrani, A. (2022). Team creativity and green human resource management practices' mediating roles in organizational sustainability. *Sustainability, 14*(19), 12827. https://doi.org/10.3390/su141912827

Zhu, Y. and Xia, Y. (2018). Industrial agglomeration and environmental pollution: evidence from China under new urbanization. *Energy & Environment, 30*(6), 1010-1026. https://doi.org/10.1177/0958305x18802784