Green Decisions in Sports: A TPB-Based Study on Sustainable Turf Equipment Adoption in Indonesian Golf Courses

Rahmawati Fitriyah[1], Aldina Shiratina[2]

[1] Faculty of Economics and Business, Universitas Mercu Buana, Jakarta, Indonesia
[2] Faculty of Economics and Business, Universitas Mercu Buana, Jakarta, Indonesia

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Abstract: This study investigates how green knowledge, green economic value, and green perceived quality influence the purchase intention of green turf equpment in golf courses. As the environmental impact of the sports sector gains attention, golf emerges as a resource-intensive activity due to its high consumption of water, energy, and chemicals, contributing to pollution and ecological degradation. In Indonesia, with approximately 170 golf courses in operation, the adoption of sustainable technologies remains limited despite growing environmental concerns. Grounded in the Theory of Planned Behavior (TPB), this study focuses on Generation X decision-makers responsible for equipment purchasing at golf courses. Data from 142 respondents were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The study confirms that green knowledge and green perceived quality significantly drive purchase intention for green turf equipment, while green economic value shows no effect. This suggests that Generation X consumers prioritize quality and environmental responsibility over economic considerations, underscoring the importance of psychological and value-based factors in sustainable purchasing.

Keywords: Green knowledge, Green economic value, Green perceived quality, Purchase intention, green turf equipment, Golf course sustainability, Theory of Planned Behavior

1. INTRODUCTION

Sustainability has become a pressing global issue due to increasing environmental pressures driven by economic growth, urbanization, and excessive natural resource consumption. According to the World Bank (2025), environmental pollution poses severe threats to human health and ecosystems, with significant economic losses particularly impacting low- and middle-income countries. Indonesia ranks among the world's top contributors to air pollution, resulting in reduced life expectancy and urgent demands for cross-sectoral environmental action (AQLI, 2023; BBC Indonesia, 2023).

The sports sector, traditionally overlooked in environmental discourse, is gaining attention for its substantial resource use and pollution contributions. Golf, in particular, requires intensive turf maintenance involving high water, energy, and chemical inputs, which generate considerable greenhouse gas emissions and environmental impacts (Bekken et al., 2024; Ow & Chan, 2021; Matz et al., 2025). Despite Indonesia's growing golf industry with 170 courses nationwide the adoption of sustainable turf maintenance technologies remains low, hindered by limited awareness, economic constraints, and perceived risks.

This study applies the Theory of Planned Behavior to examine how green knowledge, economic value, and perceived quality influence the purchase intention of green turf equipment among Generation X decision-makers in Indonesian golf courses, addressing a critical but underexplored area of sustainable sports management.

Previous studies have demonstrated that green knowledge, green perceived quality, and green economic value significantly influence consumers' green purchase intentions. Green knowledge enhances consumers' understanding of the environmental impacts of conventional products and opens opportunities for transitioning to green alternatives (Zhang et al., 2024). Green perceived quality plays a crucial role in shaping positive

perceptions of the performance and benefits of green products, often correlating strongly with purchase intention when the perceived quality matches or exceeds conventional products (Yadav & Pathak, 2017). Meanwhile, green economic value appeals especially to Generation X consumers, who tend to adopt sustainable consumption based on pragmatic and rational (Dabija & Bejan, 2018).

However, some studies report inconsistent findings, indicating that green knowledge, green perceived quality and green economic value may not always directly impact purchase intention, with effects potentially mediated by other variables or influenced by context (Yulianingsih et al., 2025; Mabkhot et al., 2024; Jan et al., 2019). While much research on green purchase intention focuses on individual consumers, there is a lack of studies examining professional decision-making in technical and investment-intensive industries like golf course management, where Generation X dominates purchasing authority.

This study addresses this gap by investigating how green knowledge, green economic value, and green perceived quality affect green purchase intention for green turf equipment among Generation X decision-makers in the Indonesian golf industry.

1.1 Problem Formulation

1. Does Green Knowledge (GK) affect Purchase Intention (PI) for green turf equipment?
2. Does Green Perceived Quality (GPQ) affect Purchase Intention (PI) for green turf equipment?
3. Does Green Economic Value (GEV) affect Purchase Intention (PI) for green turf equipment?

2. LITERATURE REVIEW

2.1 Theory of Planned Behavior (TPB)

As discussed earlier, the adoption of green turf equipment in Indonesia's golf industry is influenced by various psychological and social factors. To explore the determinants of purchase intention, this study adopts the Theory of Planned Behavior (TPB), a widely used framework for predicting human behavior (Ajzen, 1991). TPB highlights three core predictors of behavioral intention: attitude towards behavior, subjective norm (perceived social pressure), and perceived behavioral control, all of which have been applied extensively in environmental and green consumption research.

In the context of purchasing green turf equipment, these constructs explain how decision-makers' positive attitudes toward sustainability, perceived expectations from peers or stakeholders, and confidence in their ability to adopt new technology collectively influence their purchase intentions. This study therefore examines the roles of green knowledge, perceived quality, and economic value in shaping these TPB components and, ultimately, the intention to invest in green turf equipment technologies among Generation X professionals in the Indonesian golf industry.

2.2 Sustainable Development Goals (SDGs) and Sustainable Golf Practice

This study supports two key Sustainable Development Goals (SDGs) established by the United Nations: SDG 12 Responsible Consumption and Production and SDG 13 Climate Action. SDG 12 aims to ensure sustainable consumption and production patterns, with Target 12.2 emphasizing efficient management of natural resources by 2030 (Goal 12, n.d.). In the context of golf course maintenance, the reliance on fossil fuel-powered machinery contradicts SDG 12 principles due to its contribution to pollution and greenhouse gas emissions.

Research by Braun et al. (2023) highlights the importance of transitioning to more efficient, low-carbon technologies in turf maintenance, such as adopting electric or hybrid equipment, which significantly reduces fossil fuel consumption and carbon emissions. Similarly, SDG 13 focuses on urgent climate action, with Target 13.2 stressing the integration of climate measures into national policies to mitigate climate change impacts (*Goal 13*, n.d.). Fossil fuel use in golf course machinery exacerbates global warming, while adopting renewable energy-powered alternatives supports SDG 13 by lowering carbon footprints (Braun et al., 2023).

Thus, promoting green turf equipment aligns with global efforts to reduce environmental impacts and advance sustainable golf practices, contributing directly to the achievement of SDG 12 and SDG 13.

2.3 Green Purchase Intention (GPI)

Green purchase intention is a consumer's likelihood and willingness to prioritize environmentally friendly products over conventional alternatives based on beliefs, values, knowledge, and attitudes (Ahmad & Zhang, 2020). It reflects consumers' tendency to engage in sustainable purchasing behavior driven by environmental concern and pro-environmental attitudes (Chen et al., 2024).

2.4 Green Knowledge (GK)

Green knowledge refers to consumer awareness of environmentally friendly products and the efficient use of energy and resources (Wang & Hazen, 2016). It plays a key role in encouraging sustainable consumption, as consumers with higher green knowledge tend to prefer products that minimize environmental harm (Mohd Suki, 2015; Michaud & Llerena, 2011). Green knowledge also supports improved environmental performance by promoting sustainable practices within businesses (Saleem et al., 2024; Salimi, 2019).

H1: Green Knowledge positively and significantly influences purchase behavioral intention.

2.5 Green Perceived Quality (GPQ)

Green perceived quality refers to consumers' evaluation of a product's overall environmental superiority, reliability, durability, and effectiveness compared to conventional alternatives (Nekmahmud & Farkas, 2020). It reflects consumers' perception of the benefits, quality of natural ingredients, and eco-friendly attributes, which influence their trust and satisfaction with green products (Hashish et al., 2022). Higher green perceived quality has been shown to positively affect consumers' green purchase intention by reinforcing the product's value and environmental benefits (Wibowo et al., 2022; Leonardo & Riza, 2023).

H2: Green Perceived Quality positively and significantly influences purchase behavioral intention.

2.6 Green Economic Value (GEV)

Hassan et al. (2022) define economic value as the direct monetary aspect reflected in price, discounts, expenditures, and investments. In the context of green products, this value is considered equivalent to the functional value, which is derived from product attributes such as durability, reliability, and price (Jan et al., 2019). A positive economic value serves as an economic driver that accelerates purchasing decisions, as consumers perceive that the costs incurred are commensurate with the benefits obtained (Watanabe et al., 2020).

H3: Green Economic Value positively and significantly influences purchase behavioral intention.

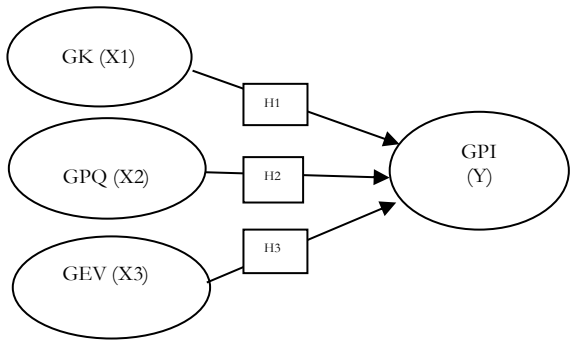

Figure 1: Conceptual Framework
Source: Researcher

Result and Discussion

3.1 Result

The table below presents the complete results of the calculations using SmartPLS 4.0.

Tabel. 3 Hypothesis Test

Variable	Koefisien	t-statistic	p- value	Result
GK (X1) -> GPI (Y)	0.276	3.027	0.002	Supported
GPQ (X2) -> GPI (Y)	0.481	6.056	0.000	Supported
GEV (X3) -> GPI (Y)	0.038	0.408	0.684	Not Supported

Source: Researcher

3.2 The Influence of Green Knowledge on Purchase Intention

The analysis shows that green knowledge (GK) has a positive and significant effect on purchase intention (PI), with a coefficient of 0.276 and a p-value of 0.002. This indicates that the more consumers know about eco-friendly products and green technologies, the more likely they are to purchase sustainable turf equipment. In the case of Generation X, this relationship becomes particularly relevant, as this cohort is generally well-educated and values practical information in their decision-making.

This finding aligns with previous studies, such as Karatu & Nik Mat (2015), who reported a positive relationship between perceived green knowledge and green purchase intention. Similarly, Salimi (2019) demonstrated that green knowledge influences intention both directly and indirectly through attitudes, subjective norms, and perceived behavioral control. Furthermore, Alalei and Jan (2023) explicitly incorporated environmental knowledge into the Theory of Planned Behavior (TPB) framework to predict green purchase intention. In addition, Kamalanon et al. (2022) emphasized that the level of environmental knowledge can reinforce the psychological mechanisms that drive the formation of behavioral intentions.

Within the framework of the Theory of Planned Behavior (Ajzen, 1991), environmental knowledge operates as an antecedent variable that extends the explanatory power of the model, functioning either as an additional predictor or as a substitute for perceived behavioral control (Galván-Mendoza et al., 2022; Bevan-Dye & Synodinos, 2025). An enhanced level of green knowledge among golf course managers may therefore play a critical role in facilitating the adoption of environmentally friendly and sustainable turf equipment.

3.3 The Influence of Green Perceived Quality on Purchase Intention

Green perceived quality (GPQ) demonstrates the strongest positive and significant effect on purchase intention (PI), with a path coefficient of 0.481 and a p-value of 0.000. This indicates that among all the examined variables, consumers' perception of the quality of green turf equipment exerts the greatest influence in shaping their purchase intentions. Specifically, for Generation X consumers, this finding suggests that when they perceive such products as durable, reliable, and functionally superior, their willingness to adopt and purchase environmentally friendly turf equipment increases substantially.

This finding is consistent with Wasaya et al., (2021), who showed that perceived green quality significantly influences purchase intention in energy-saving products. Consumers perceiving green products as reliable and effective are more likely to trust and adopt them. In golf course maintenance, perceived durability, performance, and environmental benefits of turf equipment such as electric mowers or low-emission sprayers can strengthen product credibility and purchasing intention. Similarly, Chen & Chang (2013) and Yadav & Pathak (2017)

emphasized that Green Perceived Quality (GPQ) is a critical determinant of green purchase intention, underscoring its role in driving environmentally responsible consumer behavior.

Within the Theory of Planned Behavior (TPB), Green Perceived Quality (GPQ) shapes consumers' *attitude toward behavior* (Echchad & Ghaith, 2022). As Ajzen (1991) notes, favorable attitudes based on beliefs in product benefits and quality strengthen intention. Thus, perceiving green turf equipment as high quality, reliable, and durable enhances positive attitudes, which subsequently foster purchase intention.

3.4 The Influence of Green Economic Value on Purchase Behavioral Intention

This study found that Green Economic Value (GEV) does not significantly influence Purchase Intention (PI) ($\beta = 0.038$; $p = 0.684$), thereby rejecting the initial hypothesis predicting a positive relationship. For Generation X consumers, considerations of price, economic benefits, and cost efficiency related to green turf equipment are not the dominant factors driving purchase intention.

This result aligns with Jan et al. (2019), who examined the value–attitude–behavior model and demonstrated that economic value had no significant effect on attitudes toward buying green products, whereas factors such as health and safety played a stronger role. Similarly, Kirana et al. (2025) reported that GEV was not a significant determinant of PI. These findings suggest that although consumers may recognize potential long-term economic benefits, such perceptions are not sufficiently strong to shape purchase intentions. Instead, consumers prioritize factors such as product quality and environmental consciousness over cost savings.

Within the framework of the Theory of Planned Behavior (Ajzen, 1991), economic value is expected to function as a behavioral belief shaping attitude toward behavior. However, the findings reveal that economic value is not internalized into a strong attitude, thus failing to influence purchase intention.

4. Conclusion

This study on green turf equipment purchase intentions reveals several key findings:

1. The study confirms that green knowledge significantly influences purchase intention for green turf equipment. Higher levels of knowledge about environmental benefits and sustainable technologies increase consumers' likelihood of adopting green products. For Generation X, this effect is particularly strong, as their pragmatic and analytical nature makes reliable information a key driver of purchase decisions.
2. Green perceived quality emerges as the strongest determinant of purchase intention. When Generation X consumers perceive green turf equipment as durable, reliable, and high performing, their willingness to purchase increases substantially. This highlights that product quality, rather than price or economic value, serves as the most powerful factor shaping their intention to adopt environmentally friendly technologies.
3. The study finds that green economic value does not significantly influence purchase intention. For Generation X, considerations of price efficiency and long-term economic benefits are not sufficient motivators in deciding to purchase green turf equipment. Instead, this cohort places greater emphasis on product quality and environmental awareness, underscoring that cost-related factors remain secondary in shaping sustainable purchase intentions.

This study shows that for Generation X, green knowledge and green perceived quality strongly influence purchase intention of green turf equipment, while economic value plays a minor role. Manufacturers should therefore focus on consumer education about environmental benefits and technical features, tailored to Gen X's pragmatic orientation. At the same time, product quality and reliability must be emphasized through certifications, demonstrations at golf courses, and strong after-sales service to build trust. While cost efficiency is not decisive, highlighting long-term savings and providing financing options can still support adoption and expand market reach.

References

1. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T
2. Ahmad, W., & Zhang, Q. (2020). Green purchase intention: Effects of electronic service quality and customer green psychology. Journal of Cleaner Production, 267, 122053. https://doi.org/10.1016/j.jclepro.2020.122053
3. Alalei, A., & Jan, M. (2023). Factors influencing the green purchase intention among consumers: An empirical study in Algeria. *Journal of Global Business Insights*, *8*(1), 49–65. https://doi.org/10.5038/2640-6489.8.1.1181
4. BBC News Indonesia. (2023, August 29). Indonesia satu dari enam negara penyumbang polusi udara global, masyarakat sipil akan ajukan class action. https://www.bbc.com/indonesia/articles/c72enp76622o
5. Bekken, M. A. H., Schimenti, C. S., Soldat, D. J., & Rossi, F. S. (2021). A novel framework for estimating and analyzing pesticide risk on golf courses. Science of The Total Environment, 783, 146840. https://doi.org/10.1016/j.scitotenv.2021.146840
6. Bevan-Dye, A. L., & Synodinos, C. (2025). Antecedents of consumers' green beauty product brand purchase intentions: An extended theory of planned behavior approach. *Sustainability*, *17*(3), 1323. https://doi.org/10.3390/su17031323
7. Braun, R. C., Straw, C. M., Soldat, D. J., Bekken, M. A. H., Patton, A. J., Lonsdorf, E. V., & Horgan, B. P. (2023). Strategies for reducing inputs and emissions in turfgrass systems. Crop, Forage & Turfgrass Management, 9(1). https://doi.org/10.1002/cft2.20218
8. Chen, C., Li, D., Qian, J., & Li, Z. (2024). The impact of green purchase intention on compensatory consumption: The regulatory role of pro-environmental behavior. Sustainability, 16(18), 8183. https://doi.org/10.3390/su16188183
9. Chen, Y., & Chang, C. (2013). Towards green trust. *Management Decision*, *51*(1), 63–82. https://doi.org/10.1108/00251741311291319
10. Chi, T. (2015). Consumer perceived value of environmentally friendly apparel: An empirical study of Chinese consumers. The Journal of The Textile Institute, 106(10), 1038–1050. https://doi.org/10.1080/00405000.2014.985879
11. Dabija, D.-C., & Bejan, B. M. (2018). Green DIY store choice among socially responsible consumer generations. *International Journal of Corporate Social Responsibility*, *3*(1). https://doi.org/10.1186/s40991-018-0037-0
12. Echchad, M & Abrar Ghaith. (2022). Purchasing Intention of Green Cosmetics Using the Theory of Planned Behavior: The Role of Perceived Quality and Environmental Consciousness. *Expert of Journal Marketing*, *10*(1). https://www.researchgate.net/publication/359620398
13. Galván-Mendoza, O., González-Rosales, V. M., Leyva-Hernández, S. N., Arango-Ramírez, P. M., & Velasco-Aulcy, L. (2022). Environmental knowledge, perceived behavioral control, and employee green behavior in female employees of small and medium enterprises in Ensenada, Baja California. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1082306
14. Goal 12. (n.d.). Department of Economic and Social Affairs. Retrieved August 1, 2025, from https://sdgs.un.org/goals/goal12
15. Goal 13. (n.d.). Department of Economic and Social Affairs. Retrieved August 16, 2025, from https://sdgs.un.org/goals/goal13
16. Greenstone, M., Ganguly, T., Hasenkopf, C., Sharma, N., & Gautam, H. (2024, August). 2024 Annual Update. Air Quality Life Index (AQLI). The University of Chicago. https://aqli.epic.uchicago.edu/reports/
17. Ham, C.-D., Chung, U. C., Kim, W. J., Lee, S. Y., & Oh, S.-H. (2021). Greener than others? Exploring generational differences in green purchase intent. International Journal of Market Research, 64(3), 376–396. https://doi.org/10.1177/14707853211034108
18. Hassan, H. M. K., Quader, M. S., & Aktar, S. (2022). The role of perceived value and green consumption attitude on purchase intention of eco-bag: A study on young consumers (Peranan persepsi nilai dan sikap penggunaan hijau terhadap niat pembelian beg-eko: Kajian terhadap pengguna muda). Jurnal Pengurusan, 65, 27–38. https://doi.org/10.17576/pengurusan-2022-65-03
19. Hashish, M. E.-S., Abdou, A. H., Mohamed, S. A. K., Elenain, A. S. A., & Salama, W. (2022). The nexus between green perceived quality, green satisfaction, green trust, and customers' green behavioral intentions in eco-friendly hotels: A structural equation modeling approach. International Journal of Environmental

Research and Public Health, 19(23), 16195. https://doi.org/10.3390/ijerph192316195
20. Jan, I. U., Ji, S., & Yeo, C. (2019). Values and green product purchase behavior: The moderating effects of the role of government and media exposure. Sustainability, 11(23), 6642. https://doi.org/10.3390/su11236642
21. Kamalanon, P., Chen, J.-S., & Le, T.-T.-Y. (2022). "Why do we buy green products?" An extended theory of the planned behavior model for green product purchase behavior. *Sustainability*, *14*(2), 689. https://doi.org/10.3390/su14020689
22. Karatu, V. M. H., & Nik-Mat, N. K. (2015, August 17–20). Determinants of green purchase intention in Nigeria: The mediating role of green perceived value. Proceedings of the International Conference on Accounting Studies (ICAS) 2015, Johor Bahru, Johor, Malaysia. Othman Yeop Abdullah Graduate School of Business, Universiti Utara Malaysia
23. Kim, I., Jung, H. J., & Lee, Y. (2021). Consumers' value and risk perceptions of circular fashion: Comparison between secondhand, upcycled, and recycled clothing. Sustainability, 13(3), 1208. https://doi.org/10.3390/su13031208
24. Kirana, S., Zuliansyah, A., & Devi, Y. (2025). The effect of Green Product, Green Perceived Value, and Environment Knowledge on Green Purchase Intention on Cleo Eco Green bottled water in Islamic Economic Perspective. *Indonesian Journal of Islamic Economics and Finance*, *5*(1), 257–274. https://doi.org/10.37680/ijief.v5i1.7068
25. Leonardo, M. C., & Riza, F. (2023). The impact of green product quality on green satisfaction mediated by green perceived value: An empirical study of eco-friendly bag buyers in DKI Jakarta. International Journal of Social Service and Research, 3(11), 2954–2964. https://doi.org/10.46799/ijssr.v3i11.603
26. Maichum, K., Parichatnon, S., & Peng, K.-C. (2016). Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers. Sustainability, 8(10), 1077. https://doi.org/10.3390/su8101077
27. Mabkhot, H. (2024). Factors affecting millennials' green purchase behavior: Evidence from Saudi Arabia. Heliyon, 10(4), e25639. https://doi.org/10.1016/j.heliyon.2024.e25639
28. Matz, R., Pfleegor, A. G., & Smith, A. B. (2025). Technology in golf: An ethical approach to distance gains and sustainability. Sport, Business and Management: An International Journal, 1–20. https://doi.org/10.1108/sbm-02-2025-0043
29. Michaud, C., & Llerena, D. (2010). Green consumer behaviour: An experimental analysis of willingness to pay for remanufactured products. Business Strategy and the Environment, 20(6), 408–420. https://doi.org/10.1002/bse.703
30. Mohd Suki, N. (2016). Green product purchase intention: Impact of green brands, attitude, and knowledge. British Food Journal, 118(12), 2893–2910. https://doi.org/10.1108/bfj-06-2016-0295
31. Nekmahmud, Md., & Fekete-Farkas, M. (2020). Why not green marketing? Determinates of consumers' intention to green purchase decision in a new developing nation. Sustainability, 12(19), 7880. https://doi.org/10.3390/su12197880
32. Ow, L. F., & Chan, E. (2021). Managing the turf of an urban golf course: Energy consumption and greenhouse gas emission. Advances in Environmental and Engineering Research, 3(1), 1–1. https://doi.org/10.21926/aeer.2201003
33. Saleem, F., Pinto, L., & Malik, M. I. (2024). Green knowledge sharing and the green performance nexus: A moderated mediation model. Sustainability, 16(22), 9654. https://doi.org/10.3390/su16229654
34. Salimi, A. R. (2019). Effects of environmental concerns and green knowledge on green product consumptions with an emphasis on mediating the role of perceived behavioral control, perceived value, attitude, and subjective norm. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 10(5), 651–664. https://doi.org/10.14456/ITJEMAST.2019.61
35. Varshneya, G., & Das, G. (2017). Experiential value: Multi-item scale development and validation. Journal of Retailing and Consumer Services, 34, 48–57. https://doi.org/10.1016/j.jretconser.2016.09.010
36. Wang, Y., & Hazen, B. T. (2016). Consumer product knowledge and intention to purchase remanufactured products. International Journal of Production Economics, 181, 460–469. https://doi.org/10.1016/j.ijpe.2015.08.031
37. Wang, Y., Yue, C., Watkins, E., & Straw, C. (2024). The driving forces and barriers of golf course superintendents' adoption of precision irrigation technology. Journal of Environmental Horticulture, 42(2), 66–74. https://doi.org/10.24266/0738-2898-42.2.66
38. Wasaya, A., Saleem, M. A., Ahmad, J., Nazam, M., Khan, M. M. A., & Ishfaq, M. (2021). Impact of green

trust and green perceived quality on green purchase intentions: A moderation study. Environment, Development and Sustainability, 23(9), 13418–13435. https://doi.org/10.1007/s10668-020-01219-6

39. Watanabe, E. A. de M., Alfinito, S., Curvelo, I. C. G., & Hamza, K. M. (2020). Perceived value, trust and purchase intention of organic food: A study with Brazilian consumers. *British Food Journal*, *122*(4), 1070–1184. https://doi.org/10.1108/bfj-05-2019-0363
40. Wibowo, A., Prihartanti, W., Wibowo, A. E., Hardiono, & Rahmanto, A. (2022). The effect of green trust, green marketing and green perceived quality on green purchase intention. Enrichment: Journal of Management, 12(5). Retrieved from http://www.enrichment.iocspublisher.org
41. World Bank. (2025, April 18). Pollution. https://www.worldbank.org/en/topic/pollution
42. Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, *134*, 114–122. https://doi.org/10.1016/j.ecolecon.2016.12.019
43. Yulianingsih, Y., Laela, L., & Sardju, H. (2025). The influence of green knowledge and green perceived value on purchase intention mediated by green lifestyle. *International Journal of Business, Law, and Education*, *6*(1), 682–691. https://doi.org/10.56442/ijble.v6i1.1080
44. Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing, 52(3), 2–22. https://doi.org/10.1177/002224298805200302
45. Zhang, M., Zhang, R., Li, Y., & Zhou, Y. (2024). Knowing green, buying green: University students green knowledge and green purchase behavior. *Humanities and Social Sciences Communications*, *11*(1). https://doi.org/10.1057/s41599-024-03243-7