

Aleksy Kwilinski,^{1,2} Oleksii Lylyov,^{1,3}
Tetyana Pimonenko^{1,3}
¹*WSB University (Poland)*
²*The London Academy of Science and Business (United Kingdom)*
³*Sumy State University (Ukraine)*

The Culture of Sustainable Governance for Green Economic Development

DOI: 10.30819/cmse.9-1.04

ABSTRACT

This paper aims to analyse the causal relationship between the culture of sustainable governance and green economic development (GD) across EU countries for the period 2013-2023. The study hypothesizes that a strong culture of sustainable governance significantly enhances green economic outcomes, and vice versa. To test this hypothesis, the Panel Vector Autoregression method was applied to examine the impacts and interconnections between the culture of sustainable governance, measured by the World Governance Indicators, and green economic development, quantified via the Malmquist–Luenberger Index. The analysis reveals that past GD significantly predicts future growth, with improvements in governance culture playing a critical role, explaining up to 33.44% of GD variance over time. The study also found that research and development positively contribute to GD, although to a lesser extent than governance does. Countries such as Austria and Germany demonstrate high GD scores due to strong technological adoption and efficient resource management, whereas countries such as Lithuania and Malta face challenges in these areas. The findings underscore the importance of integrating governance culture with technological innovation and resource efficiency strategies to promote sustainable economic growth in the EU.

KEY WORDS

Green economic development, technological advancement, resource efficiency, governance, research and development

Paper received: 4 September 2024 • Paper revised: 15 December 2024 • Paper accepted: 28 January 2025

Aleksy Kwilinski [0000-0001-6318-4001] is a professor at the Institute for Sustainable Development and International Relations, WSB University, 41-300 Dabrowa Gornicza, Poland; The London Academy of Science and Business, 120 Baker St., London W1U 6TU, UK
Email: a.kwilinski@london-asb.co.uk

Oleksii Lylyov [0000-0002-4865-7306] is a professor at the Institute for Sustainable Development and International Relations, WSB University, 41-300 Dabrowa Gornicza, Poland; Department of Marketing, Sumy State University, 116, Kharkivska St., 40007 Sumy, Ukraine.

Email: alex_lyulev@econ.sumdu.edu.ua

Tetyana Pimonenko [0000-0001-6442-3684] is a professor at the Institute for Sustainable Development and International Relations, WSB University, 41-300 Dabrowa Gornicza, Poland; Department of Marketing, Sumy State University, 116, Kharkivska St., 40007 Sumy, Ukraine.

Email: tetyana_pimonenko@econ.sumdu.edu.ua

References

- Abad-Segura, E., Infante-Moro, A., González-Zamar, M.-D., & López-Meneses, E. (2024). Influential factors for a secure perception of accounting management with blockchain technology. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(2), 100264.
- Borojo, D. G., Yushi, J., Miao, M., & Xiao, L. (2023). The impacts of economic policy uncertainty, energy consumption, sustainable innovation, and quality of governance on green growth in emerging economies. *Energy and Environment*, 35(7).
- Brych, V., Zatonatska, T., Dluhopolskyi, O., Borysiak, O., Vakun, O. (2021). Estimating the Efficiency of the Green Energy Services' Marketing Management Based on Segmentation. *Marketing and Management of Innovations*, 3, 188-198.
- Chen, Y., Lylyov, O., Pimonenko, T., & Kwilinski, A. (2023). Green development of the country: Role of macroeconomic stability. *Energy and Environment*, 35(5), 2273-2295.
- Choi, Y. (2015). Intermediary propositions for green growth with sustainable governance. *Sustainability*, 7(11), 14785-14801.
- Dacko-Pikiewicz, Z. (2019a). Building a family business brand in the context of the concept of stakeholder-oriented value. *Forum Scientiae Oeconomia*, 7, 37-51.
- Dacko-Pikiewicz, Z. (2019b). The Selected Aspects of Strategic Management in the City Divided by the Border in the Context of the Development of the Cross-Border Market of Cultural Services. *Polish Journal of Management Studies*, 19(1), 130-144.
- Drożdż, W. (2019). The Development of Electromobility in Poland. *Virtual Economics*, 2(2), 61-69.
- Hussain, H.I., Haseeb, M., Kamarudin, F., Dacko-Pikiewicz, Z., & Szczepańska-Woszczyzna, K. (2021). The role of globalization, economic growth and natural resources on the ecological footprint in Thailand: Evidence from nonlinear causal estimations. *Processes*, 9, 1103.
- Infante-Moro, A., Infante-Moro, J.C., & Gallardo-Pérez, J. (2020). Motivational factors that justify the implementation of the internet of things as a security system in the hotel sector. *Revista de Pensamiento Estrategico y Seguridad CISDE*, 5(2), 81-91.
- International Labour Organization. (2020). *World Employment and Social Outlook 2020: Greening with Jobs*.
- Kaufmann, D., & Kraay, A. (2020). *Governance Indicators: Methodology and Measurement*. World Bank.
- Khalatur, S., & Dubovych, O. (2022). Financial Engineering of Green Finance as an Element of Environmental Innovation Management. *Marketing and Management of Innovations*, 1, 232-246.
- Kharazishvili, Y., & Kwilinski, A. (2022). Methodology for Determining the Limit Values of National Security Indicators Using Artificial Intelligence Methods. *Virtual Economics*, 5(4), 7-26.
- Koengkan, M., Fuinhas, J.A., Auza, A., Castilho, D., & Kaymaz, V. (2024). Environmental Governance and Gender Inclusivity: Analysing the Interplay of PM2.5 and Women's Representation in Political Leadership in the European Union. *Sustainability*, 16(6), 2492.
- Kwilinski, A. (2023a). E-Commerce and Sustainable Development in the European Union: A Comprehensive Analysis of SDG2, SDG12, and SDG13. *Forum Scientiae Oeconomia*, 11, 87-107.
- Kwilinski, A. (2023b). The Relationship between Sustainable Development and Digital Transformation: Bibliometric Analysis. *Virtual Economics*, 6, 56-69.

- Kwilinski, A. (2024a). Understanding the Nonlinear Effect of Digital Technology Development on CO2 Reduction. *Sustainable Development*, 1-15.
- Kwilinski, A. (2024b). Mapping Global Research on Green Energy and Green Investment: A Comprehensive Bibliometric Study. *Energies*, 17(5), 1119.
- Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023a). Spillover Effects of Green Finance on Attaining Sustainable Development: Spatial Durbin Model. *Computation*, 11(10), 199.
- Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023b). The Coupling and Coordination Degree of Digital Business and Digital Governance in the Context of Sustainable Development. *Information*, 14(12), 651.
- Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2024a). Reducing Transport Sector CO2 Emissions Patterns: Environmental Technologies and Renewable Energy. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100217.
- Kwilinski, A., Merritt, P., & Wroblewski, L. (2024b). Advancing Sustainable Development Goals through Digital Culture: A Global Research Overview. *Cultural Management: Science and Education*, 8(1), 61-80.
- Kwilinski, A., Szczepańska-Woszczyzna, K., Lyulyov, O., & Pimonenko, T. (2024c). Digital Public Services: Catalysts for Healthcare Efficiency. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100319.
- Larsen, R. K., & Powell, N. (2012). Fostering legitimacy in agro-environmental governance: The case of the danish green growth strategy for combating eutrophication in the baltic sea region. In *Environmental Leadership: A Reference Handbook*.
- Larsen, R. K., & Powell, N. (2013). Making sense of accountability in baltic agro-environmental governance: The case of Denmark's green growth strategy. *Social and Environmental Accountability Journal*, 33(2), 71-90.
- Letunovska, N., Abazov, R., & Chen, Y. (2022). Framing a Regional Spatial Development Perspective: The Relation between Health and Regional Performance. *Virtual Economics*, 5, 87-99.
- Li, X., & Tong, X. (2024). Fostering green growth in Asian developing economies: The role of good governance in mitigating the resource curse. *Resources Policy*, 90.
- Liu, F., Jiang, J., & Zhang, S. (2022). Government Environmental Governance and Enterprise Coordinated Green Development under the Goal of "Double Carbon." *Journal of Environmental and Public Health*, 2022.
- Liu, S., & Zhang, H. (2024). Governance quality and green growth: New empirical evidence from BRICS. *Finance Research Letters*, 65.
- Liu, S., Kuang, J., Ding, D., Madsen, D. Ø., Shi, X., & Fan, X. (2024). Low-carbon governance, fiscal decentralization, and enterprise green development: Evidence from China. *PLoS ONE*, 19(3 March).
- Luukkanen, J., Kaivo-oja, J., Vähäkari, N., O'Mahony, T., Korkeakoski, M., Panula-Ontto, J., Vehmas, J., & Nguyen Quoc, A. (2019). Resource efficiency and green economic sustainability transition evaluation of green growth productivity gap and governance challenges in Cambodia. *Sustainable Development*, 27(3), 312-320.
- Lyulyov, O., Pimonenko, T., Cheng, Y., Kwilinski, A., & Us, Y. (2024a). Countries' Green Brands within the Context of Sustainable Development Goals. *Journal of Innovation & Knowledge*, 9(3), 100509.
- Lyulyov, O., Pimonenko, T., Infante-Moro, A., & Kwilinski, A. (2024b). Perception of Artificial Intelligence: GSR Analysis and Face Detection. *Virtual Economics*, 7(2), 7-30.
- Lyulyov, O., Chygryn, O., Pimonenko, T., Zimbhoff, A., Makiela, Z., & Kwilinski, A. (2024c). Green Competitiveness Forecasting as an Instrument for Sustainable Business Transformation. *Forum Scientiae Oeconomia*, 12(2), 8-20.
- Marisi, F. (2018). Development Banks as Environmental Governance Actors: the aiib's Power to Promote Green Growth. In *The Belt and Road Initiative: Law, Economics, and Politics*, 502-522.
- Martinelli, A., & Midttun, A. (2012). Introduction: Towards green growth and multilevel governance. *Energy Policy*, 48, 1-4.
- Miao, N., Sharif, A., Ozturk, I., & Razzaq, A. (2023). How do the exploitation of natural resources and fiscal policy affect green growth? Moderating role of ecological governance in G7 countries. *Resources Policy*, 85.
- Murshed, M. (2024). Can renewable energy transition drive green growth? The role of good governance in promoting carbon emission-adjusted

- economic growth in Next Eleven countries. *Innovation and Green Development*, 3(2).
- Nyenno, I., Truba, V., & Tokarchuk, L. (2023). Managerial Future of the Artificial Intelligence. *Virtual Economics*, 6(2), 72–88.
- Ofori, I. K., & Figari, F. (2023). Economic globalization and inclusive green growth in Africa: Contingencies and policy-relevant thresholds of governance. *Sustainable Development*, 31(1), 452–482.
- Ofori, I. K., Gbolonyo, E. Y., & Ojong, N. (2022). Towards inclusive green growth in Africa: Critical energy efficiency synergies and governance thresholds. *Journal of Cleaner Production*, 369.
- Organization for Economic Co-operation and Development. (2020). *Green Growth Indicators 2020*. OECD Publishing.
- Pang, D., Jin, X., Zheng, K., & Tien, N. H. (2024). A road toward green growth: Optimizing the role of mineral resources, fintech innovation and effective governance in G-20 economies. *Resources Policy*, 92.
- Pudryk, D., Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023). Towards Achieving Sustainable Development: Interactions between Migration and Education. *Forum Scientiae Oeconomia*, 11(1), 113–132.
- Rajiani, I., & Kot, S. (2020). Javanese Indonesia: Human Resource Management Issues in a Uniquely Collectivist Culture. *Cultural Management: Science and Education*, 4(2), 9–21.
- Rasham, M. H., Alkhafagy, T., Algaragolle, W. M., Saeed, A. F., Oudah Al- Muttar, M. Y., Baher, R. K., & Ibrid, A. A. (2023). Governance, Financial Development, and Green Growth in Iraq: An Empirical Study. *Cuadernos de Economia*, 46(131), 115–124.
- Razzaq, A., Sharif, A., Ozturk, I., & Afshan, S. (2023). Dynamic and threshold effects of energy transition and environmental governance on green growth in COP26 framework. *Renewable and Sustainable Energy Reviews*, 179.
- Shaukat, F., Zaman, H. M. F., Nguyen, T. T. N., & Souvanhxy, P. (2023). The Interplay of Eco-Innovation and Market Uncertainty on Green Marketing Orientation and Business Performance. *Marketing and Management of Innovations*, 14(4), 48–68.
- Shi, P., Yang, S., Ye, Q., Li, Y., & Han, G. (2017). Green Development and Integrated Risk Governance. *International Journal of Disaster Risk Science*, 8(2), 231–233.
- Stewart, R. B., Kingsbury, B., & Rudyk, B. (2009). Climate finance for limiting emissions and promoting green development: Mechanisms, regulation, and governance. In *Climate Finance: Cultures, Histories, and Representations*.
- Strielkowski, W. (2024). Innovations in the Energy Sector as a Powerful Catalyst for Financial Transformations. *Marketing and Management of Innovations*, 15(1), 131–142.
- Surya, I. B. K., Kot, S., Astawa, I. P., Rihayana, I. G., & Arsha, I. M. R. M. (2024). Unlocking Sustainability through Innovation: A Green HR Approach for Hospitality Industry. *Virtual Economics*, 7(2), 50–62.
- Susila Adiyanta, F. C. (2020). Urban space governance and sustainable green development in Indonesia. *International Journal of Energy Economics and Policy*, 10(1), 1–6.
- Szczepanska-Woszczyna, K., & Gatnar, S. (2022). Key Competences of Research and Development Project Managers in High Technology Sector. *Forum Scientiae Oeconomia*, 10, 107–130.
- Szczepanska-Woszczyna, K., & Muras, W. (2023). Shareholders and the Long-Term Ability of a Company to Value Creation: The Case of the It Sector. *Polish Journal of Management Studies*, 28(2), 323–348.
- Szczepanska-Woszczyna, K., Gedvilaitė, D., Nazarko, J., Stasiukynas, A., & Rubina, A. (2022). Assessment of Economic Convergence among Countries in the European Union. *Technological and Economic Development of Economy*, 28, 1572–1588.
- Szczepanska-Woszczyna, K., Vysochyna, A., & Kwilinski, A. (2024). Public Health Efficiency and Country Competitiveness: Empirical Study in Pre-Pandemic and Pandemic Periods. *Forum Scientiae Oeconomia*, 12(1), 151–166.
- Transparency International. (2020). *Corruption Perceptions Index 2020*.
- Ullah, S., Nobanee, H., & Iftikhar, H. (2023). Global financial integration, governance-by-technology, and green growth. *International Review of Financial Analysis*, 90.
- United Nations Development Programme. (2020). *Good Governance for Sustainable Development*.

- United Nations Environment Programme. (2020). *Rule of Law in Environmental Matters 2020*. UNEP.
- Veckalne, R., & Tambovceva, T. (2022). The Role of Digital Transformation in Education in Promoting Sustainable Development. *Virtual Economics*, 5(4), 65–86.
- Wang, H., Peng, G., Luo, Y., & Du, H. (2023). Asymmetric influence of renewable energy, ecological governance, and human development on green growth of BRICS countries. *Renewable Energy*, 206, 1007–1019.
- Wang, N., Ullah, A., Lin, X., Zhang, T., & Mao, J. (2022). Dynamic Influence of Urbanization on Inclusive Green Growth in Belt and Road Countries: The Moderating Role of Governance. *Sustainability*, 14(18).
- World Bank. (2020). *World Development Report 2020: The Changing Nature of Work*. World Bank Group.
- Wroblewski, L., & Lis, M. (2021). Marketing Mix of Cultural Institutions on the Cross-Border Market of a City Divided by a Border – An Analysis and Evaluation. *Polish Journal of Management Studies*, 23(2), 555–572.
- Xiao, C., & Sun, J. (2022). Institutional Governance Influence Mechanism and Model of Regional Green Development in China. *Scientific Programming*, 2022.
- Xu, H. (2023). Role, Competition and Cooperation: China, Russia and the United States in Global Climate Governance and Low-Carbon Green Growth. In: Institute of Russian, Eastern European and Central Asian Studies, CASS, Russian International Affairs Council (eds) *Global Governance in the New Era*. Springer, Singapore.
- Xu, X., Li, X., & Zheng, L. (2022). A Blessing or a Curse? Exploring the Impact of Environmental Regulation on China's Regional Green Development from the Perspective of Governance Transformation. *International Journal of Environmental Research and Public Health*, 19(3).
- Yikun, Z., Woon Leong, L., Cong, P. T., Abu-Rumman, A., al Shraah, A., & Hishan, S. S. (2023). Green growth, governance, and green technology innovation. How effective towards SDGs in G7 countries? *Economic Research-Ekonomska Istrazivanja*, 36(2).
- Zeng, C., Ma, R., & Chen, P. (2024). Impact of mineral resource rents and fin-tech on green growth: Exploring the mediating role of environmental governance in developed economies. *Resources Policy*, 89.
- Zhang, J., Zhang, K., & Zhao, F. (2020). Research on the regional spatial effects of green development and environmental governance in China based on a spatial autocorrelation model. *Structural Change and Economic Dynamics*, 55, 1–11.
- Zhang, Y., & Zhang, J. (2024). Environmental governance and regional green development: Evidence from China. *Journal of Cleaner Production*, 447.
- Zhanibek, A., Abazov, R., & Khazbulatov, A. (2022). Digital Transformation of a Country's Image: The Case of the Astana International Finance Centre in Kazakhstan. *Virtual Economics*, 5, 71–94.
- Zhu, X., He, M., & Li, H. (2021). Environmental regulation, governance transformation and the green development of Chinese iron and steel enterprises. *Journal of Cleaner Production*, 328.
- Ziabina, Y., & Dzwigol-Barosz, M. (2022). A Country's Green Brand and the Social Responsibility of Business. *Virtual Economics*, 5(3), 31–49.
- Ziabina, Y., & Navickas, V. (2022). Innovations in Energy Efficiency Management: Role of Public Governance Marketing and Management of Innovations, 4, 218–227.
- Ziabina, Y., & Pimonenko, T. (2020). The Green Deal Policy for Renewable Energy: A Bibliometric Analysis. *Virtual Economics*, 3(4), 147–168.