

DAFTAR PUSTAKA

- Abdissa, G., Ayalew, A., Illés, C. B., & Dunay, A. (2021). Effects of corporate entrepreneurship dimensions on organizational performance: case of small and medium enterprises in Holeta town, Ethiopia. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(4). <https://doi.org/10.3390/joitmc7040234>
- Abdullah, A., Saraswat, S., & Talib, F. (2023). Barriers and strategies for sustainable manufacturing implementation in SMEs: A hybrid fuzzy AHP-TOPSIS framework. *Sustainable Manufacturing and Service Economics*, 2, 100012. <https://doi.org/10.1016/j.smse.2023.100012>
- Adnan, Rasheed, A., Khan, S. U., Bilal, M., Chuan Ching, D. L., Ben Said, L., Mir, A., Kolsi, L., & Khan, I. (2024). Investigation of comparative entropy in different nanofluids inspired by solar radiations and unsteady effects: Model analysis for permeable channel. *Journal of Radiation Research and Applied Sciences*, 17(4), 101158. <https://doi.org/10.1016/j.jrras.2024.101158>
- Ahmad, N., Hasan, M. G., & Barbhuiya, R. K. (2021a). Identification and prioritization of strategies to tackle COVID-19 outbreak: A group-BWM based MCDM approach. *Applied Soft Computing*, 111, 1–13. <https://doi.org/10.1016/j.asoc.2021.107642>
- Ahmad, N., Hasan, M. G., & Barbhuiya, R. K. (2021b). Identification and prioritization of strategies to tackle COVID-19 outbreak: A group-BWM based MCDM approach. *Applied Soft Computing*, 111. <https://doi.org/10.1016/j.asoc.2021.107642>
- Aiken, L. R. (1980). Content validity and reliability of single items or questionnaires. *Educational and Psychological Measurement*, 40(4), 955–959. <https://doi.org/10.1177/001316448004000419>
- Aiken, L. R. (1985). *Three Coefficients for Analyzing the Reliability and Validity of Ratings*.
- Akoglu, H. (2018). User's guide to correlation coefficients. In *Turkish Journal of Emergency Medicine* (Vol. 18, Issue 3, pp. 91–93). Emergency Medicine Association of Turkey. <https://doi.org/10.1016/j.tjem.2018.08.001>
- Alamri, F. S., Saeed, M. H., & Saeed, M. (2024). A hybrid entropy-based economic evaluation of hydrogen generation techniques using Multi-Criteria Decision Making. *International Journal of Hydrogen Energy*, 49, 711–723. <https://doi.org/10.1016/j.ijhydene.2023.10.324>
- Alimohammadlou, M., & Alinejad, S. (2023). Challenges of blockchain implementation in SMEs' supply chains: an integrated IT2F-BWM and IT2F-DEMATEL method. *Electronic Commerce Research*. <https://doi.org/10.1007/s10660-023-09696-3>
- Alimohammadlou, M., & Khoshsepehr, Z. (2022a). Investigating organizational sustainable development through an integrated method of interval-valued intuitionistic fuzzy AHP and WASPAS. *Environment*,

- Development and Sustainability*, 24(2), 2193–2224. <https://doi.org/10.1007/s10668-021-01525-7>
- Alimohammadlou, M., & Khoshsepehr, Z. (2022b). Investigating organizational sustainable development through an integrated method of interval-valued intuitionistic fuzzy AHP and WASPAS. *Environment, Development and Sustainability*, 24(2), 2193–2224. <https://doi.org/10.1007/s10668-021-01525-7>
- Anculle-Arauco, V., Krüger-Malpartida, H., Arevalo-Flores, M., Correa-Cedeño, L., Mass, R., Hoppe, W., & Pedraz-Petrozzi, B. (2024). Content validation using Aiken methodology through expert judgment of the first Spanish version of the Eppendorf Schizophrenia Inventory (ESI) in Peru: A brief qualitative report. *Spanish Journal of Psychiatry and Mental Health*, 17(2), 110–113. <https://doi.org/10.1016/j.rpsm.2022.11.004>
- Armenia, S., Angelini, M., Nonino, F., Palombi, G., & Schlitzer, M. F. (2021). A dynamic simulation approach to support the evaluation of cyber risks and security investments in SMEs. *Decision Support Systems*, 147. <https://doi.org/10.1016/j.dss.2021.113580>
- Aryafar, A., & Roshanravan, B. (2021a). BWM-SAW: A new hybrid MCDM technique for modeling of chromite potential in the Birjand district, east of Iran. *Journal of Geochemical Exploration*, 231(January), 106876. <https://doi.org/10.1016/j.gexplo.2021.106876>
- Aryafar, A., & Roshanravan, B. (2021b). BWM-SAW: A new hybrid MCDM technique for modeling of chromite potential in the Birjand district, east of Iran. *Journal of Geochemical Exploration*, 231. <https://doi.org/10.1016/j.gexplo.2021.106876>
- Asadi, M., Hashemkhani Zolfani, S., Pamucar, D., Salimi, J., & Saberi, S. (2023). The appropriation of blockchain implementation in the supply chain of SMES based on fuzzy LMAW. *Engineering Applications of Artificial Intelligence*, 123. <https://doi.org/10.1016/j.engappai.2023.106169>
- Badi, I., Pamučar, D., Stević, Ž., & Muhammad, L. J. (2023). Wind farm site selection using BWM-AHP-MARCOS method: A case study of Libya. *Scientific African*, 19. <https://doi.org/10.1016/j.sciaf.2022.e01511>
- Bahrami, S., & Rastegar, M. (2022). Security-based critical power distribution feeder identification: Application of fuzzy BWM-VIKOR and SECA. *International Journal of Electrical Power and Energy Systems*, 134. <https://doi.org/10.1016/j.ijepes.2021.107395>
- Balezentis, T., Siksnylyte-Butkiene, I., & Streimikiene, D. (2021). Stakeholder Involvement for Sustainable Energy Development Based on Uncertain Group Decision Making: Prioritizing the Renewable Energy Heating Technologies and the BWM-WASPAS-IN Approach. *Sustainable Cities and Society*, 73. <https://doi.org/10.1016/j.scs.2021.103114>
- Behzad, M., Hashemkhani Zolfani, S., Pamucar, D., & Behzad, M. (2020). A comparative assessment of solid waste management performance in the Nordic countries based on BWM-EDAS. *Journal of Cleaner Production*, 266, 1–11. <https://doi.org/10.1016/j.jclepro.2020.122008>

- Bhatti, S. H., Rashid, M., Arslan, A., Tarba, S., & Liu, Y. (2023a). Servitized SMEs' performance and the influences of sustainable procurement, packaging, and distribution: The mediating role of eco-innovation. *Technovation*, *127*, 1–12. <https://doi.org/10.1016/j.technovation.2023.102831>
- Bhatti, S. H., Rashid, M., Arslan, A., Tarba, S., & Liu, Y. (2023b). Servitized SMEs' performance and the influences of sustainable procurement, packaging, and distribution: The mediating role of eco-innovation. *Technovation*, *127*, 1–12. <https://doi.org/10.1016/j.technovation.2023.102831>
- Büyüközkan, G., Mukul, E., & Kongar, E. (2021). Health tourism strategy selection via SWOT analysis and integrated hesitant fuzzy linguistic AHP-MABAC approach. *Socio-Economic Planning Sciences*, *74*. <https://doi.org/10.1016/j.seps.2020.100929>
- Canhoto, A. I., Quinton, S., Pera, R., Molinillo, S., & Simkin, L. (2021a). Digital strategy aligning in SMEs: A dynamic capabilities perspective. *Journal of Strategic Information Systems*, *30*(3), 1–17. <https://doi.org/10.1016/j.jsis.2021.101682>
- Canhoto, A. I., Quinton, S., Pera, R., Molinillo, S., & Simkin, L. (2021b). Digital strategy aligning in SMEs: A dynamic capabilities perspective. *Journal of Strategic Information Systems*, *30*(3), 1–17. <https://doi.org/10.1016/j.jsis.2021.101682>
- Chakravarthi, K. K., Shyamala, L., & Vaidehi, V. (2022). TOPSIS inspired cost-efficient concurrent workflow scheduling algorithm in cloud. *Journal of King Saud University - Computer and Information Sciences*, *34*(6), 2359–2369. <https://doi.org/10.1016/j.jksuci.2020.02.006>
- Chatterjee, S., Chaudhuri, R., Shah, M., & Maheshwari, P. (2022). Big data driven innovation for sustaining SME supply chain operation in post COVID-19 scenario: Moderating role of SME technology leadership. *Computers and Industrial Engineering*, *168*. <https://doi.org/10.1016/j.cie.2022.108058>
- Chen, Y., Yu, J., & Khan, S. (2013). The spatial framework for weight sensitivity analysis in AHP-based multi-criteria decision making. *Environmental Modelling and Software*, *48*, 129–140. <https://doi.org/10.1016/j.envsoft.2013.06.010>
- Costa, A., Crupi, A., De Marco, C. E., & Di Minin, A. (2023). SMEs and open innovation: Challenges and costs of engagement. *Technological Forecasting and Social Change*, *194*, 1–15. <https://doi.org/10.1016/j.techfore.2023.122731>
- Dehshiri, S. J. H., Emamat, M. S. M. M., & Amiri, M. (2022). A novel group BWM approach to evaluate the implementation criteria of blockchain technology in the automotive industry supply chain. *Expert Systems with Applications*, *198*. <https://doi.org/10.1016/j.eswa.2022.116826>
- Demir, G., Chatterjee, P., & Pamucar, D. (2024). Sensitivity analysis in multi-criteria decision making: A state-of-the-art research perspective using bibliometric analysis. *Expert Systems with Applications*, *237*.

- <https://doi.org/10.1016/j.eswa.2023.121660>
- Dempster, A. (1967). Upper and Lower Probabilities Induced by a Multivalued Mapping. *Yager, R.R., Liu, L. (Eds) Classic Works of the Dempster-Shafer Theory of Belief Functions. Studies in Fuzziness and Soft Computing*, 219. https://doi.org/10.1007/978-3-540-44792-4_3
- Deng, X., & Jiang, W. (2019). Evaluating Green Supply Chain Management Practices Under Fuzzy Environment: A Novel Method Based on D Number Theory. *International Journal of Fuzzy Systems*, 21(5), 1389–1402. <https://doi.org/10.1007/s40815-019-00639-5>
- Deng, Y. (2012a). D numbers: theory and applications. *Journal of Information and Computational Science*, 9, 2421–2428.
- Deng, Y. (2012b). D numbers: theory and applications. *Journal of Information and Computational Science*, 9, 2421–2428.
- Dong, Y., Cheng, X., Xu, Z., & Ma, T. (2024). Multi-criteria group decision-making methods with dynamic probabilistic linguistic information characterized by multiple consecutive time points. *International Journal of Machine Learning and Cybernetics*, 15(4), 1277–1293. <https://doi.org/10.1007/s13042-023-01967-7>
- Ecer, F., & Pamucar, D. (2020). Sustainable supplier selection: A novel integrated fuzzy best worst method (F-BWM) and fuzzy CoCoSo with Bonferroni (CoCoSo'B) multi-criteria model. *Journal of Cleaner Production*, 266, 1–18. <https://doi.org/10.1016/j.jclepro.2020.121981>
- Fard, B. M., Hamidi, D., Ebadi, M., Alavi, J., & McKay, G. (2022). Optimum landfill site selection by a hybrid multi-criteria and multi-Agent decision-making method in a temperate and humid climate: BWM-GIS-FAHP-GT. *Sustainable Cities and Society*, 79. <https://doi.org/10.1016/j.scs.2021.103641>
- Febriani, A., Sopha, B. M., & Arif Wibisono, M. (2025). Dynamic capabilities for omnichannel transformation in MSMEs: A comparative case study of fashion and furniture sectors. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(1). <https://doi.org/10.1016/j.joitmc.2025.100498>
- Ferdiansyah, E. R., Rochim, A. F., & Syaifei, W. A. (2023). Forecasting LTE Network Traffic Using Hot-Winter's Multiplicative Seasonal Method and Rolling Forecasting for Telecommunication Company Investment Optimization in Indonesia. *International Journal of Intelligent Engineering and Systems*, 16(6), 185–197. <https://doi.org/10.22266/ijies2023.1231.16>
- Gaitero, D., Genero, M., & Piattini, M. (2021). System quality and security certification in seven weeks: A multi-case study in Spanish SMEs. *Journal of Systems and Software*, 178. <https://doi.org/10.1016/j.jss.2021.110960>
- Gogtay, N. J., & Thatte, U. M. (2017). Principles of Correlation Analysis. In *Journal of The Association of Physicians of India* ■ (Vol. 65).
- Gong, J. W., Liu, H. C., You, X. Y., & Yin, L. (2021). An integrated multi-

- criteria decision making approach with linguistic hesitant fuzzy sets for E-learning website evaluation and selection. *Applied Soft Computing*, 102. <https://doi.org/10.1016/j.asoc.2021.107118>
- Gul, M., & Yucesan, M. (2022). Performance evaluation of Turkish Universities by an integrated Bayesian BWM-TOPSIS model. *Socio-Economic Planning Sciences*, 80. <https://doi.org/10.1016/j.seps.2021.101173>
- Gunduz, M. A., Demir, S., & Paksoy, T. (2021). Matching functions of supply chain management with smart and sustainable Tools: A novel hybrid BWM-QFD based method. *Computers and Industrial Engineering*, 162. <https://doi.org/10.1016/j.cie.2021.107676>
- Hadi Mousavi-Nasab, S., & Sotoudeh-Anvari, A. (2020). An extension of best-worst method with D numbers: Application in evaluation of renewable energy resources. *Sustainable Energy Technologies and Assessments*, 40, 1–18. <https://doi.org/10.1007/s41066-024-00462-w>
- Hakim, D. K., Gernowo, R., Nirwansyah, A. W., & Haryanto, T. (2025). Data Mining Approach for River Flood Hazard Time-Series: Using a Combination of Triple Exponential Smoothing and Neural Networks, in Demak. *Informatica*, 49(19). <https://doi.org/10.31449/inf.v49i19.7288>
- Haktanir, E., & Kahraman, C. (2024). Integrated AHP & TOPSIS methodology using intuitionistic Z-numbers: An application on hydrogen storage technology selection. *Expert Systems with Applications*, 239, 122382. <https://doi.org/10.1016/j.eswa.2023.122382>
- Hasanzadeh, R., Mojaver, P., Khalilarya, S., & Azdast, T. (2023). Air co-gasification process of LDPE/HDPE waste based on thermodynamic modeling: Hybrid multi-criteria decision-making techniques with sensitivity analysis. *International Journal of Hydrogen Energy*, 48(6), 2145–2160. <https://doi.org/10.1016/j.ijhydene.2022.10.101>
- Hendalianpour, A., Fakhrabadi, M., Zhang, X., Feylizadeh, M. R., Gheisari, M., Liu, P., & Ashktorab, N. (2019). Hybrid Model of IVFRN-BWM and Robust Goal Programming in Agile and Flexible Supply Chain, a Case Study: Automobile Industry. *IEEE Access*, 7, 71481–71492. <https://doi.org/10.1109/ACCESS.2019.2915309>
- Huang, G., Xiao, L., Pedrycz, W., Pamucar, D., Zhang, G., & Martínez, L. (2022). Design alternative assessment and selection: A novel Z-cloud rough number-based BWM-MABAC model. *Information Sciences*, 603, 149–189. <https://doi.org/10.1016/j.ins.2022.04.040>
- Ingaldi, M., & Klimecka-Tatar, D. (2022). Digitization of the service provision process - Requirements and readiness of the small and medium-sized enterprise sector. *Procedia Computer Science*, 200, 237–246. <https://doi.org/10.1016/j.procs.2022.01.222>
- Isnanto, R. R., Widodo, C. E., Windasari, I. P., & Saputri, M. P. (2023). Developing an Expert System for Mobile-based Gastroenteritis Detection Using ESDLC and Best First Search Methods. *2023 8th International Conference on Informatics and Computing, ICIC 2023*. <https://doi.org/10.1109/ICIC60109.2023.10382102>

- Kahraman, C. (2020). Integration of fuzzy AHP with other fuzzy multicriteria methods: A state of the art survey. *Journal of Multiple-Valued Logic and Soft Computing*, 35(1), 61–92.
- Koohathongsumrit, N., & Chankham, W. (2023). Route selection in multimodal supply chains: A fuzzy risk assessment model-BWM-MARCOS framework. *Applied Soft Computing*, 137. <https://doi.org/10.1016/j.asoc.2023.110167>
- Kulkarni, A. V., Joseph, S., & Patil, K. P. (2024). Artificial intelligence technology readiness for social sustainability and business ethics: Evidence from MSMEs in developing nations. *International Journal of Information Management Data Insights*, 4(2). <https://doi.org/10.1016/j.jjime.2024.100250>
- Kumar, S., Goel, U., Joshi, P., & Johri, A. (2024). Factors affecting Information & Communication Technology (ICT) adoption among MSMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1). <https://doi.org/10.1016/j.joitmc.2023.100205>
- Kwak, K., Kim, D., & Heo, C. (2023). Sustainable innovation in a low- and medium-tech sector: Evidence from an SME in the footwear industry. *Journal of Cleaner Production*, 397. <https://doi.org/10.1016/j.jclepro.2023.136399>
- Lai, H., & Liao, H. (2021). A multi-criteria decision making method based on DNMA and CRITIC with linguistic D numbers for blockchain platform evaluation. *Engineering Applications of Artificial Intelligence*, 101. <https://doi.org/10.1016/j.engappai.2021.104200>
- Le, T. T. (2022). How humane entrepreneurship fosters sustainable supply chain management for a circular economy moving towards sustainable corporate performance. *Journal of Cleaner Production*, 368. <https://doi.org/10.1016/j.jclepro.2022.133178>
- Liu, P. (2020). A normal wiggly hesitant fuzzy linguistic projection-based multiattributive border approximation area comparison method. *International Journal of Intelligent Systems*, 35(3), 432–469. <https://doi.org/10.1002/int.22213>
- Liu, P., & Zhang, X. (2019). A Multicriteria Decision-Making Approach with Linguistic D Numbers Based on the Choquet Integral. *Cognitive Computation*, 11(4), 560–575. <https://doi.org/10.1007/s12559-019-09641-3>
- Liu, P., & Zhang, X. (2020). A novel approach to multi-criteria group decision-making problems based on linguistic D numbers. *Computational and Applied Mathematics*, 39(2). <https://doi.org/10.1007/s40314-020-1132-x>
- Liu, P., Zhu, B., & Wang, P. (2021a). A weighting model based on best–worst method and its application for environmental performance evaluation. *Applied Soft Computing*, 103. <https://doi.org/10.1016/j.asoc.2021.107168>
- Liu, P., Zhu, B., & Wang, P. (2021b). A weighting model based on best–worst method and its application for environmental performance evaluation. *Applied Soft Computing*, 103, 1–16.

- <https://doi.org/10.1016/j.asoc.2021.107168>
- Liu, S., Hu, Y., Zhang, X., Li, Y., & Liu, L. (2020). Blockchain Service Provider Selection Based on an Integrated BWM-Entropy-TOPSIS Method under an Intuitionistic Fuzzy Environment. *IEEE Access*, 8, 104148–104164. <https://doi.org/10.1109/ACCESS.2020.2999367>
- Liu, T., Yu, Z., Xiao, F., Zhao, Y., & Aritsugi, M. (2024). A fractal-based supremum and infimum complex belief entropy in complex evidence theory. *Chinese Journal of Aeronautics*, 103350. <https://doi.org/10.1016/j.cja.2024.103350>
- Liu, Z., Sampaio, P., Pishchulov, G., Mehandjiev, N., Cisneros-Cabrera, S., Schirrmann, A., Jiru, F., & Bnouhanna, N. (2022a). The architectural design and implementation of a digital platform for Industry 4.0 SME collaboration. *Computers in Industry*, 138, 1–24. <https://doi.org/10.1016/j.compind.2022.103623>
- Liu, Z., Sampaio, P., Pishchulov, G., Mehandjiev, N., Cisneros-Cabrera, S., Schirrmann, A., Jiru, F., & Bnouhanna, N. (2022b). The architectural design and implementation of a digital platform for Industry 4.0 SME collaboration. *Computers in Industry*, 138, 1–24. <https://doi.org/10.1016/j.compind.2022.103623>
- Ma, C., & Cheok, M. Y. (2022). The impact of financing role and organizational culture in small and medium enterprises: Developing business strategies for economic recovery. *Economic Analysis and Policy*, 75, 26–38. <https://doi.org/10.1016/j.eap.2022.04.009>
- Ma, X., Qin, J., Martínez, L., & Pedrycz, W. (2023). A linguistic information granulation model based on best-worst method in decision making problems. *Information Fusion*, 89, 210–227. <https://doi.org/10.1016/j.inffus.2022.08.015>
- Maksum, I. R., Sri Rahayu, A. Y., & Kusumawardhani, D. (2020). A social enterprise approach to empowering micro, small and medium enterprises (SMEs) in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(3), 1–17. <https://doi.org/10.3390/joitmc6030050>
- Mariadoss, S., & Augustin, F. (2023). Enhanced sugeno fuzzy inference system with fuzzy AHP and coefficient of variation to diagnose cardiovascular disease during pregnancy. *Journal of King Saud University - Computer and Information Sciences*, 35(8), 2–25. <https://doi.org/10.1016/j.jksuci.2023.101659>
- Markovic, S., Koporcic, N., Arslanagic-Kalajdzic, M., Kadic-Maglajlic, S., Bagherzadeh, M., & Islam, N. (2021). Business-to-business open innovation: COVID-19 lessons for small and medium-sized enterprises from emerging markets. *Technological Forecasting and Social Change*, 170, 1–5. <https://doi.org/10.1016/j.techfore.2021.120883>
- Masoomi, B., Sahebi, I. G., Fathi, M., Yıldırım, F., & Ghorbani, S. (2022a). Strategic supplier selection for renewable energy supply chain under green capabilities (fuzzy BWM-WASPAS-COPRAS approach). *Energy Strategy Reviews*, 40, 1–17. <https://doi.org/10.1016/j.esr.2022.100815>
- Masoomi, B., Sahebi, I. G., Fathi, M., Yıldırım, F., & Ghorbani, S. (2022b).

- Strategic supplier selection for renewable energy supply chain under green capabilities (fuzzy BWM-WASPAS-COPRAS approach). *Energy Strategy Reviews*, 40. <https://doi.org/10.1016/j.esr.2022.100815>
- Mendes, A. C. S., Ferreira, F. A. F., Kannan, D., Ferreira, N. C. M. Q. F., & Correia, R. J. C. (2022a). A BWM approach to determinants of sustainable entrepreneurship in small and medium-sized enterprises. *Journal of Cleaner Production*, 371, 1–11. <https://doi.org/10.1016/j.jclepro.2022.133300>
- Mendes, A. C. S., Ferreira, F. A. F., Kannan, D., Ferreira, N. C. M. Q. F., & Correia, R. J. C. (2022b). A BWM approach to determinants of sustainable entrepreneurship in small and medium-sized enterprises. *Journal of Cleaner Production*, 371. <https://doi.org/10.1016/j.jclepro.2022.133300>
- Mi, X., Tian, Y., & Kang, B. (2021). A hybrid multi-criteria decision making approach for assessing health-care waste management technologies based on soft likelihood function and D-numbers. *Applied Intelligence*, 51(10), 6708–6727. <https://doi.org/10.1007/s10489-020-02148-7>
- Mishra, A. R., Rani, P., Alrasheedi, A. F., & Dwivedi, R. (2023). Evaluating the blockchain-based healthcare supply chain using interval-valued Pythagorean fuzzy entropy-based decision support system. *Engineering Applications of Artificial Intelligence*, 126. <https://doi.org/10.1016/j.engappai.2023.107112>
- Mulchandani, K., Jasrotia, S. S., & Mulchandani, K. (2023). Determining supply chain effectiveness for Indian MSMEs: A structural equation modelling approach. *Asia Pacific Management Review*, 28(2), 90–98. <https://doi.org/10.1016/j.apmr.2022.04.001>
- Muravev, D., & Mijic, N. (2020). A novel integrated provider selection multicriteria model: The bwm-mabac model. *Decision Making: Applications in Management and Engineering*, 3(1), 60–78. <https://doi.org/10.31181/dmame2003078m>
- Nugraha, D. P., Setiawan, B., Nathan, R. J., & Fekete-Farkas, M. (2022). Fintech Adoption Drivers for Innovation for SMEs in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(4), 1–16. <https://doi.org/10.3390/joitmc8040208>
- Okolo, V. O., Ohanagorom, M. I., Okocha, E. R., Muoneke, O. B., & Okere, K. I. (2023). Does financing SMEs guarantee inclusive growth and environmental sustainability in the European union? *Heliyon*, 9(4). <https://doi.org/10.1016/j.heliyon.2023.e15095>
- Omrani, H., Valipour, M., & Emrouznejad, A. (2021). A novel best worst method robust data envelopment analysis: Incorporating decision makers' preferences in an uncertain environment. *Operations Research Perspectives*, 8. <https://doi.org/10.1016/j.orp.2021.100184>
- Pamučar, D., Puška, A., Stević, Ž., & Čirović, G. (2021a). A new intelligent MCDM model for HCW management: The integrated BWM–MABAC model based on D numbers. *Expert Systems with Applications*, 175, 1–20. <https://doi.org/10.1016/j.eswa.2021.114862>

- Pamučar, D., Puška, A., Stević, Ž., & Ćirović, G. (2021b). A new intelligent MCDM model for HCW management: The integrated BWM–MABAC model based on D numbers. *Expert Systems with Applications*, 175. <https://doi.org/10.1016/j.eswa.2021.114862>
- Peng, N., Zhang, C., Zhu, Y., Zhang, Y., Sun, B., Wang, F., Huang, J., & Wu, T. (2024). A vulnerability evaluation method of earthen sites based on entropy weight-TOPSIS and K-means clustering. *Heritage Science*, 12(1), 1–13. <https://doi.org/10.1186/s40494-024-01273-7>
- Petrucci, S. H. H., Ghomi, H., & Mazaheriasad, M. (2022). An Integrated Fuzzy Delphi and Best Worst Method (BWM) for performance measurement in higher education. *Decision Analytics Journal*, 4. <https://doi.org/10.1016/j.dajour.2022.100121>
- Prabowo, R., Singgih, M. L., Karningsih, P. D., & Widodo, E. (2020). New product development from inactive problem perspective in Indonesian SMEs to open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(1), 1–20. <https://doi.org/10.3390/joitmc6010020>
- Pylaeva, I. S., Podshivalova, M. V., Alola, A. A., Podshivalov, D. V., & Demin, A. A. (2022). A new approach to identifying high-tech manufacturing SMEs with sustainable technological development: Empirical evidence. *Journal of Cleaner Production*, 363. <https://doi.org/10.1016/j.jclepro.2022.132322>
- Rezaei, J. (2015a). Best-worst multi-criteria decision-making method. *Omega*, 53, 49–57. <https://www.sciencedirect.com/science/article/pii/S0305048314001480>
- Rezaei, J. (2015b). Best-worst multi-criteria decision-making method. *Omega (United Kingdom)*, 53, 49–57. <https://doi.org/10.1016/j.omega.2014.11.009>
- Rezaei, J. (2015c). Best-worst multi-criteria decision-making method. *Omega*, 53, 49–57. <https://doi.org/https://doi.org/10.1016/j.omega.2014.11.009>
- Rezaei, J. (2016). Best-worst multi-criteria decision-making method: Some properties and a linear model. *Omega (United Kingdom)*, 64, 126–130. <https://doi.org/10.1016/j.omega.2015.12.001>
- Riahi, S., Bahroudi, A., Abedi, M., Lentz, D. R., & Aslani, S. (2023). Application of data-driven multi-index overlay and BWM-MOORA MCDM methods in mineral prospectivity mapping of porphyry Cu mineralization. *Journal of Applied Geophysics*, 213. <https://doi.org/10.1016/j.jappgeo.2023.105025>
- Roy, P. K., & Shaw, K. (2021). A multicriteria credit scoring model for SMEs using hybrid BWM and TOPSIS. *Financial Innovation*, 7(1), 1–27. <https://doi.org/10.1186/s40854-021-00295-5>
- Salimi, P. S., & Edalatpanah, S. A. (2020). Supplier selection using fuzzy AHP method and D-Numbers. *Journal of Fuzzy Extension and Applications*, 1, 1–14. <https://doi.org/10.22105/jfea.2020.248437.1007>
- Samputra, P. L., & Alfarizi, M. (2025). Can advanced society 5.0 technology create economic and social value for millennial and generation Z MSMEs

- in Surabaya, Indonesia? An economic resilience perspective. *Asia Pacific Management Review*. <https://doi.org/10.1016/j.apmr.2025.100355>
- Santolin, R. B., Hameed, H. Bin, Urbinati, A., & Lazzarotti, V. (2023). Exploiting circular economy enablers for SMEs to advance towards a more sustainable development: An empirical study in the post COVID-19 era. *Resources, Conservation and Recycling Advances*, 19. <https://doi.org/10.1016/j.rcradv.2023.200164>
- Sati, Z. E. (2024). Comparison of the criteria affecting the digital innovation performance of the European Union (EU) member and candidate countries with the entropy weight-TOPSIS method and investigation of its importance for SMEs. *Technological Forecasting and Social Change*, 200, 1–20. <https://doi.org/10.1016/j.techfore.2023.123094>
- Seiti, H., Hafezalkotob, A., Najafi, S. E., & Khalaj, M. (2019). Developing a novel risk-based MCDM approach based on D numbers and fuzzy information axiom and its applications in preventive maintenance planning. *Applied Soft Computing Journal*, 82. <https://doi.org/10.1016/j.asoc.2019.105559>
- Sepehri, M., Linh, N. T. T., Pouya, H. N., Bahramloo, R., Sadeghian, J., Ghermezcheshme, B., Talebi, A., Peyrovan, H., & Thanh, P. N. (2023). Developing a new multi-criteria decision-making for flood prioritization of sub-watersheds using concept of D numbers. *Acta Geophysica*. <https://doi.org/10.1007/s11600-023-01119-z>
- Shafer, G. (1976). A mathematical theory of evidence. *Princeton University Press*, 42.
- Shang, Z., Yang, X., Barnes, D., & Wu, C. (2022). Supplier selection in sustainable supply chains: Using the integrated BWM, fuzzy Shannon entropy, and fuzzy MULTIMOORA methods. *Expert Systems with Applications*, 195. <https://doi.org/10.1016/j.eswa.2022.116567>
- Shenoy, P. P. (2023). Making inferences in incomplete Bayesian networks: A Dempster-Shafer belief function approach. *International Journal of Approximate Reasoning*, 160, 108967. <https://doi.org/10.1016/j.ijar.2023.108967>
- Spearman, C. (2010). The proof and measurement of association between two things. *International Journal of Epidemiology*, 39(5), 1137–1150. <https://doi.org/10.1093/ije/dyq191>
- Svadlenka, L., Simic, V., Dobrodolac, M., Lazarevic, D., & Todorovic, G. (2020). Picture Fuzzy Decision-Making Approach for Sustainable Last-Mile Delivery. *IEEE Access*, 8, 209393–209414. <https://doi.org/10.1109/ACCESS.2020.3039010>
- Tanriverdi, G., Ecer, F., & Durak, M. Ş. (2022). Exploring factors affecting airport selection during the COVID-19 pandemic from air cargo carriers' perspective through the triangular fuzzy Dombi-Bonferroni BWM methodology. *Journal of Air Transport Management*, 105(September). <https://doi.org/10.1016/j.jairtraman.2022.102302>
- Teerasoponpong, S., & Sopadang, A. (2022). Decision support system for adaptive sourcing and inventory management in small- and medium-

- sized enterprises. *Robotics and Computer-Integrated Manufacturing*, 73. <https://doi.org/10.1016/j.rcim.2021.102226>
- Thakur, P., Kaczynska, A., Gandotra, N., Saini, N., & Salabun, W. (2022). The Application of the New Pythagorean Fuzzy Entropy to Decision-Making using Linguistic Terms. *Procedia Computer Science*, 207, 4525–4534. <https://doi.org/10.1016/j.procs.2022.09.516>
- Torkayesh, A. E., Pamucar, D., Ecer, F., & Chatterjee, P. (2021a). An integrated BWM-LBWA-CoCoSo framework for evaluation of healthcare sectors in Eastern Europe. *Socio-Economic Planning Sciences*, 78. <https://doi.org/10.1016/j.seps.2021.101052>
- Torkayesh, A. E., Pamucar, D., Ecer, F., & Chatterjee, P. (2021b). An integrated BWM-LBWA-CoCoSo framework for evaluation of healthcare sectors in Eastern Europe. *Socio-Economic Planning Sciences*, 78(September 2020), 101052. <https://doi.org/10.1016/j.seps.2021.101052>
- Torkayesh, A. E., Zolfani, S. H., Kahvand, M., & Khazaelpour, P. (2021). Landfill location selection for healthcare waste of urban areas using hybrid BWM-grey MARCOS model based on GIS. *Sustainable Cities and Society*, 67. <https://doi.org/10.1016/j.scs.2021.102712>
- Urbani, M., Gasparini, G., & Brunelli, M. (2023). A numerical comparative study of uncertainty measures in the Dempster–Shafer evidence theory. *Information Sciences*, 639. <https://doi.org/10.1016/j.ins.2023.119027>
- Vaezi, A., Rabbani, E., & Yazdian, S. A. (2024a). Blockchain-integrated sustainable supplier selection and order allocation: A hybrid BWM-MULTIMOORA and bi-objective programming approach. *Journal of Cleaner Production*, 444, 1–20. <https://doi.org/10.1016/j.jclepro.2024.141216>
- Vaezi, A., Rabbani, E., & Yazdian, S. A. (2024b). Blockchain-integrated sustainable supplier selection and order allocation: A hybrid BWM-MULTIMOORA and bi-objective programming approach. *Journal of Cleaner Production*, 444, 1–20. <https://doi.org/10.1016/j.jclepro.2024.141216>
- Vieira, F. C., Ferreira, F. A. F., Govindan, K., Ferreira, N. C. M. Q. F., & Banaitis, A. (2022). Measuring urban digitalization using cognitive mapping and the best worst method (BWM). *Technology in Society*, 71. <https://doi.org/10.1016/j.techsoc.2022.102131>
- Wang, C. N., Nguyen, N. A. T., Dang, T. T., & Hsu, H. P. (2021). Evaluating Sustainable Last-Mile Delivery (LMD) in B2C E-Commerce Using Two-Stage Fuzzy MCDM Approach: A Case Study from Vietnam. *IEEE Access*, 9, 146050–146067. <https://doi.org/10.1109/ACCESS.2021.3121607>
- Wang, M., Tian, Y., & Zhang, K. (2023). The fuzzy Weighted Influence Nonlinear Gauge System method extended with D numbers and MICMAC. *Complex and Intelligent Systems*, 9(1), 719–731. <https://doi.org/10.1007/s40747-022-00832-4>
- Wang, Y., Shi, F., Zhao, C., & Zhou, X. (2022). Identifying groundwater

- resilience zones in an arid inland basin using GIS-based Dempster-Shafer theory. *Journal of Hydrology: Regional Studies*, 44. <https://doi.org/10.1016/j.ejrh.2022.101232>
- Wijaya, L. I., Zunairoh, Z., Izharuddin, M., & Rianawati, A. (2025). Scope of E-Commerce use, innovation capability, and performance: Food sector MSMEs in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(1). <https://doi.org/10.1016/j.joitmc.2024.100459>
- Wiraguna, A., Rokhim, R., Wibowo, B., & Sembel, R. (2024). Dataset on direct and indirect effects of MSME loan securitization issuances on stability of banks. *Data in Brief*, 54. <https://doi.org/10.1016/j.dib.2024.110437>
- Wu, J., Wang, H., Wang, W., & Zhang, Q. (2019). Performance evaluation for sustainability of wind energy project using improved multi-criteria decision-making method. *Journal of Modern Power Systems and Clean Energy*, 7(5), 1165–1176. <https://doi.org/10.1007/s40565-019-0517-6>
- Wu, Y., Yong, X., Tao, Y., Zhou, J., He, J., Chen, W., & Yang, Y. (2022). Investment monitoring key points identification model of big science research infrastructures – Fuzzy BWM-entropy-PROMETHEE II method. *Socio-Economic Planning Sciences*. <https://doi.org/10.1016/j.seps.2022.101461>
- Wu, Y., Yong, X., Tao, Y., Zhou, J., He, J., Chen, W., & Yang, Y. (2023). Investment monitoring key points identification model of big science research infrastructures – Fuzzy BWM-entropy-PROMETHEE II method. *Socio-Economic Planning Sciences*, 86, 1–15. <https://doi.org/10.1016/j.seps.2022.101461>
- Wu, Z., Zhang, S., Liu, X., & Wu, J. (2019). Best-worst multi-attribute decision making method based on new possibility degree with probabilistic linguistic information. *IEEE Access*, 7, 133900–133913. <https://doi.org/10.1109/ACCESS.2019.2941821>
- Wulf, D., & Bertsch, V. (2017). A natural language generation approach to support understanding and traceability of multi-dimensional preferential sensitivity analysis in multi-criteria decision making. *Expert Systems with Applications*, 83, 131–144. <https://doi.org/10.1016/j.eswa.2017.04.041>
- Xiao, F. (2019). A Multiple-Criteria Decision-Making Method Based on D Numbers and Belief Entropy. *International Journal of Fuzzy Systems*, 21(4), 1144–1153. <https://doi.org/10.1007/s40815-019-00620-2>
- Xu, L., Wang, J., Ou, Y., Fu, Y., & Bian, X. (2022). A novel decision-making system for selecting offshore wind turbines with PCA and D numbers. *Energy*, 258. <https://doi.org/10.1016/j.energy.2022.124818>
- xue, A. da, & xue, D. da. (2020). A satisfaction degree of D numbers and its application in multi-criteria decision making. *IEEE Control Systems Society*, 5297–5302. <https://doi.org/10.1109/CCDC49329.2020.9163970>
- Yadegaridehkordi, E., Foroughi, B., Iranmanesh, M., Nilashi, M., & Ghobakhloo, M. (2023). Determinants of environmental, financial, and social sustainable performance of manufacturing SMEs in Malaysia. *Sustainable Production and Consumption*, 35, 129–140.

- <https://doi.org/10.1016/j.spc.2022.10.026>
- Yin, C., Jiang, C., Jain, H. K., & Wang, Z. (2020). Evaluating the credit risk of SMEs using legal judgments. *Decision Support Systems*, 136. <https://doi.org/10.1016/j.dss.2020.113364>
- Yousuf Ali, M., & Rahman, M. (2024). Statistical analysis of periodic MHD chemically radiative casson flow over an inclined cylinder with entropy optimization. *Heliyon*, 10(22). <https://doi.org/10.1016/j.heliyon.2024.e40021>
- Yunus, E. N., Ernawati, E., Nuraini, E., & Yuniarti, K. (2025). Post-crisis growth: Resource orchestration, innovation, and diversification in MSMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(2). <https://doi.org/10.1016/j.joitmc.2025.100570>
- Yusoff, M. S. B. (2019). ABC of Content Validation and Content Validity Index Calculation. *Education in Medicine Journal*, 11(2), 49–54. <https://doi.org/10.21315/eimj2019.11.2.6>
- Zeb, A., & Ihsan, A. (2020a). Innovation and the entrepreneurial performance in women-owned small and medium-sized enterprises in Pakistan. *Women's Studies International Forum*, 79. <https://doi.org/10.1016/j.wsif.2020.102342>
- Zeb, A., & Ihsan, A. (2020b). Innovation and the entrepreneurial performance in women-owned small and medium-sized enterprises in Pakistan. *Women's Studies International Forum*, 79, 1–8. <https://doi.org/10.1016/j.wsif.2020.102342>
- Zeng, W., Yi, G., Zhang, S., & Wang, Z. (2024). Multi-objective optimization method of injection molding process parameters based on hierarchical sampling and comprehensive entropy weights. *International Journal of Advanced Manufacturing Technology*, 133, 1481–1499. <https://doi.org/10.1007/s00170-024-13848-6>
- Zhang, H., Wang, X., Xu, W., & Dong, Y. (2023). From numerical to heterogeneous linguistic best–worst method: Impacts of personalized individual semantics on consistency and consensus. *Engineering Applications of Artificial Intelligence*, 117. <https://doi.org/10.1016/j.engappai.2022.105495>
- Zhang, Q., Wang, P., Pedrycz, W., & Li, Z. (2024). Neighborhood entropy guided by a decision attribute and its applications in multi-source information fusion and attribute selection. *Applied Soft Computing*, 167. <https://doi.org/10.1016/j.asoc.2024.112380>
- Zhang, S., Mao, Y., Liu, F., Xu, H., Qu, Z., & Liao, X. (2023). Multi-objective optimization and evaluation of PEMFC performance based on orthogonal experiment and entropy weight method. *Energy Conversion and Management*, 291, 1–11. <https://doi.org/10.1016/j.enconman.2023.117310>
- Zhang, X., Ma, Y., Li, Y., Zhang, C., & Jia, C. (2023). Tension prediction for the scraper chain through multi-sensor information fusion based on improved Dempster-Shafer evidence theory. *Alexandria Engineering Journal*, 64, 41–54. <https://doi.org/10.1016/j.aej.2022.08.039>

- Zhang, Z., Li, M., & Zhang, Q. (2024). A clustering coefficient structural entropy of complex networks. *Physica A: Statistical Mechanics and Its Applications*, 655. <https://doi.org/10.1016/j.physa.2024.130170>
- Zhou, J., Su, X., & Qian, H. (2020a). Risk Assessment on Offshore Photovoltaic Power Generation Projects in China Using D Numbers and ANP. *IEEE Access*, 8, 144704–144717. <https://doi.org/10.1109/ACCESS.2020.3014405>
- Zhou, J., Su, X., & Qian, H. (2020b). Risk Assessment on Offshore Photovoltaic Power Generation Projects in China Using D Numbers and ANP. *IEEE Access*, 8, 144704–144717. <https://doi.org/10.1109/ACCESS.2020.3014405>
- Zhu, Y., Tian, D., & Yan, F. (2020). Effectiveness of Entropy Weight Method in Decision-Making. *Mathematical Problems in Engineering*, 2020, 1–5. <https://doi.org/10.1155/2020/3564835>