



Prof. Bertha Maya Sopha

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Professor, Industrial Engineering Programme, Universitas Gadjah Mada (UGM), INDONESIA
Manager of Educational Services, Academic Development, and Postgraduate Studies, Faculty of Engineering,
Universitas Gadjah Mada (UGM), Indonesia.

Vice-chair of Indonesian Supply Chain Institute (ISLI) 2022-2025 (<https://isli.or.id/>)

Former Director, Former Laboratory Head of Supply Chain Engineering and Logistics (SCiLOG), Industrial
Engineering Programme, Universitas Gadjah Mada (UGM), INDONESIA

Former chair of Indonesian Association of Industrial Engineering Higher Education Institutions (BKSTI) 2020-2023
(<https://www.bksti.org/>)

Born: Malang (Indonesia), 11-08-1977, Female, Married, Indonesian

Research Interests

Supply Chain Engineering (Humanitarian Logistics, City Logistics), Complex System Modeling (Agent-Based Modeling and Simulation, System Dynamics), Industrial Ecology, Energy Transition and Policy

Honors and Awards

1. PKP Award (Visiting Professor at IMT Atlantique, Nantes, France), Directorate of Higher Education, Ministry of Education, Research and Technology 2024.
2. Best Paper Award in BoK Supply Chain Management – Seminar Nasional Teknik Industri BKSTI 2023
3. 5000 Indonesian Best Scientist AD Scientific Index 2022
4. Distinguished Woman in Industry and Academia (WIIA) Award 2021, The Industrial Engineering and Operations Management (IEOM) Society
5. Maritime Economics and Logistics Editor's Choice Award 2020, Palgrave-Macmillan-Springer
6. Best Paper Award – Institute of Industrial and Systems Engineering (IISE) Asia, Taiwan 2018
7. Best Paper Award (Silver Medal) – State University of Malang, Indonesia 2018
8. Highly cited research, Environmental Innovation and Societal Transition, Elsevier 2017
9. Best Research Award – Institute of Supply Chain and Logistics Indonesia (ISLI) 2017
10. Best Paper Award in Supply Chain and Logistics Category – Seminar Nasional Teknik Industri BKSTI 2017
11. Outstanding Achievement Award for Lecturer - Dosen Berprestasi (2nd place), Universitas Gadjah Mada 2015
12. Industrial Ecology Publication Prize, Norwegian University of Science and Technology 2011
13. Graduate with Distinction (Master), Chalmers University of Technology, Sweden 2004
14. STINT Award – The Swedish Foundation for Int'l Cooperation, Sweden 2002
15. Best Graduate with *cumlaude* honor, Universitas Gadjah Mada 2000
16. Siswa Teladan Nasional, 1991

Educations

S.T. Chemical Engineering, Universitas Gadjah Mada-Indonesia, 2000 (Cumlaude: 3.92)
M.Sc. Management of Production (Logistics and Transportation), Chalmers University of Technology 2004 (Graduate with Distinction)
Ph.D. Industrial Ecology, Norwegian University of Science and Technology 2011
Post. Doc Energy Behavior, Norwegian University of Science and Technology 2011-2012
IPU Indonesian Professional Engineer (Industrial Engineering) 2021
ASEAN Eng. Professional ASEAN Engineer (Industrial Engineering) 2018

Selected Publications in Peer Reviewed Journals (Scopus H-index = 20)

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=35729832600>

1. **Sopha, B.M.**, Asih, A.M.S., Agriawan, J.I. (2024). Adopters and non-adopters of drones in humanitarian operations: An empirical evidence from a developing country. *Progress in Disaster Science*, 21,100314.
2. Fajarika, D., Trapsilawati, F., **Sopha, B.M.** (2024). Influential factors of small and medium-sized enterprises growth across developed and developing countries: A systematic literature review. *International Journal of Engineering Business Management*, 16.
3. Isharyani, M.E., **Sopha, B.M.**, Wibisono, M.A., Tjahjono, B. (2024). Retail technology adaptation in traditional retailers: A technology-to-performance chain perspective, *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100204.
4. Nurcahyo, R., Wibowo, N., Gabriel, D.S., **Sopha, B.M.**, Ma'aram, A. (2024). Model development of community-based willingness to recycle for urban mining, *Cleaner Engineering and Technology*, 19, 100732.
5. Harwati, H., Asih, A.M.S., **Sopha, B.M.** (2024). Halal supply chain resilience index: development and implementation of measurement tool, *Journal of Islamic Marketing*, 15(9), pp. 2329-2359.
6. **Sopha, B.M.**, Purnamasari, D.M., Ma'mun, S. (2022). Barriers and Enablers of Circular Economy Implementation for Electric-Vehicle Batteries: From Systematic Literature Review to Conceptual Framework. *Sustainability*, 14(10):6359. <https://doi.org/10.3390/su14106359>.
7. Hadiyat, M.A., **Sopha, B.M.**, Wibowo, B.S. (2022). Response Surface Methodology Using Observational Data: A Systematic Literature Review. *Applied Sciences*, 12(20), 10663.
8. Mara, S.T. W., Rifai, S. P., **Sopha, B. M.** (2022). An adaptive lare neighborhood search heuristics for the flying sidekick traveling salesman problem with multiple drops. *Expert Systems with Applications*, 2015, 117647.
9. **Sopha, B. M.**, Arvianto, A., Tjahjono, B. (2022). Survival strategies of traditional retailers during the COVID-19 pandemic: Some insights from a developing country. *Journal of Industrial Engineering and Management*, 15(2), 185-201.
10. Imron, M. A., Widyastuti, K., Al Bihad, D., Satria, R. A., Prayoga, W., Pradopo, S. T., Suryatmojo, H., **Sopha, B. M.**, Harrison, M. E., Berger, U. (2022). Beyond climatic variation: Human disturbances alter the effectiveness of a protected area to reduce fires in a tropical peatland. *Frontiers in Forest and Global Change*, 5, 788023, 1-14.
11. Nurwidiana, N., **Sopha, B. M.**, Widyaparaga, A. (2022). Simulating Socio-Technical Transitions of Photovoltaics Using Empirically Based Hybrid Simulation-Optimization Approach. *Sustainability*, 14(9), 5411, 1-25.
12. Redi, A. A. N. P., **Sopha, B. M.**, Asih, A. M. S., Liperda, R. I. (2021). Collaborative hybrid aerial and ground vehicle routing for post-disaster assessment. *Sustainability*, 13(22), 12841, 1-25.
13. **Sopha, B. M.**, Mamun, S. (2021). Economic analysis and environmental assessment of aluminum debris power generator for deployment to communal-scale disaster areas. *Heliyon*, e07264.
14. **Sopha, B. M.**, Triasari, A. I., Cheah, L. (2021). Sustainable humanitarian operations: Multi-method simulation for large-scale evacuation, *Sustainability*, 13(13), 7488, 1-19.
15. **Sopha, B. M.**, Sakti, S., Prasetia, A. C. G., Dwiansarinopa, M. W., Cullinane, K. (2021). Simulating long-term performance of regional distribution centers in archipelagic logistics system. *Maritime Economics and Logistics*, 23(4), 697-725.
16. Nurwidiana, N., **Sopha, B. M.**, Widyaparaga, A. (2021). Modelling photovoltaic system adoption for households: A systematic literature review. *Evergreen*, 8(1), 69-81.
17. Arvianto, A., **Sopha, B. M.**, Asih, A. M. S., Imron, M. A. (2021). City logistics challenges and innovative solutions in developed and developing economies: A systematic literature review. *International Journal of Engineering Business Management*, 13, 1-18.
18. **Sopha, B. M.**, Jie, F., Himadhani, M. (2021). Analysis of the uncertainty sources and SMEs' performance. *Journal of Small Business and Entrepreneurship*, 33(1), 1-27.

19. Widyastuti, K., Imron, M., Pradopo, S., Suryatmojo, Hatma, **Sopha, B.M.**, Spessa, A., Berger, U. (2021). PeatFire: an agent-based model to simulate fire ignition and spreading in a tropical peatland ecosystem. *International Journal of Wildland Fire*, 30(2), 71-89.
20. **Sopha, B. M.**, Doni, R. E., Asih, A. M. S. (2019). Mount Merapi Eruption: Simulating Dynamic Evacuation and Volunteer Coordination using Agent-Based Modeling Approach. *Journal of Humanitarian Logistics and Supply Chain Management*, 9(2), 292-322.
21. Sakti, S., Yu, V. F., **Sopha, B. M.** (2019). Heterogeneous fleet location routing problem for waste management: A case study of Yogyakarta, Indonesia. *International Journal of Information and Management Sciences*, 30(1), 1-16.
22. **Sopha, B. M.**, Asih, A. M. S., Nurdiansyah, H. A., Maulida, R. Decision Support System for an Urban Distribution Center using Agent-Based Modelling: A Case Study of Yogyakarta Special Region Province, Indonesia. In Taniguchi, E., and Thompson, R. G. (2018). *City Logistics 2: Modeling and Planning Initiatives*, ISTE-Ltd and John Wiley & Sons, UK. [BOOK CHAPTER]
23. **Sopha, B. M.**, Asih, A. M. S., & Nursitasari, P. D. (2018). Location planning of Urban Distribution Center under uncertainty: A case study of Yogyakarta Special Region Province, Indonesia. *Journal of Industrial Engineering and Management*, 11(3), 542-568.
24. Asih, A. M. S., **Sopha, B. M.**, Kriptaniadewa, G. (2017) Comparison study of metaheuristics: Empirical application of delivery problems. *International Journal of Engineering Business Management*, 9, 1 - 12.
25. Irawan, M. Z., Belgiawan, P. F., Widyaparaga, A., Deendarlianto, Budiman, A., Muthohar, I., **Sopha, B. M.** (2018). A market share analysis for hybrid cars in Indonesia. *Case Studies on Transport Policy*, 6(3), 336-341.
26. **Sopha, B. M.**, Hestiani, A. (2017). A case study of Indonesian SMEs: An empirical evidence of SCM practices and their impact of firm performance. *International Journal of Services Technology and Management*, 24(5/6), 394-413.
27. **Sopha, B. M.**, Kloeckner, C. A & Febrianti, D. (2017). Using agent-based modeling to explore options supporting adoption of natural gas vehicles in Indonesia, *Journal of Environmental Psychology*, 52, 149-165.
28. **Sopha, B. M.**, Setiowati, Ma'mun, S., (2017). Environmental assessment of motorcycle using a life-cycle perspective. *Indonesian Journal of Life-Cycle Assessment and Sustainability*, 1, 22-28.
29. Deendarlianto, Widyaparaga, A., **Sopha, B. M.**, Budiman, A., Muthohar, I., Setiawan, I. C., Lindasista, A., Soemardjito, J., (2017). Scenarion analysis of energy mix for road transportation sector in Indonesia. *Renewable and Sustainable Energy Reviews*, 70, 13-23.
30. Irawan, M. Z., Belgiawan, P. F., Widyaparaga, A., Muthohar, I., **Sopha, B. M.** (2017). A market share analysis for hybrid cars in Indonesia. *Case Studies on Transport Policy*, article in press.
31. Handayani, D., **Sopha, B. M.**, Hartono, B., Herliansyah, M. K. (2017). The behavioral rules of people during disaster emergency evacuation: A case study of Mount Merapi Eruption in Indonesia. *Journal of Engineering and Applied Sciences*, 12(21).
32. **Sopha, B. M.**, Asih, A. M. S., Pradana, F. D., Gunawan, H. E., & Karuniawati, Y., (2016). Urban distribution center location: Combination of spatial analysis and multi-objective mixed-integer linear programming. *International Journal of Engineering Business Management*, 8, 1 -10.
33. **Sopha, B. M.**, & Perkasa, A. Optimization of municipal waste collection points in Yogyakarta City, Indonesia, *Teknosains*, 5(2), 81-140.
34. **Sopha, B. M.** (2013). Sustainable paper consumption: Exploring behavioral factors. *Social Sciences*, 2, 270-283.
35. **Sopha, B. M.**, Kloeckner, C. A & Hertwich, E. (2013) Adoption and diffusion of heating systems in Norway: Coupling agent-based modeling with empirical research. *Environmental Innovation and Societal Transitions*, 8, 42-61.
36. Klöckner, C. A., **Sopha, B. M.**, Matthies, E., & Bjørnstad, E. (2012). Energy efficiency in Norwegian households – identifying motivators and barriers with a focus group approach. *International Journal of Environment and Sustainable Development*, 12(4), 396-415

37. Skjevraak, G., & **Sopha, B. M.** (2012). Wood-pellet heating in Norway: Early adopters' satisfaction and experienced problems. *Sustainability*, 4, 1089-1103.
38. **Sopha, B. M.**, & Klöckner, C. A. (2011). Psychological factors in the diffusion of sustainable technology: A study of Norwegian households' adoption of wood-pellet heating. *Renewable and Sustainable Energy Reviews*, 15(1), 2756-2765.
39. **Sopha, B. M.**, Klöckner, C. A., & Hertwich, E. G. (2011). Exploring policy options for a transition to sustainable heating system diffusion using an agent-based simulation. *Energy Policy*, 39(5), 2722-2729.
40. **Sopha, B. M.**, Klöckner, C. A., & Hertwich, E. G. (2011). Adopters and non-adopters of wood-pellet heating in Norwegian households. *Biomass and Bioenergy*, 35(1), 652-662.
41. **Sopha, B. M.**, Klöckner, C. A., Skjevraak, G., & Hertwich, E. G. (2010). Norwegian households' perception of wood-pellet stove compared to air-to-air heat pump and electric heating. *Energy Policy*, 38(7), 3744-3754.
42. **Sopha, B. M.**, Fet, A. M., Keitsch, M. M., & Haskins, C. (2010). Using systems engineering to create a framework for evaluating industrial symbiosis options. *Systems Engineering*, 13(2), 149-160.

Industrial/Research Projects

1. Performance Measurement in Extended Manufacturing Enterprise– SINTEF Industrial Management, Norway (2003)
2. Framework of Procurement Measurement in Manufacturing Industry in Sweden (2004) - Chalmers University of Technology, Sweden
3. Logistics design of PT Pos Indonesia (2005) – PT Pos Indonesia
4. Design of *Industrial Symbiosis* at Mongstad Norway (2006) – NTNU Norway
5. Energy Behavior of Norwegian Households (2011 - 2012) - Enova SF, Norway
6. Life-Cycle Assessment (LCA) of motorcycle in Indonesia (2012-2013) – Ministry of Higher Education
7. Best transportation energy mix in Indonesia (2012 – 2015) - Toyota Motor Manufacturing Indonesia, PT Pertamina (Indonesian), and Toyota Motor Corporation ,Mizuho Information and Research Institute (Japan)
8. Natural gas governance in Indonesia (2013 – 2014) – PT PGN, Indonesia
9. Supply Chain of *Municipal Waste* in Yogyakarta (2013) – Ministry of Environment
10. Supply Chain Design of Indonesian Aircraft Industry (2014) - Boeing USA
11. The effect of fuel subsidy toward the transportation mode choice (2014) – Ministry of Higher Education
12. Simulation model of adoption and diffusion of NGV in Indonesia (2013-2015) – Ministry of Higher Education
13. *Life-Cycle Assessment* of Motorcycle in Indonesia (2013) – Ministry of Higher Education
14. Supply Chain Design of Bioethanol in Indonesia (2014) - Toyota Manufacturing Indonesia
15. Indonesian Transport Policy (2015-2016) – Toyota Manufacturing Indonesia
16. Supply Chain Design to Support Photovoltaic and Bio-refinery in Indonesia (2017) – US-Aid
17. Decision Support System for City Logistics (2016-2018) – Ministry of Research, Technology and Higher Education through MP3EI Scheme
18. Decision Support System for Humanitarian Logistics (2017-2019) – Ministry of Research, Technology and Higher Education through PTUPT Scheme
19. RESilient Emergency Preparedness for Natural Disaster Response through Operational Research (RESPOND-OR) – UK GCRF (2019-2021)
20. Integrated System of Aluminum Scrap Powered Generation (2020) - Massachusetts Institute of Technology (MIT) – Indonesia Research Alliance Program (MIRA)
21. Prediction Analysis of Specific Fuel Consumption for Diesel-fueled Power Plants in Indonesia – PT PLN (2021-2022)
22. Design of the Combined Ground Vehicle and Drone System for Humanitarian Operations (2021-2023) – Ministry of Education and Culture through World-Class Research scheme
23. Toward an Effective Road Transport Fleet Renewal Strategy for Indonesia – ERIA (2024-2025)

24. Techno-economic Analysis of Supply Chain Network of Liquefied Natural Gas Power Plant – PT PLN (2024)
25. Towards a Green Rail Future: Integrating Decarbonisation into Indonesia’s National Rail Strategy – UK Pact (2024-2026)

Intellectual Property Rights

1. Computer simulation for Humanitarian Logistics during Merapi Eruption – 000162540 (2019)
2. Book of Membangun Kemampuan Nasional dalam Rantai Pasok Pembangkit Listrik Tenaga Surya di Indonesia – 000225453(2020)
3. Pemodelan dan simulasi berbasis agen untuk sistem kompleks sosio-teknikal: Konsep, Metode dan Aplikasi – 000272210 (2021)
4. Addressing Global Issues with Collective and Concerted Actions: Indonesian Scholar Perspective for the G-20 Forum 2022

Professional Experiences

1. SINTEF Industrial Management, Norway (2003-2004)
2. ENOVA SF, Norway (2011-2012)
3. Center for Transportation and Logistics UGM, Indonesia (2004-present)
4. Center for Energy Studies UGM, Indonesia (2012-present)

Journal Reviewers

International Journal of Logistics, Journal of Cleaner Production, IEEE Transactions on Engineering Management, International Journal of Engineering, Business, and Management, Journal of Artificial Societies and Social Simulation, International Journal of Business and Globalization, Energy Policy, Ecological Economics, Technovation, Energy Research and Social Science, Environmental Modelling and Software, Computers and Industrial Engineering, Journal of Cleaner Production, Journal of Engineering and Technological Sciences, International Journal of Lean Six Sigma, International Journal of Disaster Risk Reduction, Energy Efficiency, Clean Technologies and Environmental Policy, Management Review Quarterly, Simulation Modelling Practice and Theory, Journal of Humanitarian Logistics and Supply Chain Management, Transactions on Computer Collective Intelligence, Heliyon, International Journal of Disaster Risk Reduction.

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