



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babae@istinye.edu.tr
erfansjs@gmail.com

Erfan Babae Tirkolae

Assistant Professor

Educational Data

2015 - 2019; Mazandaran University of Science and Technology, Iran
Ph.D., Industrial Engineering

2012 - 2014; Isfahan University of Technology, Iran
M.Sc., Industrial Engineering

2008 - 2012; Isfahan University of Technology, Iran
B.Sc., Industrial Engineering

Teaching Experiences

Oct 2020 - Present; Istinye University, Turkey

- Multi-Criteria Decision-Making
- Operations Research
- Modeling and Optimization
- Production Planning and Control
- Supply Chain Management
- Quality and Reliability Engineering
- Facilities Design and Planning
- Stochastic Models

Jan 2020 - Jul 2020; Damghan University, Iran

- Facility Layout Planning and Design
- Operations Research
- Engineering Economics

Jan 2016 - Jul 2020; University of Science & Technology of Mazandaran, Iran

- Probability Theory
- Operations Research
- Advanced Operations Research
- Facility Layout Planning and Design
- Engineering Economics

Jan 2019 - Jan 2020; Mazandaran University of Science & Technology, Iran

- Maintenance Planning
- Engineering Economics

Jan 2016 - Jul 2016; University College of Rouzbahan, Iran

- Maintenance Planning

Jan 2014 - Jan 2018; Payam Noor University, Iran

- Time and Motion Study
- Quality Control
- Industrial Engineering English
- Engineering Economics
- Management Information Systems

Sep 2012 - Jul 2014; Isfahan University of Technology, Iran (TA)

- Supply Chain Management
- Engineering Economics



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

Work Experiences

Sep 2016 - Jul 2018; Farasanat Shomal Company, Iran

- Quality Assurance & Training Expert

Jul 2012 - Jul 2014; Sardasaz Novin Industries, Iran

- Production Planning Expert

Completed Training Courses

- Knowledge Management, *IMQ*, Iran (2016)
- SPC, *IMQ*, Iran (2017)
- Principles of Management and Supervision, *IMQ*, Iran (2016)
- ISO 9001:2015, *Sapco- Iran Khodro*, Iran (2016)
- IATF 16949:2016, *Sapco- Iran Khodro*, Iran (2017)
- TPM, *IMQ*, Iran (2016)
- PSA requirements (Peugeot-Citroën), *Saipa*, Iran (2017)
- Process Audit, *Sapco- Iran Khodro*, Iran (2016)
- Logistic Requirements, *Sapco- Iran Khodro*, Iran (2017)
- Customer Requirements, *Sapco- Iran Khodro*, Iran (2017)

Administrative Tasks

March 2022 - present; Istinye University, Turkey

- Erasmus Coordinator of the department
- Capstone Project Coordinator of the faculty

Postdoc Fellowship

July 2023 - July 2024; Lebanese American University, Lebanon

- Department of Industrial and Mechanical Engineering

Honorary Research Fellowship

June 2023 - present; Yuan Ze University, Taiwan

- Department of Industrial Engineering and Management

Erasmus Staff Mobility for Teaching

Feb 2022 - March 2022; Politehnica University of Bucharest, Romania

- Department of Industrial Engineering and Robotics

Research Interests

- Supply Chain Management
- Production Planning and Scheduling
- Mathematical Modeling
- Waste Management
- Transportation and Routing
- Artificial Intelligence

Languages

- Persian & Mazandarani (Native)
- English
- Turkish

Computer Skills

- LINGO
- Minitab
- MSP
- GAMS
- SPSS
- Corel
- MATLAB
- Catia
- Adobe Audition
- Office
- Photoshop



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

Personal Interests

- Electronic keyboard
- Piano
- Iranian Tar and Setar
- Singing
- Swimming
- Bodybuilding
- Taekwondo
- Gymnastics
- Fishing

Editorial Memberships - WoS

1. Associate Editor of *IEEE Transactions on Fuzzy Systems* (ISSN: 1063-6706), IEEE (Q1),
2. Associate Editor of *Facta Universitatis, Series: Mechanical Engineering* (ISSN: 2335-0164), University of Niš (Q1),
3. Academic Editor of *PLOS ONE* (ISSN: 1932-6203), PLOS (Q1),
4. Academic Editor of *PeerJ Computer Science* (ISSN: 2376-5992), PeerJ (Q1),
5. Associate Editor of *Journal of Dynamics and Games* (ISSN: 2164-6066), AIMS (Q3),
6. Editorial Advisory Board member of *Management Decision* (MD) (ISSN: 0025-1747), emerald (Q2).

Editorial Memberships - Scopus

1. Editorial Board member of *Journal of Fuzzy Extension & Applications (JFEA)*, (ISSN: 2717-3453), Ayandegan Institute of Higher Education (Q1),
2. Editorial Board Member of *Intelligent Automation and Soft Computing: An International Journal* (ISSN: 1079-8587), Tech Science Press (Q2),
3. Editorial Board member of *International Journal of Supply and Operations Management (IJSOM)* (ISSN: 2383-2525). Kharazmi University (Q3),
4. Editorial Board member of *International Journal of Industrial Engineering and Production Research (IJIEPR)* (ISSN: 2008-4889). Iran University of Science and Technology (Q3).

Chief Editorial Memberships

- Co-Editor-in-Chief of *International Journal of Applied Optimization Studies (IAOS)*, (ISSN: 2645-4327).

Previous Editorial Memberships

1. Associate Editor of *Expert Systems with Applications* (ISSN: 0957-4174), Elsevier (WoS, Q1, 2022-2024).

Guest Editorial Activities - WoS

1. Tirkolaei, E.B., Weber, G. W., and Ranjbarzadeh, R.(2024). Advancing Knowledge-Based Economies and Societies through AI and Optimization: Innovations, Challenges, and Implications. *Frontiers in Artificial Intelligence*, frontiers (open),
2. Tirkolaei, E.B., Goli, A., and Weber, G. W. (2024). AI-driven Smart Infrastructures and Buildings for Sustainable Development in the Era of Industry 4.0. *Journal of Infrastructure, Policy and Development*, EnPress (open),



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

3. Tirkolae, E.B., Shokouhyar, S., Tanveer, M., and Siarry, P. (2023-2024). Advances of Optimization and Artificial Intelligence in Municipal Waste Management Systems. *Engineering Applications of Artificial Intelligence*, Elsevier (closed),
4. Garza-Reyes, J. A., Özceylan, E., Goli, A., Tirkolae, E. B., and Liao, H. (2023-2024). Smart Fuzzy Optimization in Sustainable Manufacturing and Supply Chain Management. *IEEE Transactions on Fuzzy Systems*, IEEE (closed),
5. Tirkolae, E. B., Azadnia, A. H., Ghadimi, P., Paydar, M. M., Leung, J., and Mirzazadeh, A. (2022-2023). Resilient, Sustainable and Smart Supply Chain Management in the Healthcare Industry: Application of Data Analytics and Optimization Techniques. *Operations Research Perspectives*, Elsevier (closed),
6. Tirkolae, E. B. (2022-2023). Advances of Artificial Intelligence for Sustainable Engineering and Medical Applications: Machine Learning and Optimization. *Bioengineering*, MDPI (open),
7. Ali, S. S., Weber, G. W., Tirkolae, E. B., and Goli, A. (2022-2023). Circular Economy Practices in the Context of Emerging Economies. *Sustainability*, MDPI (closed),
8. Erdibili, B., and Tirkolae, E. B. (2022-2023). Sustainable Development of Industrial Engineering With the Application of Intelligent Systems. *Sustainability*, MDPI (closed),
9. Weber, G. W., Goli, A., and Tirkolae, E. B. (2022-2023). Logistics and Operations Modelling and Optimisation for Sustainable Supply Chain. *Sustainability*, MDPI (closed),
10. Lotfi, R., Weber, G. W., and Tirkolae, E. B. (2022). Recent advances in viable and sustainable supply chain management. *Environmental Science and Pollution Research*, Springer (closed),
11. Weber, G. W., Arabnia, H., Aydin, N. S., and Tirkolae, E. B. and Goli, A. (2021). Advances of Machine Learning and Optimization in Healthcare Systems and Medicine. *Annals of Operations Research*, Springer (closed),
12. Tirkolae, E. B., Goli, A., and Mirjalili, S. (2021). Circular Economy Application in Designing Sustainable Medical Waste Management Systems. *Environmental Science and Pollution Research*, Springer (closed),
13. Tirkolae, E. B., Goli, A., Golpîra, H., and Gonzalez, E. S. (2021). Sustainable Global Supply Chain Management: From an International Perspective. *Sustainability*, MDPI (closed),
14. Goli, A., Tirkolae, E. B., and Gonzalez, E. S. (2021). Machine Learning in Sustainable Industrial Development. *Mathematical Problems in Engineering*, Hindawi (closed),
15. Weber, G. W., Goli, A., and Tirkolae, E. B. (2021). Computational Performance Analysis based on Novel Intelligent Methods: Exploration and Future Directions in Production and Logistics. *Foundations of Computing and Decision Sciences*, Poznań University of Technology (closed),
16. Tirkolae, E. B., Goli, A. and Malmir, B. (2021). Recent advances of solutions algorithms for logistics routing problems. *Logistics*, MDPI (closed).



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

Conference Chairmanships

- Chair of the "1st International Conference on Optimization and Data Science in Industrial Engineering (ODSIE 2023)", November 16-17, 2023, Istinye University, Istanbul, Turkey,
- Chair of the "2nd International Conference on Optimization and Data Science in Industrial Engineering (ODSIE 2024)", November 7-8, 2024, Istinye University, Istanbul, Turkey (to be held).

Scientific Panel Chairmanships/Memberships

- Chair of the panel "Machine Learning Algorithms" at *International Conference on Optimization and Data Science in Industrial Engineering (ODSIE2023)*, Istanbul, Turkey,
- International Program Committee Member of the *International Conference on Industrial Engineering, Intelligent Manufacturing, and Automation (ICIEIMA 2023)*, Tashkent, Uzbekistan,
- Chair of the panel "Optimization, Decision making and support systems" at *3rd International conference on science, engineering management and information technology (SEMIT2023)*, Ankara, Turkey,
- Chair of the "Special Session: Advances of Optimization and Artificial Intelligence in Municipal Waste Management Systems" at *The 5-th International Conference on Intelligent Decision Science- IDS-2022*, Istanbul, Turkey,
- Chair of the panel "Recent Advances of Circular Economy and Sustainable Development in Supply Chain Management" at *2nd International conference on science, engineering management and information technology (SEMIT2022-Sep)*, Ankara, Turkey,
- Chair of the panel "Artificial intelligence and expert systems" at *1st International conference on science, engineering management and information technology (SEMIT 2022-Feb)*, Ankara, Turkey,
- Member of the "Special Session: Human Factors and their Keys into Logistics and Production Planning, Development and Research" at *MANUFACTURING Conference 2022*, Poznan, Poland,
- Member of the "Special Session: Robust and stochastic modeling in logistics, production and warehouse planning in stream Specific Applications of Stochastic Modeling and Simulation in Engineering, Management and Science" and Organizing Committee at *31st European Conference on Operational Research-EURO ATHENS 2021*, Athens, Greece,

Org./Sci./Advis. Committee Memberships

- "International Conference on Recent Advances in Operations Research & Business Analytics (RAORBA-2024)", Bharatiya Vidya Bhavan Institute of Management Science, In association with Operational Research Society of India (ORSI), West Bengal, India,
- "22nd International Logistics and Supply Chain Congress (LMSCM2024)", Istinye University, Turkey",
- "The UCN International Conference of Industrial Engineering (2024), Universidad Catolica del Norte, Chile",
- "International Conference on Civil Engineering and Intelligent Construction, ICCEIC. China",
- "International conference on science, engineering management and information technology, (SEMIT2022-Feb, SEMIT2022-Sep, SEMIT2023). Ankara, Turkey",



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

- "International Conference on Advanced Intelligent Systems for Sustainable Development (2019-2023), *AI2SD*. Tangier, Morocco",
- "The 5th International Conference on Intelligent Decision Science (2022), *IDS-2022*. Istanbul, Turkey",
- "*MANUFACTURING Conference 2022*, Poznan, Poland",
- "2nd International Conference on Challenges and New Solutions in Industrial Engineering and Management and Accounting (2021), *ICCNIEMA 2021*. Damghan, Iran",
- "International Conference on Polymeric, Metallic and Composite Materials (2021), *PMCM 2021*. Wuhan, China",
- "1st National Conference on Optimization & New Solution (2021). Nahavand, Iran; *Methods (2021)*, *ONSM 2021*. Nahavand, Iran",
- "1st National Conference on Transportation & Logistic (2021). Babolsar, Iran",
- "7th International Conference on Logistics and Supply Chain Management (2020), *LSCM 2020*. Tehran, Iran",
- "Euro Conference on Catalysis & Chemical Engineering Advancements (2019), *Catalysis 2019*. Rome, Italy",
- "International Conference of Computer Science and Information Technology (2019), *ICoSNIKOM 2019*. Medan, Indonesia".

Research Council Review Panel Memberships

- o *Australian Research Council (ARC)*, Funded by the National Competitive Grants Program (NCGP) of Australia,
- o *Latvian Council of Science (LCS) of the Republic of Latvia*, under the supervision of the Minister for Education and Science,
- o *National Science Centre of Poland*, Funded by Ministry of Science and Higher Education (Poland).

Review Panel Memberships - WoS

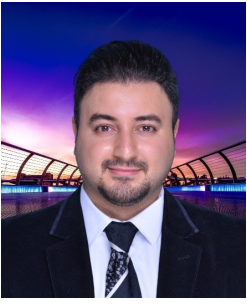
- o Reviewer in more than **200** prestigious journals such as *IEEE Transactions on Fuzzy Systems* (IEEE), *Computers & Operations Research* (Elsevier), *Transportation Research Part E: Logistics and Transportation Review* (Elsevier), *Journal of Cleaner Production* (Elsevier), *Science of The Total Environment* (Elsevier), *Swarm and Evolutionary Computation* (Elsevier), *Waste Management* (Elsevier) and *Artificial Intelligence Review* (Springer),
- o Reviewer in many international conferences (e.g., IFORS and IEEE),
- o Book proposal reviewer in emerald (2022).

Thesis Supervisions/Co-supervisions

- o 3 Ph.D. theses under co-supervision (Mazandaran University of Science and Technology (2); Poznan University of Technology (1))
- o 1 co-supervised Ph.D. theses (Mazandaran University)
- o Supervised 9 master theses (2016-2024) (Mazandaran University of Science and Technology (8); University of Science and Technology of Mazandaran (1))

PhD Internship Supervisions

- o Artificial Intelligence to Waste Management Systems Design. (Dec 2022). University of Mascara, Algeria (Student: Boualem Sid Ahmed El Mahdi).



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

International Thesis Examination Experiences

- M.Sc. theses. (2022-present). UiT The Arctic University of Norway; Qatar University,
- Ph.D. theses. (2023-present). Anna University, India,
- Ph.D. theses. (2022-2023). Univerzita Hradec Králové, Czech Republic.

Speaking Experiences

- “*Speaker at International Conference on Recent Advances in Operations Research & Business Analytics (RAORBA-2024)*”, “Integrated design of a sustainable waste management system with co-modal transportation network”, Bharatiya Vidya Bhavan Institute of Management Science, In association with Operational Research Society of India (ORSI) (July 26), West Bengal, India,
- “*Speaker at the 17th International Conference of Iranian Operations Research Society*”, “Integrated design of a sustainable waste management system with co-modal transportation network”, Kharazmi University (July 4), Tehran, Iran,
- “*Speaker at the International Conference on Applied Mathematics (ICAM-2024)*”, “Integrated design of a sustainable waste management system with co-modal transportation network”, Vidyasagar University (June 28), West Bengal, India,
- “*Speaker at the 3rd International Conference on Nonlinear Applied Analysis and Optimization (ICNAAO-2023)*”, “Travelling Salesman Problem with Drone and Bicycle”, National Institute of Technology (December 10), Durgapur, India,
- “*Speaker at Second International Conference on Optimization of Production and Service Systems (COPSS 2022)*”, “Sustainable Fuzzy Multiple-Trip Location-Routing Problem for Medical Waste Management during the COVID-19 Outbreak”, University of Guilan (November 16), Guilan, Iran,
- “*Speaker at a Logistics Systems Seminar Series 2022*”, “Sustainable Aggregate Production-Transportation Planning”, Yaşar University (November 7), Izmir, Turkey,
- “*Speaker at First APORS Youth Forum 2022*”, “Sustainable fuzzy multi-trip location-routing problem for medical waste management during the COVID-19 outbreak”, Operations Research Society of China (26 April),
- “*Speaker at 1st International Conference of Business Development and Digital Transformation (ICBDDT 2022)*”, “Sustainable Aggregate Production-Transportation Planning: Towards Digital Transformation”, University of Isfahan (November 10), Isfahan, Iran,
- “*Speaker at Logistics Winter School 2022*”, “Sustainable fuzzy multi-trip location-routing problem for medical waste management during the COVID-19 outbreak”, Amirkabir University of Technology (February 22), Iran,
- “*Speaker at Statistics Probability Operational Research seminars (SPOR2021)*”, “Just-in-Time Energy-Aware Flow Shop Scheduling Problem With Outsourcing Option, Human Factors and Stochastic Demand”, Atılım University (April 15), Turkey,
- “*Speaker at International Conference on Logistics and Supply Chain Management (LSCM2020)*”, “Designing an Efficient Optimization System to Maximize the Total Value of Reverse Logistics in Waste Management with cars”, Kharazmi University (December 23), Iran,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

- “Speaker at The 5th International Conference on Environment and Disasters (ICED2021)”, “Sustainable location-allocation-transportation-inventory problem to design an urban waste management system under uncertainty”, International Association of Management Science and Engineering Technology (IAMSET) (July 22), China,
- “Speaker at 2nd International Conference on Challenges and New Solutions in Industrial Engineering and Management and Accounting (ICCN-SIEMA2021)”, “Fuzzy Mathematical Programming and Self-Adaptive Artificial Fish Swarm Algorithm for Just-in-Time Energy-Aware Flow Shop Scheduling Problem with Outsourcing Option”, Damghan University (May 6), Iran.

Accomplishments/Awards

- **Outstanding Early Career Researcher Award (Runner-up)**, *IEEE Bio-inspired Computing STC Annual Event* (2023),
- **Top 2% of reviewers for 2023**, *International Journal of Production Research* (IJPR),
- **WM&R Rising Star Award 2022**: Tirkolaei, E. B., and Aydin, N. S. (2021). A sustainable medical waste collection and transportation model for pandemics. *Waste Management & Research*, 39, 34-44 (best paper award),
- Featured among the "World's Top 2% Researchers/Scientists in 2022" list identified by **Elsevier BV, Stanford University** — ranked 38,338th out of 210,199 (all fields),
- Featured among the "World's Top 2% Researchers/Scientists in 2021" list identified by **Elsevier BV, Stanford University** — ranked 77,495th out of 200,409 (all fields),
- **Best Researcher** of the Faculty of Engineering at *Istinye University* in 2021,
- **Ranked "11th" Turkey-based scholar** with notable publication output based on *Scimago Journal Ranks 2020*,
- *Ph.D. award winner-top doctoral thesis* in **International Conference on Logistics and Supply Chain Management (LSCM2020)**, Kharazmi University, Iran,
- *Top peer reviewer* and *Excellent reviewer* recognition by **Clarivate WoS**,
- *Outstanding reviewer* recognition by **Journal of Cleaner Production, Computers and Industrial Engineering**, etc.

Grant Projects

- Academic Supervisor in "Demand Forecasting in the Automotive Spare Parts Sector using Artificial Intelligence Tools", 2023-2024, *TUBITAK 2209-A University Students Research Projects Support Program*,
- Researcher in "Sustainable Aggregate Production Planning using Multi-Criteria Decision-Making, Mathematical Modeling and Machine Learning", 2020-2022, *MSRT-TUBITAK joint research projects*.

Book Editorships

- Mirzazadeh, A., Erdebili, B., Tirkolaei, E. B., Weber, G. W., and Kar, A. K. (2023). Science, Engineering Management and Information Technology: First International Conference, SEMIT 2022, Part I. *Communications in Computer and Information Science* (CCIS, volume 1808), Springer Cham. ISBN: 978-3-031-40395-8,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

- Mirzazadeh, A., Erdebili, B., Tirkolae, E. B., Weber, G. W., and Kar, A. K. (2023). Science, Engineering Management and Information Technology: First International Conference, SEMIT 2022, Part II. *Communications in Computer and Information Science* (CCIS, volume 1809), Springer Cham. ISBN: 978-3-031-40398-9,
- Molamohamadi, Z., Tirkolae, E. B., Mirzazadeh, A., Weber, G. W. (2021). Logistics and Supply Chain Management. *Part of the Communications in Computer and Information Science book series* (CCIS, volume 1458), Springer Cham. ISBN: 978-3-030-89743-7.

Editorial Notes/Prefaces - WoS

- Erdebili, B., and Tirkolae, E. B. (2024). Sustainable Development of Industrial Engineering with the Application of Intelligent Systems. *Sustainability*, 16(5), 1928,
- Ali, S. S., Weber, G. W., Tirkolae, E. B., and Goli, A. (2024). Circular Economy Practices in the Context of Emerging Economies. *Sustainability*, 16(4), 1417,
- Weber, G. W., Arabnia, H., Aydin, N. S., and Tirkolae, E. B. (2023). Preface: advances of machine learning and optimization in healthcare systems and medicine. *Annals of Operations Research*, 1-2,
- Lotfi, R., Weber, G. W., and Tirkolae, E. B. (2023). Recent advances in viable and sustainable supply chain management. *Environmental Science and Pollution Research*, 1-2,
- Weber, G. W., Goli, A., and Tirkolae, E. B. (2023). Logistics and Operations Modelling and Optimization for Sustainable Supply Chain. *Sustainability*, 15(17), 12727,
- Tirkolae, E. B., Goli, A., Golpîra, H., and Santibañez Gonzalez, E. D. (2023). Sustainable Global Supply Chain Management from an International Perspective. *Sustainability*, 15(16), 12154,
- Tirkolae, E. B., Goli, A., and Malmir, B. (2023). Recent Advances of Solutions Algorithms for Logistics Routing Problems. *Logistics*, 7(3), 51,
- Goli, A., Tirkolae, E. B., and Weber, G. W. (2022). Preface to the Special Issue on Computational Performance Analysis based on Novel Intelligent Methods: Exploration and Future Directions in Production and Logistics. *Foundations of Computing and Decision Sciences*, 47(2), 107-110,
- Tirkolae, E. B., Goli, A., and Mirjalili, S. (2022). Circular economy application in designing sustainable medical waste management systems. *Environmental Science and Pollution Research*, 1-2.

Papers - WoS

1. Tirkolae, E.B., Cakmak, E., and Karadayi-Usta, S. (2024). Traveling salesman problem with drone and bicycle: multimodal last-mile e-mobility. *International Transactions in Operational Research*, 1-27,
2. Dhayef, D. H., Al-Zubaidi, S. S., Al-Kindi, L. A., and Tirkolae, E. B. (2024). Similarity coefficient and TOPSIS methods for designing flexible machine cell layout: a case study of electrical and electronic industries. *Annals of Operations Research*, 1-30,
3. Biswas, S., Belamkar, P., Sarma, D., Tirkolae, E. B., and Bera, U. K. (2024). A multi-objective optimization approach for resource allocation and transportation planning in institutional quarantine centres. *Annals of Operations Research*, 1-45,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

4. Bouyer, A., Shahgholi, P., Arasteh, B., and Tirkolae, E. B. (2024). Local Core Expanding-Based Label Diffusion and Local Deep Embedding for Fast Community Detection Algorithm in Social Networks. *Computers and Electrical Engineering*, 119, 109502,
5. Babaei, A., Tirkolae, E. B., & Amjadian, A. (2024). Crafting efficient blockchain adoption strategies under risk and uncertain environments. *Alexandria Engineering Journal*, 103, 137-147,
6. Saqib, M., Ashraf, S., Farid, H. M. A., Simic, V., Kousar, M., & Tirkolae, E. B. (2024). Benchmarking of industrial wastewater treatment processes using a complex probabilistic hesitant fuzzy soft Schweizer-Sklar prioritized-based framework. *Applied Soft Computing*, 111780,
7. Aydin, N. S., Dawoud, O., & Tirkolae, E. B. (2024). Designing a Sustainable Water Supply Strategy through Biobjective Mixed-Integer Linear Programming: A Case Study on Gaza. *Journal of Water Resources Planning and Management*, 150(8), 05024008,
8. Babaei, A., Tirkolae, E.B., and Ali. S.S. (2024). Innovative supply chain network design with two-step authentication and environmentally-friendly blockchain technology. *Annals of Operations Research*, 1-31,
9. Ganji, S. S., Tirkolae, E. B., and Jahed, R. (2024). Evaluating the Performance of Intercity Road Freight Transport: Double-Frontier Parallel Network Cross-Efficiency Model. *Socio-Economic Planning Sciences*, 101942,
10. Jovanovic, L., Zivkovic, M., Bacanin, N., Dobrojevic, M., Simic, V., Sadasivuni, K. K., and Tirkolae, E. B. (2024). Evaluating the performance of metaheuristic-tuned weight agnostic neural networks for crop yield prediction. *Neural Computing and Applications*, 1-30,
11. Sepehri, A., Tirkolae, E.B., Simic, V., and Ali. S.S. (2024). Designing a reliable-sustainable supply chain network: adaptive m-objective epsilon-constraint method. *Annals of Operations Research*, 1-32,
12. Görçün, Ö.F., Tirkolae, E.B., Aytekin, A, and Korucuk, S. (2024). Sustainability performance assessment of freight transportation modes using an integrated decision-making framework based on m-generalized q-neutrosophic sets. *Artificial Intelligence Review*, 57, 121,
13. Amirteimoori, A., Tirkolae, E. B., Amirteimoori, A., Khakbaz, A., and Simic, V. (2024). A novel parallel heuristic method to design a sustainable medical waste management system. *Journal of Cleaner Production*, 141897,
14. Rajabi-Kafshgar, A., Seyedi, I., and Tirkolae, E. B. (2024). Circular closed-loop supply chain network design considering 3D printing and PET bottle waste. *Environment, Development and Sustainability*, 1-37,
15. Tirkolae, E. B., Simić, V., Ghobakhloo, M., Foroughi, B., Asadi, S., and Iranmanesh, M. (2024). Integrated design of a sustainable waste management system with co-modal transportation network: A robust bi-level decision support system. *Journal of Cleaner Production*, 141760,
16. Görçün, Ö. F., Tirkolae, E. B., Küçükönder, H., and Garg, C. P. (2024). Assessing and selecting sustainable refrigerated road vehicles in food logistics using a novel multi-criteria group decision-making model. *Information Sciences*, 661, 120161,

**Affiliation**

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

17. Nikseresht, A., Shokouhyar, S., Tirkolae, E. B., Nikookar, E., and Shokoohyar, S. (2024). An intelligent decision support system for warranty claims forecasting: Merits of social media and quality function deployment. *Technological Forecasting and Social Change*, 201, 123268,
18. Ala, A., Simic, V., Bacanin, N., and Tirkolae, E. B. (2024). Blood supply chain network design with lateral freight: A robust possibilistic optimization model. *Engineering Applications of Artificial Intelligence*, 133, 108053,
19. Iranmanesh, M., Senali, M. G., Foroughi, B., Ghobakhloo, M., Asadi, S., and Tirkolae, E. B. (2024). Effect of augmented reality applications on attitude and behaviours of customers: cognitive and affective perspectives. *Asia-Pacific Journal of Business Administration*, 1-26,
20. Wang, G., Chen, H., Han, H., Bi, J., Qiao, J., and Tirkolae, E. B. (2024). Predicting Water Quality With Non-stationarity: Event-Triggered Deep Fuzzy Neural Network. *IEEE Transactions on Fuzzy Systems*, 1-10,
21. Dhayef, D. H., Al-Zubaidi, S. S., Al-Kindi, L. A., and Tirkolae, E. B. (2024). Cell formation and layout design using genetic algorithm and TOPSIS: A case study of Hydraulic Industries State Company. *Plos One*, 19(1), e0296133,
22. Ranjbarzadeh, R., Ghoushci, S. J., Anari, S., Safavi, S., Sarshar, N. T., Tirkolae, E. B., and Bendeche, M. (2024). A Deep Learning Approach for Robust, Multi-oriented, and Curved Text Detection. *Cognitive Computation*, 16, 1979–1991,
23. Arasteh, B., Arasteh, K., Kiani, F., Sefati, S. S., Fratu, O., Halunga, S., and Tirkolae, E. B. (2024). A Bioinspired Test Generation Method Using Discretized and Modified Bat Optimization Algorithm. *Mathematics*, 12(2), 186,
24. Khakbaz, A., Alfares, H. K., Amirteimoori, A., and Tirkolae, E. B. (2024). A novel cross-docking EOQ-based model to optimize a multi-item multi-supplier multi-retailer inventory management system. *Annals of Operations Research*, 1-27,
25. Babaei, A., Khedmati, M., Jokar, M. R. A., and Tirkolae, E. B. (2023). A decision support framework to evaluate the sustainability performance of urban road transportation. *Environmental Science and Pollution Research*, 1-22,
26. Venkatachalam, K., Al-Onazi, B. B., Simic, V., Tirkolae, E. B., and Jana, C. (2023). DeepFND: an ensemble-based deep learning approach for the optimization and improvement of fake news detection in digital platform. *PeerJ Computer Science*, 9, e1666,
27. Jolfai, A. A., Alinaghian, M., Bahrami, R., and Tirkolae, E. B. (2023). Generalized vehicle routing problem: Contemporary trends and research directions. *Heliyon*, 9(12), e22733,
28. Shidpour, H., Shidpour, M., and Tirkolae, E. B. (2023). A Multi-Phase Decision-Making Approach for Supplier Selection and Order Allocation with Corporate Social Responsibility. *Applied Soft Computing*, 110946,
29. Ranjbarzadeh, R., Zarbakhsh, P., Caputo, A., Tirkolae, E. B., and Bendeche, M. (2023). Brain tumor segmentation based on optimized convolutional neural network and improved chimp optimization algorithm. *Computers in Biology and Medicine*, 168, 107723,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

30. Foroughi, B., Hongsachart, H., Asadi, S., Iranmanesh, M., Ghobakhloo, M., and Tirkolaee, E. B. (2023). Reuse intention of augmented reality apps: recreational consciousness as moderator. *The Service Industries Journal*, 1-42,
31. Ekhtiari, M., Zandieh, M., and Tirkolaee, E. B. (2023). Optimizing the Dam Site Selection Problem considering Sustainability Indicators and Uncertainty: An Integrated Decision-Making Approach. *Journal of Cleaner Production*, 139240,
32. Todorovic, M., Stanisic, N., Zivkovic, M., Bacanin, N., Simic, V., and Tirkolaee, E. B. (2023). Improving audit opinion prediction accuracy using metaheuristics-tuned XGBoost algorithm with interpretable results through SHAP value analysis. *Applied Soft Computing*, 110955,
33. Shahidzadeh, M. H., Shokouhyar, S., Safari, A., Tirkolaee, E. B., and Shokoohyar, S. (2023). Discovering the Secret behind Managing WEEE: Deep Learning Method in the Industry 4.0. *Annals of Operations Research*, 1-36,
34. Jafarzadeh-Ghoushchi, S., Asghari, M., Mardani, A., Simic, V., and Tirkolaee, E. B. (2023). Designing an efficient humanitarian supply chain network during an emergency: A scenario-based multi-objective model. *Socio-Economic Planning Sciences*, 90, 101716,
35. McDaid, C., Azadnia, A. H., Onofrei, G., and Tirkolaee, E. B. (2023). Industry readiness measurement for circular supply chain implementation: an Irish dairy industry perspective. *Annals of Operations Research*, 1-46,
36. Arasteh, B., Bouyer, A., Ghanbarzadeh, R., Rouhi, A., Mehrabani, M. N., and Tirkolaee, E. B. (2023). Data Replication in Distributed Systems using Olympiad Optimization Algorithm. *Facta Universitatis, Series: Mechanical Engineering*, 1-28,
37. Dadashi, A., Mirbaha, B., Atan, Z., and Tirkolaee, E. B. (2023). Prioritizing highway safety improvement projects using a stochastic optimization model with robust constraints. *Soft Computing*, 1-14,
38. Khakbaz, A., Mensi, W., Tirkolaee, E. B., Hammoudeh, S., and Simic, V. (2023). The combined effects of interest and inflation rates on inventory systems: A comparative analysis across countries. *International Journal of Production Economics*, 109035,
39. Tirkolaee, E. B., Torkayesh, A. E., Tavana, M., Goli, A., Simic, V., and Ding, W. (2023). An Integrated Decision Support Framework for Resilient Vaccine Supply Chain Network Design. *Engineering Applications of Artificial Intelligence*, 126, 106945,
40. Ghobakhloo, M., Iranmanesh, M., Foroughi, F., Tirkolaee, E. B., Asadi, S., and Amran, A. (2023). Industry 5.0 implications for inclusive sustainable manufacturing: An evidence-knowledge-based strategic roadmap. *Journal of Cleaner Production*, 138023,
41. Karadayi-Usta, S. and Tirkolaee, E. B. (2023). Evaluating the Sustainability of Fashion Brands Using a Neutrosophical ORESTE Approach. *Sustainability*, 15(19), 14406,
42. Ghasemi, P., Goodarzian, F., Simic, V., and Tirkolaee, E. B. (2023). A DEA-Based Simulation-Optimization Approach to Design a Resilience Plasma Supply Chain Network: A Case Study of the COVID-19 Outbreak. *International Journal of Systems Science: Operations & Logistics*, 10(1), 1-27,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

43. Ranjbarzadeh, R., Sadeghi, S., Fadaeian, A., Jafarzadeh Ghoushchi, S., Tirkolaee, E. B., Caputo, A., and Bendeche, M. (2023). ETACM: an encoded-texture active contour model for image segmentation with fuzzy boundaries. *Soft Computing*, 1-13,
44. Goli, A., Tirkolaee, E. B., Golmohammadi, A. M., Atan, Z., Weber, G. W., and Ali, S. S. (2023). A Robust Optimization Model to Design an IoT-based Sustainable Supply Chain Network with Flexibility. *Central European Journal of Operations Research*, 1-22,
45. Nayeri, S., Khoei, M. A., Rouhani-Tazangi, M. R., GhanavatiNejad, M., Rahmani, M., and Tirkolaee, E. B. (2023). A data-driven model for sustainable and resilient supplier selection and order allocation problem in a responsive supply chain: A case study of healthcare system. *Engineering Applications of Artificial Intelligence*, 124, 106511,
46. Simic, V., Dabic-Miletic, S., Tirkolaee, E. B., Stević, Z., Ala, A., and Amirteimoori, A. (2023). Neutrosophic LOPCOW-ARAS model for prioritizing industry 4.0-based material handling technologies in smart and sustainable warehouse management systems. *Applied Soft Computing*, 143, 110400,
47. Simic, V., Dabic-Miletic, S., Tirkolaee, E. B., Stević, Z., Devenci, M., and Tapan, S. (2023). Neutrosophic CEBOM-MACONT model for sustainable management of end-of-life tires. *Applied Soft Computing*, 143, 110399,
48. Tirkolaee, E. B., and Aydin, N. S. (2023). A bi-level decision-making system to optimize a robust-resilient-sustainable aggregate production planning problem. *Expert Systems with Applications*, 228, 120476,
49. Goli, A., and Tirkolaee, E. B. (2023). Designing a portfolio-based closed-loop supply chain network for dairy products with a financial approach: Accelerated Benders decomposition algorithm. *Computers and Operations Research*, 106244,
50. Tomaskova, H., Tirkolaee, E. B., and Raut, R. D. (2023). Business process optimization for trauma planning. *Journal of Business Research*, 164, 113959,
51. Görçün, Ö. F., Aytakin, A., Korucuk, S., and Tirkolaee, E. B. (2023). Evaluating and selecting sustainable logistics service providers for medical waste disposal treatment in the healthcare industry. *Journal of Cleaner Production*, 137194,
52. Amirteimoori, A., Tirkolaee, E. B., Simic, V., and Weber, G. W. (2023). A parallel heuristic for hybrid job shop scheduling problem considering conflict-free AGV routing. *Swarm and Evolutionary Computation*, 101312,
53. Golpîra, H., Tirkolaee, E. B., Maihami, R., and Karimi, K. (2023). A Robust Tri-Objective Optimization to Supply Chain Configuration under Vendor-Managed Inventory Policy and Supply Chain Visibility. *Expert Systems with Applications*, 119916,
54. Korucuk, S., Tirkolaee, E. B., Aytakin, A., Karabasevic, D., and Karamaşa, Ç. (2023). Agile Supply Chain Management based on Critical Success Factors and Most Ideal Risk Reduction Strategy in the Era of Industry 4.0: Application to Plastic Industry. *Operations Management Research*, 1-22,
55. Aytakin, A., Okoth, B. O., Korucuk, S., Mishra, A. R., Memiş, S., Karamaşa, Ç., and Tirkolaee, E. B. (2023). Critical Success Factors of Lean Six Sigma to Select the Most Ideal Critical Business Process using q-ROF CRITIC-ARAS Technique: Case study of Food Business. *Expert Systems with Applications*, 224, 120057,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

56. Ecer, F., Ögel, İ. Y., Krishankumar, R., and Tirkolaee, E. B. (2023). The q-rung fuzzy LOPCOW-VIKOR model to assess the role of unmanned aerial vehicles for precision agriculture realization in the Agri-Food 4.0 era. *Artificial Intelligence Review*, 1-34,
57. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolaee, E. B. (2023). An Integrated Decision Support System to Achieve Sustainable Development in Transportation Routes with Traffic Flow. *Environmental Science and Pollution Research*, 1-16,
58. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolaee, E. B. (2023). Designing an integrated blockchain-enabled supply chain network under uncertainty. *Scientific Reports*, 13(1), 3928,
59. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolaee, E. B. (2023). Sustainable transportation planning considering traffic congestion and uncertain conditions. *Expert Systems with Applications*, 119792,
60. Torkayesh, A. E., Tirkolaee, E. B., Bahrini, A., Pamucar, D., and Khakbaz, A. (2023). A Systematic Literature Review of MABAC Method and Applications: An Outlook for Sustainability and Circularity. *Informatica*, 1-34,
61. Goodarzian, F., Ghasemi, P., Gonzalez, E. S., and Tirkolaee, E. B. (2023). A Sustainable-Circular Citrus Closed-Loop Supply Chain Configuration: Pareto-based Algorithms. *Journal of Environmental Management*, 328, 116892,
62. Ranjbarzadeh, R., Ghouschi, S. J., Sarshar, N. T., Tirkolaee, E. B., Ali, S. S., Kumar, T., and Bendeche, M. (2023). ME-CCNN: Multi-Encoded Images and a Cascade Convolutional Neural Network for Breast Tumor Segmentation and Recognition. *Artificial Intelligence Review*, 1-38,
63. Zolfani, S. H., Görçün, Ö. F., Çanakçıoğlu, M., and Tirkolaee, E. B. (2023). Efficiency Analysis Technique with Input and Output Satisficing Approach based on Type-2 Neutrosophic Fuzzy Sets: A Case Study of Container Shipping Companies. *Expert Systems with Applications*, 218, 119596,
64. Su, D., Zhang, L., Peng, H., Saeidi, P., and Tirkolaee, E. B. (2023). Technical challenges of blockchain technology for sustainable manufacturing paradigm in Industry 4.0 era using a fuzzy decision support system. *Technological Forecasting and Social Change*, 188, 122275,
65. Simić, V., Milovanović, B., Pantelić, S., Pamučar, D., and Tirkolaee, E. B. (2023). Sustainable Route Selection of Petroleum Transportation Using a Type-2 Neutrosophic Number Based ITARA-EDAS Model. *Information Sciences*, 622, 732-754,
66. Ranjbarzadeh, R., Caputo, A., Tirkolaee, E. B., Ghouschi, S. J., and Bendeche, M. (2023). Brain tumor segmentation of MRI images: A comprehensive review on the application of artificial intelligence tools. *Computers in Biology and Medicine*, 152, 106405,
67. Ranjbarzadeh, R., Dorosti, S., Ghouschi, S. J., Caputo, A., Tirkolaee, E. B., Ali, S. S., Arshadi, Z., and Bendeche, M. (2023). Breast tumor localization and segmentation using machine learning techniques: Overview of datasets, findings, and methods. *Computers in Biology and Medicine*, 152, 106443,
68. Tirkolaee, E. B., Goli, A., Gutmen, S., Weber, G. W., and Szwedzka, K. (2023). A novel model for sustainable waste collection arc routing problem: Pareto-based algorithms. *Annals of Operations Research*, 324(1), 189-214,

**Affiliation**

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

69. Jafarzadeh Ghoushchi, S., Ranjbarzadeh, R., Najafabadi, S. A., Osgooei, E., and Tirkolaee, E. B. (2023). An extended approach to the diagnosis of tumour location in breast cancer using deep learning. *Journal of Ambient Intelligence and Humanized Computing*, 14(7), 8487-8497,
70. Simić, V., Senapati, T., Saha, A., Dobrodolac, M., Rong, R., and Tirkolaee, E. B. (2023). Intuitionistic Fuzzy Power Aczel-Alsina Model for Prioritization of Sustainable Transportation Sharing Practices. *Engineering Applications of Artificial Intelligence*, 119, 105716,
71. Adabavazeh, N., Nikbakht, M., and Tirkolaee, E. B. (2022). Identifying and Prioritizing Resilient Health System Units to Tackle the COVID-19 Pandemic. *Socio-Economic Planning Sciences*, 101452,
72. Tirkolaee, E. B., and Torkayesh, A.E. (2022). A Cluster-based Stratified Hybrid Decision Support Model under Uncertainty: Sustainable Healthcare Landfill Location Selection. *Applied Intelligence*, 1-20,
73. Tirkolaee, E. B., Aydin, N.S., and Mahdavi, I. (2022). A hybrid bi-objective Markov chain based optimization model for sustainable aggregate production planning. *IEEE Transactions on Engineering Management*, 1-12,
74. Ala, A., Simic, V., Pamucar, D., and Tirkolaee, E. B. (2022). Appointment Scheduling Problem under Fairness Policy in Healthcare Services: Fuzzy Ant Lion Optimizer. *Expert Systems with Applications*, 207, 117949,
75. Tirkolaee, E. B., Golpîra, H., Javanmardan, A., and Maihami. R. (2022). A socio-economic optimization model for blood supply chain network design during the COVID-19 pandemic: An interactive possibilistic programming approach for a real case study. *Socio-Economic Planning Sciences*, 101439,
76. Amirteimoori, A., Mahdavi, I., Solimanpur, M., Ali, S. S, and Tirkolaee, E. B. (2022). A parallel hybrid PSO-GA algorithm for the flexible flow-shop scheduling with transportation. *Computers and Industrial Engineering*, 108672,
77. Babaei, A., Khedmati, M., Jokar, M.R.A., and Tirkolaee, E.B. (2022). Performance Evaluation of Omni-Channel Distribution Network Configurations considering Green and Transparent Criteria under Uncertainty. *Sustainability*, 14, 12607,
78. Aytakin, A., Okoth, B. O., Korucuk, S., Karamasa, C., and Tirkolaee, E. B. (2022). A neutrosophic approach to evaluate the factors affecting performance and theory of sustainable supply chain management: Application to textile industry. *Management Decision*, 1-24,
79. Aydin, N.S., and Tirkolaee, E. B. (2022). A Systematic Review of Aggregate Production Planning Literature with an Outlook for Sustainability and Circularity. *Environment, Development and Sustainability*, 1-42,
80. Darvazeh, S. S., Mooseloo, F. M., Vandchali, H. R., and Tirkolaee, E. B. (2022). An Integrated Methodology for Green Human Resource Management in Construction Industry. *Environmental Science and Pollution Research*, 1-19,
81. Darvazeh, S. S., Mooseloo, F. M., Vandchali, H. R., Tomaskova, H., and Tirkolaee, E. B. (2022). An integrated multi-criteria decision-making approach to optimize the number of leagile-sustainable suppliers in supply chains. *Environmental Science and Pollution Research*, 1-23,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babae@istinye.edu.tr
erfansjs@gmail.com

82. Ghadir, A. H., Vandchali, H. R., Fallah, M., and Tirkolae, E. B. (2022). Evaluating the impacts of COVID-19 outbreak on supply chain risks by modified failure mode and effects analysis: A case study in an automotive company. *Annals of Operations Research*, 1-31,
83. Lotfi, R., Kheiri, K., Sadeghi, A., and Tirkolae, E. B. (2022). An extended robust mathematical model to project the course of COVID-19 epidemic in Iran. *Annals of Operations Research*, 1-26,
84. Tirkolae, E. B., Goli, A., & Mardani, A. (2022). A novel two-echelon hierarchical location-allocation-routing optimization for green energy-efficient logistics systems. *Annals of Operations Research*, 1-29,
85. Tirkolae, E. B., and Aydin, N.S. (2022). Integrated design of sustainable supply chain and transportation network using a fuzzy bi-level Decision Support System for perishable products. *Expert Systems With Applications*, 195, 116628,
86. Kalantari, H., Badiie, A., Dezhboro, A., Mohammadi, H., and Tirkolae, E. B. (2022). A Fuzzy Profit Maximization Model using Communities Viable Leaders for Information Diffusion in Dynamic Drivers Collaboration Networks. *IEEE Transactions on Fuzzy System*, 31(2), 370-379,
87. Alinezhad, M., Mahdavi, I., Hematian, M., and Tirkolae, E. B. (2022). A fuzzy multi-objective optimization model for sustainable closed-loop supply chain network design in food industries. *Environment, Development and Sustainability*, 24(6), 8779-8806,
88. Tirkolae, E. B., Goli, A., Ghasemi, P., and Goodarzian, F. (2022). Designing a sustainable closed-loop supply chain network of face masks during the COVID-19 pandemic: Pareto-based algorithms. *Journal of Cleaner Production*, 333 (20), 130056,
89. Alinaghian, M., Jamshidian, M., and Tirkolae, E. B. (2022). The Time-Dependent Multi-Depot Fleet Size and Mix Green Vehicles Routing problem: Improved Adaptive Large Neighborhood Search. *Optimization*, 1-29,
90. Khanmohammadi, E., Safari, H., Zandieh, M., Malmir, B., and Tirkolae, E. B. (2022). Development of Dynamic Balanced Scorecard using Case-Based Reasoning Method and Adaptive Neuro-Fuzzy Inference System. *IEEE Transactions on Engineering Management*, 1-14,
91. Babaeinesami, A., Tohidi, H., Ghasemi, P., Goodarzian, F., and Tirkolae, E. B., (2022). A closed-loop supply chain configuration considering environmental impacts: a self-adaptive NSGA-II algorithm. *Applied Intelligence*, 1-19,
92. Khakbaz, A., and Tirkolae, E. B. (2022). A sustainable hybrid manufacturing/remanufacturing system with two-way substitution and WEEE directive under different market conditions. *Optimization*, 71(11), 3083-3106,
93. Tomaskova, H., and Tirkolae, E. B. (2021). Using a Process Approach to Pandemic Planning: A Case Study. *Applied Sciences*, 11(9), 4121,
94. Torkayesh, A. E., Deveci, M., Torkayesh, S. E., and Tirkolae, E. B. (2022). Analyzing failures in adoption of smart technologies for medical waste management systems: A type-2 neutrosophic-based approach. *Environmental Science and Pollution Research*, 29(53), 79688-79701,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

95. Lotfi, R., Yadegari, Z., Hosseini, S. H., Khameneh, A. H., Tirkolae, E. B., and Weber, G. W. (2022). A robust time-cost-quality-energy-environment trade-off with resource-constrained in project management: A case study for a bridge construction project. *Journal of Industrial and Management Optimization*, 18(1), 375–396,
96. Tirkolae, E. B., and Aydin, N. S. (2021). A sustainable medical waste collection and transportation model for pandemics. *Waste Management & Research*, 39, 34-44,
97. Goli, A., Tirkolae, E. B., and Aydın, N. S. (2021). Fuzzy Integrated Cell Formation and Production Scheduling considering Automated Guided Vehicles and Human Factors. *IEEE Transactions on Fuzzy Systems*, 29(12), 3686 - 3695,
98. Tirkolae, E. B., Abbasian, P., and Weber, G. W. (2021). Sustainable fuzzy multi-trip location-routing problem for medical waste management during the COVID-19 outbreak. *Science of the Total Environment*, 756(20), 143607,
99. Torkayesh, A. E., Vandchali, H.R., and Tirkolae, E.B. (2021). Multi-Objective Optimization for Healthcare Waste Management Network Design with Sustainability Perspective. *Sustainability*, 13(15), 8279,
100. Alinaghian, M., Tirkolae, E. B., Dezaki, Z. K., Hejazi, S. R., and Ding, W. (2021). An Augmented Tabu Search Algorithm for the Green Inventory-Routing Problem with Time Windows. *Swarm and Evolutionary Computation*, 60, 100802,
101. Aghighi, A., Goli, A., Malmir, B., and Tirkolae, E. B. (2021). The stochastic location-routing-inventory problem of perishable products with renegeing and balking. *Journal of Ambient Intelligence and Humanized Computing*, 1-20,
102. Krizkova, S., Tomaskova, H., Tirkolae, E. B.(2021). Sport Performance Analysis with a Focus on Racket Sports: A Review. *Applied Sciences*, 11(19), 9212,
103. Haseli, G., Sheikh, R., Wang, J-q., Tomaskova, H., and Tirkolae, E. B. (2021). A Novel Approach for Group Decision Making Based on the Best–Worst Method (G-BWM): Application to Supply Chain Management. *Mathematics*, 9(16), 1881,
104. Jahani, N., Sepehri, A., Vandchali, H.R., and Tirkolae, E.B. (2021). Application of Industry 4.0 in the Procurement Processes of Supply Chains: A Systematic Literature Review, *Sustainability*, 13(14), 7520,
105. Tirkolae, E. B., Sadeghi, S., Mansoori Mooseloo, F., Rezaei Vandchali, H., and Aeni, S. (2021). Application of Machine Learning in Supply Chain Management: A Comprehensive Overview of the Main Areas. *Mathematical Problems in Engineering*, 2021, 1-14,
106. Tirkolae, E. B., Dashtian, Z., Weber, G. W., Tomaskova, H., Soltani, M., and Mousavi, N. (2021). An integrated decision-making approach for green supplier selection in an agri-food supply chain: Threshold of robustness worthiness. *Mathematics*, 9(11), 1304,
107. Goli, A., Tirkolae, E. B., and Weber, G. W. (2021). An Integration of Neural Network and Shuffled Frog-Leaping Algorithm for CNC Machining Monitoring. *Foundations of Computing and Decision Sciences*, 46(1), 27-42,
108. Tirkolae, E. B., Aydın, N. S., Ranjbar-Bourani, M., and Weber, G. W. (2020). A robust bi-objective mathematical model for disaster rescue units allocation and scheduling with learning effect. *Computers and Industrial Engineering*, 149, 106790,

**Affiliation**

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

109. Kropat, E., Weber, G. W., and Tirkolae, E. B. (2020). Foundations of semialgebraic gene-environment networks. *Journal of Dynamics and Games*, 7(4), 253,
110. Tirkolae, E. B., Goli, A., and Weber, G. W. (2020). Fuzzy Mathematical Programming and Self-Adaptive Artificial Fish Swarm Algorithm for Just-in-Time Energy-Aware Flow Shop Scheduling Problem with Outsourcing Option. *IEEE Transactions on Fuzzy Systems*, 28(11), 2772-2783,
111. Tirkolae, E. B., Hadian, S., Weber, G. W., and Mahdavi, I. (2020). A robust green traffic-based routing problem for perishable products distribution. *Computational Intelligence*, 36(1), 80-101,
112. Tirkolae, E. B., Mahdavi, I., Esfahani, M. M. S., and Weber, G. W. (2020). A robust green location-allocation-inventory problem to design an urban waste management system under uncertainty. *Waste Management*, 102, 340-350,
113. Tirkolae, E. B., Goli, A., Faridnia, A., Soltani, M., and Weber, G. W. (2020). Multi-objective optimization for the reliable pollution-routing problem with cross-dock selection using Pareto-based algorithms. *Journal of Cleaner Production*, 276(10), 122927,
114. Sangaiah, A. K., Goli, A., Tirkolae, E. B., Ranjbar-Bourani, M., Pandey, H. M., and Zhang, W. (2020). Big Data-Driven Cognitive Computing System for Optimization of Social Media Analytics. *IEEE Access*, 8, 82215-82226,
115. Sangaiah, A. K., Tirkolae, E. B., Goli, A., and Dehnavi-Arani, S. (2020). Robust optimization and mixed-integer linear programming model for LNG supply chain planning problem. *Soft Computing*, 24(11), 7885-7905,
116. Tirkolae, E. B., Mahdavi, I., Seyyed Esfahani, M. M., and Weber, G. W. (2020). A hybrid augmented ant colony optimization for the multi-trip capacitated arc routing problem under fuzzy demands for urban solid waste management. *Waste Management and Research*, 38(2), 156-172,
117. Tirkolae, E. B., Mardani, A., Dashtian, Z., Soltani, M., and Weber, G. W. (2020). A novel hybrid method using fuzzy decision making and multi-objective programming for sustainable-reliable supplier selection in two-echelon supply chain design. *Journal of Cleaner Production*, 250(2), 119517,
118. Mardani, A., Kannan, D., Hooker, R. E., Ozkul, S., Alrasheedi, M., and Tirkolae, E. B. (2020). Evaluation of green and sustainable supply chain management using structural equation modelling: A systematic review of the state of the art literature and recommendations for future research. *Journal of Cleaner Production*, 249, 119383,
119. Golpîra, H., and Tirkolae, E. B. (2019). Stable Maintenance Task Scheduling: A Bi-Objective Robust Optimization Model. *Computers and Industrial Engineering*, 137, 106007,
120. Goli, A., Tirkolae, E. B., and Soltani, M. (2019). A robust just-in-time flow shop scheduling problem with outsourcing option on subcontractors. *Production and Manufacturing Research*, 7(1), 294-315,
121. Mostafaeipour, A., Qolipour, M., Rezaei, M., and Tirkolae, E. B. (2019). Investigation of off-grid photovoltaic systems for a reverse osmosis desalination system: A case study. *Desalination*, 454, 91-103,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

122. Tirkolae, E. B., Goli, A., Pahlevan, M., and Kordestanizadeh, R. M. (2019). A robust bi-objective multi-trip periodic capacitated arc routing problem for urban waste collection using a multi-objective invasive weed optimization. *Waste Management and Research*, 37(11), 1089-1101,
123. Tirkolae, E. B., Goli, A., Hematian, M., Sangaiah, A. K., and Han, T. (2019). Multi-objective multi-mode resource-constrained project scheduling problem using Pareto-based algorithms. *Computing*, 101(6), 547-570,
124. Goli, A., Tirkolae, E. B., Malmir, B., Bian, G. B., and Sangaiah, A. K. (2019). A multi-objective invasive weed optimization algorithm for robust aggregate production planning under uncertain seasonal demand. *Computing*, 101(6), 499-529,
125. Tirkolae, E. B., Alinaghian, M., Hosseinabadi, A. A. R., Sasi, M. B., and Sangaiah, A. K. (2019). An improved ant colony optimization for the multi-trip Capacitated Arc Routing Problem. *Computers and Electrical Engineering*, 77, 457-470,
126. Tirkolae, E. B., Abbasian, P., Soltani, M., and Ghaffarian, S. A. (2019). Developing an applied algorithm for multi-trip vehicle routing problem with time windows in urban waste collection: A case study. *Waste Management and Research*, 37(1-suppl), 4-13,
127. Tirkolae, E. B., Mahmoodkhani, J., Bourani, M. R., and Tavakkoli-Moghaddam, R. (2019). A Self-Learning Particle Swarm Optimization for Robust Multi-Echelon Capacitated Location–Allocation–Inventory Problem. *Journal of Advanced Manufacturing Systems*, 18(04), 677-694,
128. Tirkolae, E. B., Mahdavi, I., and Esfahani, M. M. S. (2018). A robust periodic capacitated arc routing problem for urban waste collection considering drivers and crew's working time. *Waste Management*, 76, 138-146,
129. Tirkolae, E. B., Hosseinabadi, A. A. R., Soltani, M., Sangaiah, A. K., and Wang, J. (2018). A hybrid genetic algorithm for multi-trip green capacitated arc routing problem in the scope of urban services. *Sustainability*, 10(5), 1366,
130. Tirkolae, E. B., Goli, A., Bakhshi, M., and Mahdavi, I. (2017). A robust multi-trip vehicle routing problem of perishable products with intermediate depots and time windows. *NACO*, 7(4), 417-433.

Papers - Scopus, ISC, TR-Dizin

1. Aydin, N. S., and Tirkolae, E. B. (2022). Modelling and predicting the growth dynamics of Covid-19 pandemic: A comparative study including Turkey. *Journal of Turkish Operations Management*, 6(1), 943-954,
2. Tirkolae, E. B., Hadian, S., and Golpira, H. (2019). A novel multi-objective model for two-echelon green routing problem of perishable products with intermediate depots. *Journal of Industrial Engineering and Management Studies*, 6(2), 101-110,
3. Goli, A., and Bakhshi, M., and Tirkolae, E. B. (2017). A Review on Main Challenges of Disaster Relief Supply Chain to Reduce Casualties in Case of Natural Disasters. *Journal of Applied Research on Industrial Engineering*, 4(2), 77-88,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

4. Mirmohammadi, S. H., Tirkolae, E. B., Goli, A., and Dehnavi-Arani, S. (2017). The periodic green vehicle routing problem with considering of time-dependent urban traffic and time windows. *International Journal of Optimization in Civil Engineering*, 7(1), 143-156,
5. Tirkolae, E. B., Alinaghian, M., Bakhsi sisi, M., and Seyyed Esfahani, M., (2016). Solving a robust capacitated arc routing problem using a hybrid simulated annealing algorithm: A waste collection application. *Journal of Industrial Engineering and Management Studies*, 3(1), 61-76,
6. Khosravi, P., Alinaghian, M., Sajadi, S., and Tirkolae, E. B. (2015). The Periodic Capacitated Arc Routing Problem with Mobile Disposal Sites Specified for Waste Collection. *Journal of Applied Research on Industrial Engineering*, 2(1), 64-76,
7. Alinaghian, M., Amanipour, H., and Tirkolae, E. B. (2014). Enhancement of Inventory Management Approaches in Vehicle Routing-Cross Docking Problems. *Journal of Supply Chain Management Systems*, 3(3).

Book Chapters

1. Tirkolae E.B., Aydın, N. S., Mahdavi, I., and Büşra, Ç. (2023). A Multi-objective Optimization Model for Sustainable-Robust Aggregate Production Planning Problem. In *International Conference on Science, Engineering Management and Information Technology* (pp. 18-34). Cham: Springer Nature Switzerland,
2. Gutmen, S., Weber G. W., Goli, A., and Tirkolae E.B. (2022). Human paradigm and reliability for aggregate production planning under uncertainty. *Advances of Artificial Intelligence in a Green Energy Environment* (pp. 193-201). Elsevier, Academic Press,
3. Golpîra H., and Tirkolae E.B. (2021). Optimization for Construction Supply Chain Management. *Application of Mathematics and Optimization in Construction Project Management*.(pp. 165–183). Springer, Cham,
4. Golpîra H., Bahramara S., and Tirkolae E.B. (2021). Sustainable Production-Consumption of the Microgrids: An Optimal Approach for Industrial Area. In *Sustainable Production and Consumption Systems* (pp. 27–39). Springer, Singapore,
5. Tirkolae E.B., Goli A., and Weber G. W. (2021). A Robust Two-Echelon Periodic Multi-commodity RFID-Based Location Routing Problem to Design Petroleum Logistics Networks: A Case Study. In *Logistics and Supply Chain Management* (pp. 3–23), LSCM 2020. Communications in Computer and Information Science, vol 1458. Springer, Cham,
6. Tirkolae, E. B., Goli, A., Weber, G. W., and Szwedzka, K. (2020). A Novel Formulation for the Sustainable Periodic Waste Collection Arc-Routing Problem: A Hybrid Multi-objective Optimization Algorithm. In *Logistics Operations and Management for Recycling and Reuse* (pp. 77-98). Springer, Berlin, Heidelberg,
7. Goli, A., Tirkolae, E. B., and Weber, G. W. (2020). A Perishable Product Sustainable Supply Chain Network Design Problem with Lead Time and Customer Satisfaction using a Hybrid Whale-Genetic Algorithm. In *Logistics Operations and Management for Recycling and Reuse* (pp. 99-124). Springer, Berlin, Heidelberg,



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

8. Goli, A., Tirkolae, E. B., and Sangaiah, A. K. (2020). Hybrid Neural Network and Improved Cuckoo Optimization Algorithm for Forecasting Thermal Comfort Index at Urban Open Spaces. *Advances in Edge Computing: Massive Parallel Processing and Applications* (pp. 264 - 280), IOS Press,
9. Tirkolae, E. B., Goli, A., and Weber, G. W. (2019). Multi-objective Aggregate Production Planning Model Considering Overtime and Outsourcing Options Under Fuzzy Seasonal Demand. *In Advances in Manufacturing II* (pp. 81-96). Springer, Cham.

Papers - International Conferences/Webinars

1. Tirkolae, E. B., Aydin, N. S., Mahdavi, I., and Çelik, B. (2022). A novel multi-objective model for sustainable-robust aggregate production planning problem. *International Conference on Science, Engineering Management and IT (SEMIT 2022)*, Atılım University, Turkey,
2. Gütmen, S., Weber, G.W., Tirkolae, E.B., and Goli, A. (2021). Sustainable-robust aggregate production planning considering workforce satisfaction. *Dynamic Control and Optimization (DCO)*, University of Aveiro, Portugal,
3. Weber, G. W., Gütmen, S., Tirkolae, E. B., and Goli, A. (2021). Sustainable Aggregate Production Planning with Overtime, Outsourcing and Human Factors under Uncertain Seasonal Demand. *31th European Conference on Operational Research-EURO ATHENS 2021*, Athens, Greece,
4. Tirkolae, E.B., Goli, A., Weber, G.W. (2020). A Robust Two-Echelon Periodic Multi-Commodity RFID-based Location Routing Problem to Design Petroleum Logistics Networks: A Case Study. *International Conference on Logistics and Supply Chain Management, LSCM 2020*, Tehran, Iran,
5. Goli, A., Tirkolae, E.B., and Weber, G.W. (2020). A perishable product supply chain network-design problem with lead time and customer satisfaction using a hybrid whale-genetic algorithm. *15th International Congress on Logistics and SCM Systems, ICLS 2020*, Poznan, Poland,
6. Tirkolae, E.B., Goli, A., Weber, and G.W, and Szwedzka, K. (2020). A novel formulation for the sustainable periodic waste collection arc-routing problem: A hybrid multi-objective optimization algorithm. *15th International Congress on Logistics and SCM Systems, ICLS 2020*, Poznan, Poland,
7. Goli, A., Tirkolae, E.B., and Weber G.W. (2020). Hazardous Material Logistic Network Design Based on Vehicle Routing Problem using Improved Whale Optimization Algorithm. *EWG-ORD 2020 Workshop on Data Technologies and Analytics for Sustainable Development*, Rhode Island, USA,
8. Tirkolae, E.B., Goli, A., and Weber, G.W. (2019). Multi-objective Aggregate Production Planning Model Considering Overtime and Outsourcing Options Under Fuzzy Seasonal Demand. *Manufacturing 2019*, Poznan, Poland,
9. Goli, A., Tirkolae, E.B., Mahdavi, I., and Zamani, M. (2019). Solving a University Exam Scheduling Problem Using Genetic and Firefly Algorithms. *The Third European International Conference on Industrial Engineering and Operations Management*, Pilsen, Czech Republic,

**Affiliation**

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

E-mails

erfan.babaei@istinye.edu.tr
erfansjs@gmail.com

10. Zolghadriha, T., Hajizadeh, M., Ranjbar-Bourani, M., and Tirkolae, E. B. (2019). Enhancing the Performance of Engineering Projects Considering Future Uncertainty: The Case Study of Centralized. 12th *International Conference of Iranian Operations Research Society*, Babolsar, Iran,
11. Hadian, S. and Tirkolae, E. B. (2018). Multi-objective Optimization for Two-echelon Green Routing Problem with Intermediate Depots in Perishable Product Distribution. 14th *International Conference on Industrial Engineering*, Tehran, Iran,
12. Dadashi, A., Sheikholeslami, A., Tirkolae, E. B., and Bakhshi, M. (2016). A robust approach for berth scheduling problem in shahid rajaee container port. 12th *International Conference on Coasts, Ports and Marine Structure*, Tehran, Iran,
13. Tirkolae, E. B., Goli. A., Bakhshi. M., and Mahdavi, I. (2016). A BBO algorithm for multi-trip heterogeneous vehicle routing problem of perishable products with intermediate depots and time windows. 12th *International Conference on Industrial Engineering*, Tehran, Iran,
14. Tirkolae, E. B., Bakhshi, M., Rezaee, S., and Ghasemi, H. (2015). A two-echelon multi-commodity location-routing problem with hard time windows: A case study in Iran petroleum industry. 11th *International Industrial Engineering Conference*, Tehran, Iran.

Scientific Accounts

GoogleScholar

- <https://scholar.google.com/citations?user=-4D9MfAAAAAJ&hl>

ResearchGate

- https://www.researchgate.net/profile/Erfan_Babaei_Tirkolae

WoS

- <https://www.webofscience.com/wos/author/record/U-3676-2017>

Linkedin

- <https://ir.linkedin.com/in/erfan-babaei-tirkolae-15b221a6>

Scopus

- <https://www.scopus.com/authid/detail.uri?authorId=57196032874>

Official Profile URL

- <https://muhendislik.istinye.edu.tr/en/kadro/8553>