



Affiliation

Department of Industrial Engineering, Istinye University, Istanbul, Turkey

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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
- Capstone Project

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



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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

Administrative Tasks

March 2022 - present; Istinye University, Turkey

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

Honorary Researchers

June 2023 - present; Yuan Ze University, Taiwan

- Department of Industrial Engineering and Management

Research Interests

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

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)

Languages

Persian

- Native language

English

- Advanced, *IELTS Certification*

Turkish

- Intermediate

Computer Skills

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



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Personal Interests

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

Editorial Boards - ISI

1. Associate Editor of *IEEE Transactions on Fuzzy Systems* (ISSN: 1063-6706), IEEE (Q1, IF: 11.9),
2. Associate Editor of *Facta Universitatis, Series: Mechanical Engineering* (ISSN: 2335-0164), University of Niš (Q1, IF: 7.9),
3. Academic Editor of *PLOS ONE* (ISSN: 1932-6203), PLOS (Q2, IF: 3.7),
4. Editorial Board Member of *Intelligent Automation and Soft Computing: An International Journal* (ISSN: 1079-8587), Tech Science Press (Q3, IF: 2),
5. Associate Editor of *Journal of Dynamics and Games* (ISSN: 2164-6066), AIMS (ESCI, IF: 0.9),
6. Editorial Advisory Board member of *Management Decision* (MD) (ISSN: 0025-1747), emerald (Q3, IF: 4.6).

Editorial Boards - Scopus, ISC, etc.

1. Editorial Board member of *International Journal of Supply and Operations Management (IJSOM)* (ISSN: 2383-2525). Scopus-indexed journal- Kharazmi University,
2. Editorial Board member of *International Journal of Industrial Engineering and Production Research (IJIEPR)* (ISSN: 2008-4889). Scopus-indexed journal- Iran University of Science and Technology,
3. Associate Editor of *Supply Chain Analytics (SCA)*, (ISSN: 2949-8635). Elsevier,
4. Editorial Board member of *Journal of Industrial Engineering and Management Studies (JIEMS)*, (ISSN: 2476-3098). ISC indexed journal- Iran Center for Management Studies,
5. Editorial Board member of *Journal of Applied Research on Industrial Engineering (JARIE)*, (ISSN: 2676-6167). ISC indexed journal,
6. Editorial Board member of *International Journal of Research in Industrial Engineering (RIEJ)*, (ISSN: 2717-2937). ISC indexed journal,
7. Editorial Board member of *Innovation Management and Operational Strategies (IMOS)*, (ISSN: 2717-4581). ISC indexed journal,
8. Editorial Board member of *Journal of Decisions and Operations Research (DMOR)*, (ISSN: 2008-4854). ISC indexed Journal,
9. Editorial Board member of *Journal of Fuzzy Extension & Applications (JFEA)*, (ISSN: 2717-3453). ISC indexed Journal,
10. Managing Editor and Editorial board member of *International Journal of Applied Optimization Studies (IJAOS)*, (ISSN: 2645-4327).

Previous Editorial Experiences

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



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Guest Editorial Activities - ISI

1. Tirkolae, E.B., Shokouhyar, S., Tanveer, M., and Siarry, P. (2023). Advances of Optimization and Artificial Intelligence in Municipal Waste Management Systems. *Engineering Applications of Artificial Intelligence*, Elsevier (open),
2. Garza-Reyes, J. A., Özceylan, E., Goli, A., Tirkolae, E. B., and Liao, H. (2023). Smart Fuzzy Optimization in Sustainable Manufacturing and Supply Chain Management. *IEEE Transactions on Fuzzy Systems*, IEEE (closed),
3. 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),
4. Tirkolae, E. B. (2022-2023). Advances of Artificial Intelligence for Sustainable Engineering and Medical Applications: Machine Learning and Optimization. *Bioengineering*, MDPI (open),
5. 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),
6. Erdibili, B., and Tirkolae, E. B. (2022-2023). Sustainable Development of Industrial Engineering With the Application of Intelligent Systems. *Sustainability*, MDPI (closed),
7. Weber, G. W., Goli, A., and Tirkolae, E. B. (2022-2023). Logistics and Operations Modelling and Optimisation for Sustainable Supply Chain. *Sustainability*, MDPI (closed),
8. 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),
9. 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),
10. 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),
11. Tirkolae, E. B., Goli, A., Golpîra, H., and Gonzalez, E. S. (2021). Sustainable Global Supply Chain Management: From an International Perspective. *Sustainability*, MDPI (closed),
12. Goli, A., Tirkolae, E. B., and Gonzalez, E. S. (2021). Machine Learning in Sustainable Industrial Development. *Mathematical Problems in Engineering*, Hindawi (closed),
13. 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),
14. Tirkolae, E. B., Goli, A. and Malmir, B. (2021). Recent advances of solutions algorithms for logistics routing problems. *Logistics*, MDPI (closed),



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Conference Chairs

- Chair of the "*International Conference on Optimization and Data Science in Industrial Engineering (ODSIE 2023)*", November 16-17, 2023, Istinye University, Istanbul, Turkey.

Chair/Member of Scientific Panels

- 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,

Scientific/Editorial/Organizing Committee

- "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",
- "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",



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- "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".

Reviewer/Assessor Boards of Research Councils

- o *Australian Research Council (ARC)*, Funded by the National Competitive Grants Program (NCGP) of Australia.

Reviewer Boards

- o Reviewer in more than **200** prestigious journals such as *IEEE Transactions on Fuzzy Systems* (IEEE), *Computers & Operations Research* (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 Review in several international conferences (e.g., IEEE),
- o Book proposal review in emerald (2022),
- o Grant proposal review for the National Science Center, Poland (2022).

Thesis Supervision/Co-Supervision

- o 2 Ph.D. theses under co-supervision (Mazandaran University; Poznan University of Technology)
- o Supervised 8 master theses (2016-2023) (Mazandaran University of Science and Technology; University of Science and Technology of Mazandaran)

PhD Internship Supervision

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

International Thesis Examiner

- o 2 M.Sc. theses. (2022-2023). UiT The Arctic University of Norway; Qatar University
- o 2 Ph.D. theses. (2022-2023). Anna University, India; Univerzita Hradec Králové, Czech Republic.

Speaking Experiences

- o "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 (Dec 08-10), Durgapur, India,
- o "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 (Nov 16), Guilan, Iran,



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- “*Speaker at a Logistics Systems Seminar Series 2022*”, “Sustainable Aggregate Production-Transportation Planning”, Yaşar University (Nov 7-11), 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,
- “*Speaker at 1st International Conference of Business Development and Digital Transformation (ICBDDT 2022)*”, “Sustainable Aggregate Production-Transportation Planning: Towards Digital Transformation”, University of Isfahan (Nov 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, Iran,
- “*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, 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”, Atilim University, Turkey,
- “*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),
- “*Speaker at 2nd International Conference on Challenges and New Solutions in Industrial Engineering and Management and Accounting*”, “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, 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**: Tirkolaee, 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*,



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- *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 Editorship

- 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, Ankara, Turkey, February 2–3, 2022, Revised Selected Papers, Part I. *Communications in Computer and Information Science* (CCIS, volume 1808), Springer Cham. ISBN: 978-3-031-40395-8,
- 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, Ankara, Turkey, September 8-9, 2022, Revised Selected Papers, 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 - ISI

- 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,



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- Goli, A., Tirkolaee, 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,
- Tirkolaee, 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 - ISI

1. Görçün, Ö. F., Tirkolaee, 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,
2. Nikseresht, A., Shokouhyar, S., Tirkolaee, 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,
3. Ala, A., Simic, V., Bacanin, N., and Tirkolaee, E. B. (2024). Blood supply chain network design with lateral freight: A robust possibilistic optimization model. *Engineering Applications of Artificial Intelligence*, 133, 108053,
4. Wang, G., Chen, H., Han, H., Bi, J., Qiao, J., and Tirkolaee, E. B. (2024). Predicting Water Quality With Non-stationarity: Event-Triggered Deep Fuzzy Neural Network. *IEEE Transactions on Fuzzy Systems*, 1-10,
5. Görçün, Ö. F., Tirkolaee, 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*, 120161,
6. Khakbaz, A., Alfares, H. K., Amirteimoori, A., and Tirkolaee, 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,
7. Babaei, A., Khedmati, M., Jokar, M. R. A., and Tirkolaee, E. B. (2023). A decision support framework to evaluate the sustainability performance of urban road transportation. *Environmental Science and Pollution Research*, 1-22,
8. Venkatachalam, K., Al-Onazi, B. B., Simic, V., Tirkolaee, 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,
9. Dhayef, D. H., Al-Zubaidi, S. S., Al-Kindi, L. A., and Tirkolaee, 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,
10. Arasteh, B., Arasteh, K., Kiani, F., Sefati, S. S., Fratu, O., Halunga, S., and Tirkolaee, E. B. (2024). A Bioinspired Test Generation Method Using Discretized and Modified Bat Optimization Algorithm. *Mathematics*, 12(2), 186,
11. Shidpour, H., Shidpour, M., and Tirkolaee, E. B. (2023). A Multi-Phase Decision-Making Approach for Supplier Selection and Order Allocation with Corporate Social Responsibility. *Applied Soft Computing*, 110946,



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12. Jolfai, A. A., Alinaghian, M., Bahrami, R., and Tirkolaee, E. B. (2023). Generalized vehicle routing problem: Contemporary trends and research directions. *Heliyon*, 9(12), e22733,
13. Ranjbarzadeh, R., Zarbakhsh, P., Caputo, A., Tirkolaee, 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,
14. 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,
15. 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,
16. 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,
17. 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,
18. 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,
19. 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,
20. 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,
21. 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,
22. 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,
23. 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,
24. 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,
25. Karadayi-Usta, S. and Tirkolaee, E. B. (2023). Evaluating the Sustainability of Fashion Brands Using a Neutrosophical ORESTE Approach. *Sustainability*, 15(19), 14406,



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26. Ghasemi, P., Goodarzian, F., Simic, V., and Tirkolae, 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,
27. Ranjbarzadeh, R., Sadeghi, S., Fadaeian, A., Jafarzadeh Ghouschi, S., Tirkolae, 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,
28. Goli, A., Tirkolae, 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,
29. Nayeri, S., Khoei, M. A., Rouhani-Tazangi, M. R., GhanavatiNejad, M., Rahmani, M., and Tirkolae, 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,
30. Simic, V., Dabic-Miletic, S., Tirkolae, 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,
31. Simic, V., Dabic-Miletic, S., Tirkolae, E. B., Stević, Z., Deveci, M., and Tapan, S. (2023). Neutrosophic CEBOM-MACONT model for sustainable management of end-of-life tires. *Applied Soft Computing*, 143, 110399,
32. Tirkolae, 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,
33. Goli, A., and Tirkolae, 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,
34. Tomaskova, H., Tirkolae, E. B., and Raut, R. D. (2023). Business process optimization for trauma planning. *Journal of Business Research*, 164, 113959,
35. Görçün, Ö. F., Aytakin, A., Korucuk, S., and Tirkolae, E. B. (2023). Evaluating and selecting sustainable logistics service providers for medical waste disposal treatment in the healthcare industry. *Journal of Cleaner Production*, 137194,
36. Amirteimoori, A., Tirkolae, 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,
37. Golpîra, H., Tirkolae, 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,
38. Korucuk, S., Tirkolae, 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,



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39. Aytekin, A., Okoth, B. O., Korucuk, S., Mishra, A. R., Memiş, S., Karamaşa, Ç., and Tirkolae, 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,
40. Ecer, F., Ögel, İ. Y., Krishankumar, R., and Tirkolae, 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,
41. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolae, 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,
42. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolae, E. B. (2023). Designing an integrated blockchain-enabled supply chain network under uncertainty. *Scientific Reports*, 13(1), 3928,
43. Babaei, A., Khedmati, M., Akbari Jokar, M. R., and Tirkolae, E. B. (2023). Sustainable transportation planning considering traffic congestion and uncertain conditions. *Expert Systems with Applications*, 119792,
44. Torkayesh, A. E., Tirkolae, 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,
45. Goodarzian, F., Ghasemi, P., Gonzalez, E. S., and Tirkolae, E. B. (2023). A Sustainable-Circular Citrus Closed-Loop Supply Chain Configuration: Pareto-based Algorithms. *Journal of Environmental Management*, 328, 116892,
46. Ranjbarzadeh, R., Ghousci, S. J., Sarshar, N. T., Tirkolae, 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,
47. Zolfani, S. H., Görçün, Ö. F., Çanakçıoğlu, M., and Tirkolae, 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,
48. Su, D., Zhang, L., Peng, H., Saeidi, P., and Tirkolae, 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,
49. Simić, V., Milovanović, B., Pantelić, S., Pamučar, D., and Tirkolae, E. B. (2023). Sustainable Route Selection of Petroleum Transportation Using a Type-2 Neutrosophic Number Based ITARA-EDAS Model. *Information Sciences*, 622, 732-754,
50. Ranjbarzadeh, R., Caputo, A., Tirkolae, E. B., Ghousci, 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,



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51. Ranjbarzadeh, R., Dorosti, S., Ghoushci, S. J., Caputo, A., Tirkolae, 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,
52. Simić, V., Senapati, T., Saha, A., Dobrodolac, M., Rong, R., and Tirkolae, E. B. (2023). Intuitionistic Fuzzy Power Aczel-Alsina Model for Prioritization of Sustainable Transportation Sharing Practices. *Engineering Applications of Artificial Intelligence*, 119, 105716,
53. Khakbaz, A., and Tirkolae, E. B. (2022). A Mathematical Model to Investigate the Interactive Effects of Important Economic Factors on the Behaviors of Retailers. *Annals of Operations Research*, 1-25,
54. Adabavazeh, N., Nikbakht, M., and Tirkolae, E. B. (2022). Identifying and Prioritizing Resilient Health System Units to Tackle the COVID-19 Pandemic. *Socio-Economic Planning Sciences*, 101452,
55. Tirkolae, 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,
56. Ranjbarzadeh, R., Ghoushci, S. J., Anari, S., Safavi, S., Sarshar, N. T., Tirkolae, E. B., and Bendeche, M. (2022). A Deep Learning Approach for Robust, Multi-oriented, and Curved Text Detection. *Cognitive Computation*, 1-13,
57. Ala, A., Simic, V., Pamucar, D., and Tirkolae, E. B. (2022). Appointment Scheduling Problem under Fairness Policy in Healthcare Services: Fuzzy Ant Lion Optimizer. *Expert Systems with Applications*, 207, 117949,
58. Tirkolae, 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,
59. Amirteimoori, A., Mahdavi, I., Solimanpur, M., Ali, S. S., and Tirkolae, E. B. (2022). A parallel hybrid PSO-GA algorithm for the flexible flow-shop scheduling with transportation. *Computers and Industrial Engineering*, 108672,
60. Tirkolae, 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,
61. Babaei, A., Khedmati, M., Jokar, M.R.A., and Tirkolae, E.B. (2022). Performance Evaluation of Omni-Channel Distribution Network Configurations considering Green and Transparent Criteria under Uncertainty. *Sustainability*, 14, 12607,
62. Aytekin, A., Okoth, B. O., Korucuk, S., Karamasa, C., and Tirkolae, 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,
63. Aydin, N.S., and Tirkolae, E. B. (2022). A Systematic Review of Aggregate Production Planning Literature with an Outlook for Sustainability and Circularity. *Environment, Development and Sustainability*, 1-42,



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64. 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,
65. 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,
66. Ghadir, A. H., Vandchali, H. R., Fallah, M., and Tirkolaee, 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,
67. Lotfi, R., Kheiri, K., Sadeghi, A., and Tirkolaee, E. B. (2022). An extended robust mathematical model to project the course of COVID-19 epidemic in Iran. *Annals of Operations Research*, 1-26,
68. Kalantari, H., Badiie, A., Dezhboro, A., Mohammadi, H., and Tirkolaee, 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*, 1-10,
69. Tirkolaee, 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,
70. Alinezhad, M., Mahdavi, I., Hematian, M., and Tirkolaee, 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,
71. Tirkolaee, 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,
72. Tirkolaee, E. B., Goli, A., Gutmen, S., Weber, G. W., and Szwedzka, K. (2022). A novel model for sustainable waste collection arc routing problem: Pareto-based algorithms. *Annals of Operations Research*, 1-26,
73. Alinaghian, M., Jamshidian, M., and Tirkolaee, E. B. (2022). The Time-Dependent Multi-Depot Fleet Size and Mix Green Vehicles Routing problem: Improved Adaptive Large Neighborhood Search. *Optimization*, 1-29,
74. Tirkolaee, E. B., Goli, A., and Mardani, A. (2022). A novel two-echelon hierarchical location-allocation-routing optimization for green energy-efficient logistics systems. *Annals of Operations Research*, 1-29,
75. Khanmohammadi, E., Safari, H., Zandieh, M., Malmir, B., and Tirkolaee, 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,
76. Babaeinesami, A., Tohidi, H., Ghasemi, P., Goodarzian, F., and Tirkolaee, E. B., (2022). A closed-loop supply chain configuration considering environmental impacts: a self-adaptive NSGA-II algorithm. *Applied Intelligence*, 1-19,



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77. Khakbaz, A., and Tirkolaee, 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,
78. Tomaskova, H., and Tirkolaee, E. B. (2021). Using a Process Approach to Pandemic Planning: A Case Study. *Applied Sciences*, 11(9), 4121,
79. Torkayesh, A. E., Deveci, M., Torkayesh, S. E., and Tirkolaee, 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,
80. Lotfi, R., Yadegari, Z., Hosseini, S. H., Khameneh, A. H., Tirkolaee, 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,
81. Tirkolaee, E. B., and Aydin, N. S. (2021). A sustainable medical waste collection and transportation model for pandemics. *Waste Management & Research*, 39, 34-44,
82. Goli, A., Tirkolaee, 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,
83. Tirkolaee, 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,
84. Ghouschi, S. J., Ranjbarzadeh, R., Najafabadi, S. A., Osgooei, E., and Tirkolaee, E. B. (2021). An extended approach to the diagnosis of tumour location in breast cancer using deep learning. *Journal of Ambient Intelligence and Humanized Computing*, 1-11,
85. Torkayesh, A. E., Vandchali, H.R., and Tirkolaee, E.B. (2021). Multi-Objective Optimization for Healthcare Waste Management Network Design with Sustainability Perspective. *Sustainability*, 13(15), 8279,
86. Alinaghian, M., Tirkolaee, 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,
87. Aghighi, A., Goli, A., Malmir, B., and Tirkolaee, 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,
88. Krizkova, S., Tomaskova, H., Tirkolaee, E. B.(2021). Sport Performance Analysis with a Focus on Racket Sports: A Review. *Applied Sciences*, 11(19), 9212,
89. Haseli, G., Sheikh, R., Wang, J-q., Tomaskova, H., and Tirkolaee, 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,
90. Jahani, N., Sepehri, A., Vandchali, H.R., and Tirkolaee, E.B. (2021). Application of Industry 4.0 in the Procurement Processes of Supply Chains: A Systematic Literature Review, *Sustainability*, 13(14), 7520,



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91. 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,
92. 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,
93. 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,
94. 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,
95. Kropat, E., Weber, G. W., and Tirkolae, E. B. (2020). Foundations of semialgebraic gene-environment networks. *Journal of Dynamics and Games*, 7(4), 253,
96. 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,
97. 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,
98. 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,
99. 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,
100. 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,
101. 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,
102. 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,
103. 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,



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104. 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,
105. 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,
106. Golpîra, H., and Tirkolae, E. B. (2019). Stable Maintenance Task Scheduling: A Bi-Objective Robust Optimization Model. *Computers and Industrial Engineering*, 137, 106007,
107. 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,
108. 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,
109. 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,
110. 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,
111. 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,
112. 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,
113. 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,
114. 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,
115. 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,



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116. 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,
117. Tirkolae, E. B., Goli, A., Bakhsi, 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, etc.

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 Bakhsi, 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,
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, 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., Aydin, 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,



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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,
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,

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6. Tirkolaee, 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. *15th International Congress on Logistics and SCM Systems, ICLS 2020*, Poznan, Poland,
7. Goli, A., Tirkolaee, 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. Tirkolaee, E.B., Goli, A., 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., Tirkolaee, E.B., Mahdavi, I., 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,
10. Zolghadriha, T., Hajizadeh, M., Ranjbar-Bourani, M. and Tirkolaee, E. (2019). Enhancing the Performance of Engineering Projects Considering Future Uncertainty: The Case Study of Centralized. *12th International Conference of Iranian Operations Research Society*, Babol-sar, Iran,
11. Hadian, Sh., Tirkolaee, 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., Tirkolaee, E. B., Bakhshi, M. (2016). A robust approach for berth scheduling problem in shahid rajaei container port. *12th International Conference on Coasts, Ports and Marine Structure*, Tehran, Iran,
13. Tirkolaee, E. B., Goli. A., Bakhshi. M., 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. Tirkolaee, E. B., Bakhshi, M., Rezaee, S., 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.

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