

MUHAMMAD SHAFIQ (PhD)

Phone & WhatsApp: +92 346 7638751

Email: shafiqaatir1@gmail.com

mshafiq.iem@pu.edu.pk

Associate Professor/ Director: Institute of Industrial Engineering and Management
University of the Punjab, Lahore, Pakistan

Links

Google Scholar: <https://scholar.google.com/citations?user=RLIdNO8AAAAJ&hl=en>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57194223519>

ORCID: <https://orcid.org/0000-0002-5475-3118>

Teaching and Research Interests

Supply Chain Management (SCM), Operations Research (OR), Data Analytics (DA), Production and Operations Management (POM), Inventory and Logistics Management (ILM), Optimization Techniques, Engineering management (EM)

Courses Taught: (1) Operations Research, (2) Supply Chain Management, (3) Operations Management, (4) Engineering Optimization Techniques, (5) Transportation and Logistics Management, (6) Production Planning & Inventory Management, (7) Industrial Engineering Principles, (8) Engineering Economics, (9) Engineering Management, (10) Lean Six Sigma

Peer Reviewed Journal Publications

- i. Hussain, F., Uzair, M., **Shafiq*, M.**, Islam, M. A. (2024). Implementation of ergonomics and lean manufacturing principles to improve work environment and performance of soccer ball production line. Journal of Applied Research in Technology and Engineering, 5(1), 13-22.
- ii. Shaukat, F., **Shafiq*, M.**, Hussain, A. (2023). Investigating the factors affecting the acceptance of Blockchain in telemedicine through an integrated model approach. Journal of Science and Technology Policy Management. **(IF 2.3)**
- iii. Rafique, T., Awan, M. U., **Shafiq, M.**, & Mahmood, K. (2024). Development of university ranking scale for higher education institutions. Quality & Quantity, 1-21.
- iv. Marialuisa, M., Matteo M, S., & **Shafiq, M.** (2023). Optimizing milk-run system and IT-based Kanban with artificial intelligence: an empirical study on multi-lines assembly shop floor. Production & Manufacturing Research, 11(1), 2179123. **(IF 4.1)**
- v. Iqbal MM, **Shafiq* M** (2023). Indoor air quality monitoring in metropolitan city Lahore, using handheld devices. Journal of Air Pollution and Health, 8(4): 435-452.

- vi. Rafique, T., Awan, M. U., **Shafiq, M.**, & Mahmood, K. (2023). Exploring the role of university ranking systems towards university performance improvement: A focus group-based study. *Heliyon*, 9(10). **(IF 4)**
- vii. Farooque, U., Awan, M. U., & **Shafiq, M.** (2023). Development of a housing quality (HQ) scale in the context of Pakistan. *International Journal of Housing Markets and Analysis*. **(IF 1.7)**
- viii. Hannan, A., Hussain, A., **Shafiq, M.**, (2023). Exploring mobile banking service quality dimensions in Pakistan: a text mining approach. *International Journal of Bank Marketing*, 41(3), 601-618. **(IF 5.3)**
- ix. Mobeen, A., **Shafiq*, M.**, Aziz, M. H., & Mohsin, M. J. (2022). Impact of workflow interruptions on baseline activities of the doctors working in the emergency department. *BMJ Open Quality*, 11(3), e001813. **(IF 1.4)**
- x. Nabi, F. G., Sundaraj, K., Iqbal, M. S., **Shafiq, M.**, & Palaniappan, R. (2022). A telemedicine software application for asthma severity levels identification using wheeze sounds classification. *Biocybernetics and Biomedical Engineering*, 42(4), 1236-1247. **(IF 6.4)**
- xi. Siddiqui, Q. R. & **Shafiq*, M.** (2022). Optimization of Lead Time through Genetic Algorithm: A Case Study of Equipment Manufacturing Industry. *Journal of Engineering Research*, 10(2), 10179 **(IF 1)**
- xii. **Shafiq*, M.** & Luong, H. T. (2021). Optimal quantity allocation decision in revenue sharing contract. *International Journal of Industrial Engineering*, 28(6) 644-664. **(IF 1.1)**
- xiii. Ali, M. R. & **Shafiq*, M.** (2021). Revealing Expert Perspectives on Challenges to Electricity Demand-Side Management in Pakistan: An application of Q-Methodology. *Utilities Policy*, 70, 101216. **(IF 4)**
- xiv. Rehman, H. U., **Shafiq, M.**, Nabi, F. G., Hassan, S., Baig, S. A. & Manzoor, U. (2021). Analyzing the Epidemiological Outbreak of COVID-19 using Descriptive and Predictive Analytics. *International Journal on Emerging Technologies*, 12(1): 284–290.
- xv. Ali, M. R., **Shafiq*, M.**, & Andejany, M. (2021). Determinants of Consumers' Intentions towards the Purchase of Energy Efficient Appliances in Pakistan: An Extended Model of the Theory of Planned Behavior. *Sustainability*, 13(2), 565. **(IF 3.9)**
- xvi. Kamal, S. A., **Shafiq*, M.**, Kakria, P. (2020). Investigating acceptance of telemedicine services through an extended Technology Acceptance Model. *Technology in Society*, 60, 101212 **(IF 9.2)**
- xvii. Fakhar, A., Jahanzaib, M., Sarfraz, H., **Shafiq, M.**, & Rizwan, A. (2020). Investigating the Impact of Emotional Intelligence on Academic Performance of Engineering Students: An Exploratory Study in Pakistan. *The Nucleus*, 56(3), 105-111.
- xviii. **Shafiq*, M.**, Waqas, M., Shahzad, K., Rashid, Z., Islam, M. A., Bilal, M., & Hameed, U. (2020). Optimizing Throughput, WIP and Cycle Time: A Case Study of Utensils Manufacturing Shop Floor. *Journal of Engineering Research*, 8(1), 170-188 **(IF 1)**

- xix. Rashid, Z., **Shafiq*, M.**, Islam, M., Menanno, M., Iqbal, N., Khan, H., & Ragno, P. (2019). *Assessment of Isometric Pulls Strength of Industrial Cart Pullers -An Electromyography Study from an Apparel Manufacturing Industry*. *Procedia Manufacturing*, (39), 1438-1446.
- xx. Ahmad, H., Tariq, A., Shehzad, A., Faheem, M.S., **Shafiq, M.**, Rashid, I.A., Afzal, A., Munir, A., Riaz, M.T., Haider, H.T., Afzal, A., Qadir, M.B., Khaliq, Z. (2019). Stealth technology: Methods and composite materials—A review. *Polymer Composites*, 40, 4457-4472. **(IF 5.2)**
- xxi. Rehman, A., Ramzan, **M.**, **Shafiq, M.**, Rasheed, A., Naeem, M. & Savino, M. (2019). *Productivity Improvement through Time Study Approach: A Case Study from an Apparel Manufacturing Industry of Pakistan*. *Procedia Manufacturing*, (39), 1447-1454.
- xxii. **Shafiq*, M.**, & Savino, M. M. (2019). Supply chain coordination to optimize manufacturer's capacity procurement decisions through a new commitment-based model with penalty and revenue-sharing. *International Journal of Production Economics*, 208, 512-528. **(IF 12)**
- xxiii. Shahzad, A., Rasheed, A., Khaliq, Z., Qadir, M.B., Khan, M.Q., Hamdani, S.T.A., Ali, Z., Afzal, A., Irfan, M., **Shafiq, M.** & Kim, I.S. (2019). Processing of metallic fiber hybrid spun yarns for better electrical conductivity. *Materials and Manufacturing Processes*, 34, 1008-1015. **(IF 4.8)**
- xxiv. Usman, M., **Shafiq*, M.**, Savino, M., Rashid, Z., Yehya, M.I., Naqvi, A.A., Iqbal, S. and Menanno, M., (2019). Investigating the Role of QMS implementation on customers' satisfaction: A Case Study of SMEs. *IFAC-PapersOnLine*, 52(13), 2032-2037.
- xxv. Zhao, M., Luong, H. T., & **Shafiq*, M.** (2019). Coordination of a multi-echelon supply chain using spanning revenue sharing contract. *International Journal of Industrial Engineering*, 26(6), 915-933. **(IF 1.1)**
- xxvi. Shehzadi, S., Wasim, A., Hussain, S., **Shafiq, M.**, & Jahanzaib, M. (2018). Implementation Framework of ISO 22000 Food Safety Management System in Higher Educational Institutes (HEIs) Cafes of Pakistan. *The Nucleus*, 55(4), 200-218.
- xxvii. Akhtar, M. U., Raza, M. H., & **Shafiq*, M.** (2019). Role of batch size in scheduling optimization of flexible manufacturing system using genetic algorithm. *Journal of Industrial Engineering International*, 15(1), 135-146.
- xxviii. Nisar, S., Dastgeer, G., **Shafiq*, M.**, & Usman, M. (2019). Qualitative and semi-quantitative analysis of health-care pharmaceutical products using laser-induced breakdown spectroscopy. *Journal of Pharmaceutical Analysis*, 9(1), 20-24. **(IF 8.8)**
- xxix. Nisar, S., & **Shafiq*, M.** (2019). Framework for Efficient Utilisation of Social Media in Pakistan's Healthcare Sector. *Technology in Society*, 56, 31-43. **(IF 9.2)**
- xxx. Savino, M. M., & **Shafiq, M.** (2018). An extensive study to assess the sustainability drivers of production performances using a resource-based view and contingency analysis. *Journal of Cleaner Production*, 204, 744-752. **(IF 11.1)**

- xxx. Kamal, S. A., Hussain, S., **Shafiq, M.**, & Jahanzaib, M. (2018). Investigating the Adoption of Telemedicine Services: An Empirical Study of Factors Influencing Physicians' Perspective in Pakistan. *The Nucleus*, 55(3), 153-163.
- xxxii. Siddique, P. J., Luong, H. T., & **Shafiq, M.** (2018). An optimal joint maintenance and spare parts inventory model. *International Journal of Industrial and Systems Engineering*, 29(2), 177-192.
- xxxiii. **Shafiq*, M.**, & Luong, H. T. (2017). Joint replenishment and joint delivery of multiple items. *International Journal of Industrial Engineering*, 24(1), 60-80. **(IF 1.1)**
- xxxiv. **Shafiq*, M.**, & Luong, H. T. (2017). Production allocation decision using revenue sharing contract with prior commitments and two-way penalties. *International Journal of Industrial and Systems Engineering*, 26(2), 247-274.
- xxxv. Kamal, A., Fakhar, A., Nisar, S., & **Shafiq*, M.** (2017). Unit Commitment and Generation Scheduling of a Thermal Power Plant Using Economic Load Dispatch. *International Electrical Engineering Journal*, 8(1), 2464-2478.
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Conference Proceedings/Presentations/Publications

- i. Mobeen, A., Mohsin, M. J., **Shafiq, M.**, & Sriwana, I. K. (2023, August). Dynamic programming for shortest path problem in a multimodal transportation network comprising intermediate sinks. In **AIP Conference Proceedings** (Vol. 2485, No. 1). AIP Publishing.
- ii. Munsab, N., Khattak, A., Shaheen, T., **Shafiq, M.**, Hakeem-Ur-Rehman, H. U. R., Nabi, F. G., & Rehman, M. A. (2023, August). Impact of supply chain practices on customers' retention. In **AIP Conference Proceedings** (Vol. 2485, No. 1). AIP Publishing.
- iii. Mobeen, A., Shafiq, M*, Aziz, M. H., and Mohsin, M. J. (2023). *Mobeen, A., Shafiq, M., Aziz, M. H., & Mohsin, M. J. (2023, November). Interruptions and multitasking in emergency departments: An observational study of the daily work pattern of the doctors. In AIP Conference Proceedings (Vol. 2693, No. 1). AIP Publishing.*
- iv. Mobeen, A., Mohsin, M. J., **Shafiq, M*** and Sriwana, I. (2021). Dynamic programming for shortest path problem in a multimodal transportation network comprising intermediate sinks. **13th International Seminar on Industrial Engineering and Management 2021**.
- v. Nabi, F. G., Sundaraj, K., Vijejan*, V., **Shafiq, M.** (2021). Palaniappan, R., Talib, I., Rehman, H. U. A Novel Design of Robotic hand Based on Bird Claw Model. **Asian Conference on Intelligent Computing & Data Science 2021 (ACIDS2021)**.
- vi. Mansub, N., Khattak, A., Shaheen, T., **Shafiq, M***, Rehman, H. R., Nabi, F. G. and Rehman, M. A. (2021). Impact of supply chain practices on customers' retention. **13th International Seminar on Industrial Engineering and Management 2021**.

- vii. Khan, S., Ashfaq, M., Awan, M., Rehman, H., Kamal, A., Hoa, N., and **Shafiq, M***. (2020). Investigating Supply chain issues in the food processing industry. **IOP Conference Series: Materials Science and Engineering**, (847), 1-9. doi:10.1088/1757-899X/847/1/012071
- viii. Khattak, A., Shaheen, T., Hamza, M., Sriwana, I., **Shafiq, M***, Hoa, N. and Kamal, A. (2020). Factors influencing customers' satisfaction: A case study of SMEs from Pakistan. **Proceedings of 12th International Seminar on Industrial Engineering and Management**, 22-31.
- ix. Khalid, T., **Shafiq*, M.**, Abdulrehman, M., Ali, A., & Menanno, M. (2018, December). Asset management with Internet of Things: A case study within an automatic fuel management and remote monitoring system. 12th International Conference on Software, Knowledge, Information Management & Applications (SKIMA) (pp. 1-6). IEEE.
- x. Hafeez, F., **Shafiq*, M.**, Sarfraz, H., Hoa, N. T., Menanno, M., Savino, M. M. (2018). Mixed Model Assembly Line Design in a Lean implemented Manufacturing Industry. XXII Summer School "Francesco Turco" – Industrial Systems Engineering, Palermo, Italy.
- xi. Mushtaq F, **Shafiq M**, Savino MM, Khalid T, Menanno M, Fahad A. Reverse logistics route selection using AHP: A case study of electronics scrap from Pakistan. In *Advances in Production Management Systems. Production Management for Data-Driven, Intelligent, Collaborative, and Sustainable Manufacturing: IFIP WG 5.7 International Conference, APMS 2018, Seoul, Korea, August 26-30, 2018, Proceedings, Part I 2018* (pp. 3-10). Springer International Publishing.
- xii. Sriwana, I.K., Menanno, M., Arkeman, Y., Marimin, **Shafiq, M.**, Islam, M. A. (2018). Supply improvement of cacao agro-industry using an Interpretive Structural Modelling (ISM): a case study of cacao supply from Indonesia. XXII Summer School "Francesco Turco" – Industrial Systems Engineering, Palermo, Italy.
- xiii. **Shafiq*, M.**, Nisar, W. B., Savino, M. M., Rashid, Z., & Ahmad, Z. (2018). *Monitoring and controlling of unaccounted for gas (UFG) in distribution networks: A case study of Sui Northern Gas Pipelines Limited Pakistan. IFAC-PapersOnLine*, 51(11), 253-258.
- xiv. Hoa, N.T.X. **Shafiq, M.** (2017). Improve the performance of supply chain by quantity flexibility contract: feasibility coordination. International Conference on Emerging Challenges (ICECH2017), Hanoi, Vietnam.
- xv. Rashid, Z. **Shafiq, M.**, Cocca, P., Marciano, F., Ayesha, T. (2017). Hand-Arm Vibration, grip strength and prevalence of health disorders among stone crushing workers (accepted). 8th International Conference on Applied Human Factors and Ergonomics (AHFE 2017), California, USA.
- xvi. Ayesha, T., **Shafiq*, M.**, Hoa, N. T. X., Rashid, Z. (2016). Production allocation using capacity allocation and revenue sharing contract. International Conference on Emerging Challenges (ICECH2016), Hanoi, Vietnam.

1. Mushtaq, F., **Shafiq, M.**, Savino, M. M., Khalid, T., Menanno, M., & Fahad, A. (2018, August). Reverse Logistics Route Selection Using AHP: A Case Study of Electronics Scrap from Pakistan. In *IFIP International Conference on Advances in Production Management Systems* (pp. 3-10). Springer, Cham.
 2. Rashid, Z. **Shafiq, M.**, Cocca, P., Marciano, F., Ayesha, T. (2017). Hand-Arm Vibration, grip strength and prevalence of health disorders among stone crushing workers. Goonetilleke, R. S., & Karwowski, W. (Eds.). (2017). *Advances in Physical Ergonomics and Human Factors: Proceedings of the AHFE 2017 International Conference on Physical Ergonomics and Human Factors, July 17-21, 2017, the Westin Bonaventure Hotel, Los Angeles, California, USA* (Vol. 602). Springer.
 3. *Book edited (2024): The 6th international Conference on Science and Engineering, Scientific Net, Volume 135, ISSN 978-3-0364-0263-5.*
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Academic and Administrative Achievements

- i. **Session Chair:** Symposium on Sustainable Industrial Practices: Innovations for Greener Future. 10th Invention to Innovation Summit 23-24 April, 2025
- ii. **Keynote Speaker:** International conference on applied information technology and innovation (ICAITI) 2021. Telkom University, Politeknik Negeri Padang and Mataram University, Indonesia.
- iii. **Editorial Board** member of The 5th International Conference on Science and Engineering (ICSE) 2021 held by Faculty of Science and Technology, UIN Sunan Kalijaga Yogyakarta, Indonesia.
- iv. **Speaker of international webinar-** on the topic of "IoT and Industry 4.0" organized by the faculty of engineering, Universitas Esa Unggul, Indonesia.
- v. **Guest Editor** for special Issue on: "Product Development Process Management" in the *International Journal of Product Development (IJPD)*.
- vi. **Launched PhD IEM** Program after obtaining NOC from HEC Pakistan & other statutory bodies.
- vii. **Launched MS SCM** Program after obtaining NOC from HEC Pakistan & other statutory bodies.
- viii. **Program Manager** for MSIEM (Master of Science in Industrial Engineering and Management)
- ix. **Chair of Continuous Quality Improvement (CQI)** Committee and Outcome Based Education (OBE) accreditation committee for DIEM
- x. **Team Leader Accreditation Committee**, IQTM, University of the Punjab. (Level I accreditation achieved)
- xi. **Team Leader Accreditation Committee**, DIEM, University of the Punjab. (Level II accreditation achieved)
- xii. **Team Member Accreditation Committee**, IED, UET Taxila. (Level II accreditation achieved)
- xiii. Curriculum developed for **BSIEM** and **MSIEM**

- xiv. **Track Chair:** entitled “Industrial Logistics with a Focus on Industry 4.0 and Human Factors” in International Conference on Production Research (ICPR 2019), **Chicago, USA.**
 - xv. Member **TVET** Sector Support Program (TSSP) for Qualification Development.
 - xvi. Member **NAVTTC** Qualification Development Committee for Curriculum development.
 - xvii. **Member examination committee** (Fall 2018) for the Department of Engineering, **University of Sannio, Italy.**
 - xviii. **Keynote speaker** in workshop on safety in engineering laboratories, 24th May, 2017, UET Taxila Pakistan.
 - xix. Best group project **award**, K-water internship program 2015, K-water Daejeon, Korea.
 - xx. Group leader of AIT interns for K-water, K-water internship program 2015, K-water Daejeon, Korea.
 - xxi. Chairperson for SU academic affairs committee, 2014.
 - xxii. Scholarship for Ochanomizu Summer Program 2013, Ochanomizu University Tokyo, Japan.
 - xxiii. 3rd Position in AIT academic Olympiad in January, 2013 semester.
 - xxiv. Higher Education Commission of Pakistan (HEC) Scholarship for study pursuing higher education (Phase II, Batch III) – August 2011.
 - xxv. AIT fellowship for M. Eng. and D. Eng. Degrees.
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Workshops/Certificates

- i. Sustainability and Quality Assurance for Academic Governance and Redesign of Engineering Studies (SQUARES) conference held at Office of Vice Chancellor, Royal University of Bhutan, **Thimphu, Bhutan**, 01-03 October 2024.
- ii. Sustainability and Quality Assurance for Academic Governance and Redesign of Engineering Studies (SQUARES) consortium meeting held at Gdańsk University of Technology, Narutowicza 11/12 **Gdańsk, Poland**, 18-19 July 2024.
- iii. Sustainability and Quality Assurance for Academic Governance and Redesign of Engineering Studies (SQUARES) consortium meeting held at Pulchowk Campus, the Institute of Engineering, Tribhuvan University in **Katmandu**, 8-11 January 2024.
- iv. Workshop on How to Prepare Self-Assessment Report (SAR), April 04, 2023, University of the Punjab Lahore.
- v. Workshop on **Computational Mathematics and Science**, 20-24 March 2017, Chulalongkorn University, Bangkok Thailand.
- vi. **Keynote speaker** in workshop on **safety in engineering laboratories**, 24th May, 2017, UET Taxila Pakistan.
- vii. Workshop on **Outcome based education and implementation**, 1-2 Feb, 2017, UET Taxila Pakistan.

- viii. Training on **Enterprise computing: Introduction to SAP ERP ECC 6.0 using GBI 2.20 Dataset**, 19-23 May, 2014, Asian Institute of Technology, Thailand.
 - ix. Latest topics in **Natural Sciences and Contribution of Japan**, 1-9 August, 2013, Ochanomizu University, Tokyo, Japan.
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Academics Events Organization

- 1. Training on Amazon Supply Chain Management November, 2021.
 - 2. Workshop on safety in engineering laboratories 23-05-2017.
 - 3. Multi-university research Exhibition, AIT Conference Center, 2014.
 - 4. Research Methodology, Asian Institute of Technology, 2014.
 - 5. Formatting and Citation, Asian Institute of Technology, 2014.
 - 6. Technical Writing, Asian Institute of Technology, 2014.
 - 7. Workshops such as MATLAB, SPSS, Endnote, Mendlly, Latex etc., Asian Institute of Technology, 2014.
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Affiliations

- 1. 2012 - Onward Member of International Association of Engineers (IAENG)
- 2. 2008 - Present Member of Pakistan Engineering Council