

Prof. Dr. Muhammad Riaz

(HEC Approved Supervisor)

Professor

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University of the Punjab,
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Websites:

<http://pu.edu.pk/faculty/description/418/Dr-Muhammad-Riaz.html>

<https://www.researchgate.net/profile/Muhammad-Riaz-35>

<https://scholar.google.com.pk/citations?hl=en&user=-vea11IAAAAJ>

<https://orcid.org/0000-0001-8115-9168>

Top 2% researcher in 2021 and 2022.



July 27, 2023

PERSONAL DATA:		SUMMARY (Teaching & Research):	
Name:	Dr. Muhammad Riaz	Teaching Experience:	26 years
Father's Name:	Muhammad Haneef	Publications:	158
Domicile:	Punjab	Citations:	3350
City:	Lahore	Book Chapters:	03
Gender (M/F):	Male	Number of PhD supervised:	05
Marital Status:	Married	Number of M.Phil supervised:	27
Contact:	+923004012299	Impact Factor:	390+
Telephone Office:	+924299231241 Ext 115	Number of papers reviewed:	550+
Postal Address:	Department of Mathematics, University of the Punjab, Quaid-e-Azam Campus, Lahore, Pakistan. Post Code: 54590	Number of Journals as a reviewer:	100+
		Member Editorial Board of International Journals:	15
		International Collaborations:	40+
<ul style="list-style-type: none"> ➤ Dr. Muhammad Riaz is one of top 2% researcher included in the global list released by Stanford University in various disciplines on October 09, 2021 and October 10, 2022. The ranking lists contain the names of over 100,000 top-scientists, researchers, doctors and engineers https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3?fbclid=IwAR2pxZOMQLPN913AgyB_khebGuI_BilrPty4ooFZE6HjAV2poMbp_hvCtCnM https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/4 ➤ Guest Editor of Special Issue of Symmetry MDPI: Recent Advances in Fuzzy Optimization Methods and Models https://www.mdpi.com/journal/symmetry/special_issues/MVTZ91VN9H ➤ Associate Editor (AE) Journal of Intelligent & Fuzzy Systems (JIFS) ➤ Guest Editor Special Issue in Mathematics MDPI Special Issue "Data Driven Decision-Making Under Uncertainty (D3U), 2nd Edition" https://www.mdpi.com/journal/mathematics/special_issues/IV7NRYG3H8 ➤ Guest Editor Special Issue in Computer Modeling in Engineering & Sciences-CMES Control Systems and Machine Learning for Intelligent Computing https://www.techscience.com/CMES/special_detail/control_systems ➤ Editor: Journal of New theory http://www.newtheory.org/editorial.html ➤ Editor: Journal of Advanced Studies in Topology http://www.m-sciences.com/index.php?journal=jast&page=index ➤ Editor: Decision Making: Applications in Management and Engineering (DMAME) 			

- <http://www.dmame.org/index.php/dmame>
- **Editor:** Journal of Artificial Intelligence and Systems
<https://iecsce.org/journals/AIS>
 - **Editor:** International Journal of Social Science, Innovation and Educational Technologies
<https://issjournal.com/>

Field of Interest/ Area of Specialization

Research work:

- Algebra and Topology (Algebraic and topological structures)
- Fuzzy Sets and Systems, Soft Set theory, Rough set Theory
- Computational Intelligence, Data Science, Machine Learning
- Multi-Criteria Decision Making problems

EDUCATION:

Ph. D. in Mathematics (2014)

Ph. D. Notification. No. Ph.D.(R)/87/2014. Dated: 07-08-2014. HEC Ph.D. Country Directory. Serial/PCD No. 19675. Institution: University of the Punjab, Lahore

Thesis title: **Certain Quadratic Fields under the Action of two Generator Groups**

Supervised by: **Dr. M. A. Malik** Associate Professor. Department of Mathematics, University of the Punjab, Lahore.

Courses: Spectral Theory in Hilbert Spaces I & II, Minimal Surfaces, Lattice Theory, BCK Algebra, BCI Algebra.

Courses Taught by Instructor's: Prof. Dr. Shaban Ali Bhatti, Prof. Dr. Bashir Sadiq, Dr. Bilal Masud

M. Phil. in Mathematics (1996-1998) Institution: University of the Punjab, Lahore

Thesis Title: **Bounded Linear Operators and Fourier Transform Theory**

Research Supervisor: **Prof. Dr. G. M. Habibullah**

Publications:

Book Chapters

1. Hamid, M.T., Riaz, M., & Naeem, K. (2022). q-Rung Orthopair Fuzzy Soft Topology with Multi-attribute Decision-Making. In: Garg, H. (eds) q-Rung Orthopair Fuzzy Sets. Springer, Singapore. 17-46. Dated: 09-09-2022.
https://doi.org/10.1007/978-981-19-1449-2_2
2. Riaz, M. & Athar Farid, H.M. (2022). q-Rung Orthopair Fuzzy Soft Set-Based Multi-criteria Decision-Making. In: Garg, H. (eds) q-Rung Orthopair Fuzzy Sets. Springer, Singapore. 465–503. Dated: 09-09-2022.
https://doi.org/10.1007/978-981-19-1449-2_18
3. K. Naeem, K., & Riaz, M. (2021). Pythagorean Fuzzy Soft Sets-Based MADM. In: Garg H. (eds) Pythagorean Fuzzy Sets. Springer, Singapore. 407-442. Dated: 23-07-2021.
https://doi.org/10.1007/978-981-16-1989-2_16.

Published Papers

Year 2023 (Published Papers)

4. Riaz, M., Farid, H.M.A., Jana, C., Pal, M., Sarkar, B. (2023). Efficient City Supply Chain Management through Spherical Fuzzy Dynamic Multistage Decision Analysis, *Engineering Applications of Artificial Intelligence*, 126, 1-23. Dated: 27-07-2023. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 7.802. <https://doi.org/10.1016/j.engappai.2023.106712>
5. Riaz M., Farid, H.M.A., Razaq, A., Simic, V. (2023). A new approach to sustainable logistic processes with q -rung orthopair fuzzy soft information aggregation, *PeerJ Computer Science*, (In Press). Dated: 20-07-2023. Q2, Category W, ISSN 2376-5992. JCR-SCIE, Impact Factor 3.6.
6. Kausar, R., Riaz, M., Simic, V., Akmal, K., & Farooq, M. U. (2023). Enhancing solid waste management sustainability with cubic m -polar fuzzy cosine similarity. *Soft Computing*, 1-21. Dated: 11-07-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 3.732. <https://doi.org/10.1007/s00500-023-08801-w>
7. Razaq, A., & Riaz, M. (2023). M -parameterized N -soft set-based aggregation operators for multi-attribute decision making. *Soft Computing*, 1-17. Dated: 07--07-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 3.732. <https://doi.org/10.1007/s00500-023-08853-y>
8. Kausar, R., Farid, H. M. A., & Riaz, M. (2023). A numerically validated approach to modeling water hammer phenomena using partial differential equations and switched differential-algebraic equations. *Journal of Industrial Intelligence*, 1(2), 75-86. <https://doi.org/10.56578/jii010201>
9. Farid, H.M.A., Riaz, M., Almohsin, B. Marinkovic, D. (2023). Optimizing filtration technology for contamination control in gas processing plants using hesitant q -rung orthopair fuzzy information aggregation. *Soft Computing* (2023). Dated: 21-06-2023. ISSN 1432-7643, SCIE-JCR, W Category, Q2, Impact Factor 3.732. <https://doi.org/10.1007/s00500-023-08588-w>.
10. Iram, S., Al-Aqrabi, H., Shakeel, H. M., Farid, H. M. A., Riaz, M., Hill, R., ... & Alsboui, T. (2023). An Innovative Machine Learning Technique for the Prediction of Weather Based Smart Home Energy Consumption. *IEEE Access*. 1-23. Dated: 19-06-2023. Category W, Q2, JCR-SCIE, ISSN 2169-3536. Impact Factor 3.476. [DOI: 10.1109/ACCESS.2023.3287145](https://doi.org/10.1109/ACCESS.2023.3287145)
11. Habib, A., Khan, Z. A., Riaz, M., & Marinkovic, D. (2023). Performance Evaluation of Healthcare Supply Chain in Industry 4.0 with Linear Diophantine Fuzzy Sine-Trigonometric Aggregation Operations. *Mathematics*, 11(12), 2611. Dated: 07-06-2023. W Category, Q1, ISSN 2227-7390, JCR-SCIE. Impact Factor 2.592. <https://doi.org/10.3390/math11122611>
12. Farid, H. M. A., & Riaz, M. (2023). q -Rung orthopair fuzzy Aczel–Alsina aggregation operators with multi-criteria decision-making. *Engineering Applications of Artificial Intelligence*, 122, 106105. Dated: 01-06-2023. Q1, Category W, ISSN 0952-1976. JCR-SCIE, Impact Factor 7.802. <https://doi.org/10.1016/j.engappai.2023.106105>.

13. Farid, H. M. A., Riaz, M., & Khan, Z. A. (2023). T-spherical fuzzy aggregation operators for dynamic decision-making with its application. *Alexandria Engineering Journal*, 72, 97-115. Dated: 01-06-2023. Q1, Category W, ISSN 1110-0168. JCR-SCIE, Impact Factor 6.626.
<https://doi.org/10.1016/j.aej.2023.03.053>
14. Demir, G., Riaz, M., & Almalki, Y. (2023). Multi-criteria decision making in evaluation of open government data indicators: An application in G20 countries, *AIMS Mathematics* 8(8):18408-18434. DOI: 10.3934/math.2023936. Dated: 30-05-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739.
15. Riaz, M., Farid, H. M. A., Kausar, R. (2023). Innovative intuitionistic fuzzy fairly aggregation operators with linear programming based decision-making approach. *Journal of Ambient Intelligence and Humanized Computing*, 1-13. DOI: 10.1007/s12652-023-04631-8. Dated: 18-05-2023. ISSN 1868-5145. W- Category, Q1. <https://doi.org/10.1007/s12652-023-04631-8>
16. Riaz, M., Farid, H. M. A., Antucheviciene, J., & Demir, G. (2023). Efficient Decision Making for Sustainable Energy Using Single-Valued Neutrosophic Prioritized Interactive Aggregation Operators. *Mathematics*, 11(9), 1-29. Dated: 05-05-2023. Category W, Q1, ISSN 2227-7390, JCR-SCIE. Impact Factor 2.592.
<https://doi.org/10.3390/math11092186>.
17. Habib, A., Khan, Z. A., Jamil, N., & Riaz, M. (2023). A decision-making strategy to combat CO₂ emissions using sine trigonometric aggregation operators with cubic bipolar fuzzy input. *AIMS Mathematics*, 8(7), 15092-15128. DOI: 10.3934/math.2023771. Dated: 23-04-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739.
18. Saqlain, M., Riaz, M., Kiran, N., Kumam, P., Yang, M. Shen. (2023). Water Quality Evaluation Using Generalized Correlation Coefficient for M-Polar Neutrosophic Hypersoft Sets. *Neutrosophic Sets and Systems*, 55, 58-89. Dated: 16-04-2023.
19. Razzaq, A., & Riaz, M. (2023). Some modified picture fuzzy average aggregation operators with priority roles of stakeholders in implementation of education 4.0. *Journal of Intelligent & Fuzzy Systems*, 1-23. DOI: 10.3233/JIFS-224600. Dated: 04-04-2023. ISSN 1064-1246. JCR-SCIE, Category X, Impact Factor 1.737.
20. Riaz, M., & Farid, H. M. A. (2023). Multi-criteria Decision-making Algorithm Based on Linear Diophantine Fuzzy Aggregation Operators. *Journal of Multiple-valued Logic and Soft Computing*, 40(3-4), 221–251. Dated: 04-03-2023. ISSN 1542-3980, Q2, Category Y, JCR-SCIE Impact Factor 0.78.
21. Riaz, M., Farid, H. M. A., Ashraf, S., & Kamacı, H. (2023). Single-valued neutrosophic fairly aggregation operators with multi-criteria decision-making. *Computational and Applied Mathematics*, 42(3), 104. Dated 03-03-2023, ISSN 2238-3603. W-Category. SCIE-JCR-Impact Factor 1.360.
<https://doi.org/10.1007/s40314-023-02233-w>.
22. Kumam, W., Naeem, K., Riaz, M., Khan, M. J., & Kumam, P. (2023). Comparison measures for Pythagorean m-polar fuzzy sets and their applications to robotics and movie recommender system. *AIMS*

Mathematics, 8(5), 10357-10378. DOI: 10.3934/math.2023524. Dated: 28-02-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739.

<https://www.aimspress.com/article/doi/10.3934/math.2023524>

23. Farid, H. M. A., Riaz, M., & Garcia, G. S. (2023). T-spherical fuzzy information aggregation with multi-criteria decision-making. AIMS Mathematics, 8(5), 10113-10145. DOI: 10.3934/math.2023512. Dated: 24-02-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739.
<https://www.aimspress.com/article/doi/10.3934/math.2023512>
24. Riaz, M., Farid, H. M. A., & Karaaslan, F. (2023). Linear Diophantine Fuzzy Aggregation Operators with Multi-Criteria Decision-Making. Journal of Computational and Cognitive Engineering, 1-12.
[DOI: 10.47852/bonviewJCCE3202420](https://doi.org/10.47852/bonviewJCCE3202420) Dated: 15-02-2022.
25. Riaz, M., Hashmi, M. R., Karaaslan, F., Sezgin, A., Al Shamiri, M. M. A., Khalaf, M. M. Emerging Trends in Social Networking Systems and Generation Gap with Neutrosophic Crisp Soft Mapping. Computer Modeling in Engineering & Sciences 2023, 136(2), 1759-1783. Dated: 06-02-2022. ISSN 1526-1492, Category X, JCR-SCIE Impact Factor 2.027.
<https://doi.org/10.32604/cmescs.2023.023327>
26. Farid, H.M.A.; Bouye, M.; Riaz, M.; Jamil, N. Fermatean Fuzzy CODAS Approach with Topology and Its Application to Sustainable Supplier Selection. Symmetry 2023, 15(2), 1-26.
<https://doi.org/10.3390/sym15020433> Dated: 06-02-2023. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
27. Qiyas, M.; Naeem, M.; Abdullah, L.; Riaz, M.; Khan, N. Decision Support System Based on Complex Fractional Orthotriple Fuzzy 2-Tuple Linguistic Aggregation Operator. Symmetry 2023, 15, 251.
<https://doi.org/10.3390/sym15010251> Dated: 16-01-2023. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
28. Kausar, R., Farid, H.M.A., Riaz, M., & Bilgin, N. G. (2023). Innovative CODAS Algorithm for q-Rung Orthopair Fuzzy Information and Cancer Risk Assessment. Symmetry. 2023, 15(1), 1-20.
<https://doi.org/10.3390/sym15010205>. Dated: 10-01-2023. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
29. Saqlain, M., Riaz, M., Imran, R., & Jarad. F. (2023). Distance and similarity measures of intuitionistic fuzzy hypersoft sets with application: Evaluation of air pollution in cities based on air quality index. AIMS Mathematics. 8(3), 6880-6899. DOI: 10.3934/math.2023348. Dated: 10-01-2023. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739.
<https://www.aimspress.com/article/id/63bd4b43ba35de77c348e173>
30. Riaz, M., & Jamil, N. (2023). Topological structures on cubic bipolar fuzzy sets with linear assignment model and SIR method for healthcare. Journal of Intelligent & Fuzzy Systems. 44(1), 1191-1212. DOI:

10.3233/JIFS-222224. Dated: 05-01-2023. ISSN 1064-1246. JCR-SCIE, Category X, Impact Factor 1.737.

Year 2022 (Published Papers)

31. Farid, H. M. A., Kausar, K., Riaz, M., Marinkovic, D., & Stankovic, M. (2022). Linear Diophantine fuzzy fairly averaging operator for suitable biomedical material selection, *Axioms*, 11, 1-30. <https://www.mdpi.com/2075-1680/11/12/735> Dated: 15-12-2022. JCR-SCIE, Category X, Impact Factor 1.824.
32. Kausar, R., Farid, H. M. A., Riaz, M., & Bozanic, D. (2022). Cancer Therapy Assessment Accounting for Heterogeneity Using q-Rung Picture Fuzzy Dynamic Aggregation Approach, *Symmetry*, 14(12), 1-40. <https://www.mdpi.com/2073-8994/14/12/2538> Dated: 30-11-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
33. Ayub, S., Shabir, M., Riaz, M., Karaaslan, F., Marinkovic, D., & Vranjes, D. (2022). Linear Diophantine Fuzzy Rough Sets on Paired Universes with Multi Stage Decision Analysis, *Axioms*, 11(12), 1-18. <https://www.mdpi.com/2075-1680/11/12/686> Dated: 30-11-2022. JCR-SCIE, Category X, Impact Factor 1.824.
34. Petchimuthu, S., Riaz, M. & Kamacı, H. Correlation coefficient measures and aggregation operators on interval-valued linear Diophantine fuzzy sets and their applications. *Computational and Applied Mathematics*, 41(2022). 1-41. <https://doi.org/10.1007/s40314-022-02077-w>. Dated: 23-11-2022. JCR-SCIE Impact Factor 2.998. Q2, HJRS Category W
35. Bilgin, N. G., Pamucar, D., & Riaz, M. Fermatean Neutrosophic Topological Spaces and an Application of Neutrosophic Kano Method, *Symmetry*, 14(11)(2022), 1-17. Dated: 17-11-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940. <https://doi.org/10.3390/sym14112442>.
36. Riaz, M., Akmal, K., Almalki, Y., & Ahmad, D. (2022), Cubic Intuitionistic Fuzzy Topology with Application to Uncertain Supply Chain Management, *Mathematical Problems in Engineering*, 2022(2022), 1-22. Dated: 16-11-2022. JCR-SCIE, Category X, Q2, Impact Factor 1.305. <https://doi.org/10.1155/2022/9631579>.
37. Batool, S., Hashmi, M. R., Riaz, M., Smarandache, F., Pamucar, D., & Spasic, D. (2022). An Optimization Approach with Single-Valued Neutrosophic Hesitant Fuzzy Dombi Aggregation Operators. *Symmetry*, 14(11), 2271. <https://doi.org/10.3390/sym14112271>. Dated: 29-10-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
38. Alsbouy, T., Hill, R., Al-Aqrabi, H., Farid, H. M. A., Riaz, M., Iram, S., shakeel, H.M., & Hussain, M. (2022). A Dynamic Multi-Mobile Agent Itinerary Planning Approach in Wireless Sensor Networks via Intuitionistic Fuzzy Set. *Sensors*, 22(20), 8037. <https://doi.org/10.3390/s22208037>. Dated: 21-10-2022. Category W, Q1, JCR-SCIE, ISSN 1424-3210. Impact Factor 3.847.
39. Kausar, R., Tanveer, S., Riaz, M., Pamucar, D., & Goran, C. (2022). Topological Data Analysis of

- m-Polar Spherical Fuzzy Information with LAM and SIR Models. *Symmetry*, 14(10), 1-30.
<https://doi.org/10.3390/sym14102216>. Dated: 20-10-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
40. Riaz, M., Habib, A., Saqlain, M., & Yang, M. S. (2022). Cubic Bipolar Fuzzy-VIKOR Method Using New Distance and Entropy Measures and Einstein Averaging Aggregation Operators with Application to Renewable Energy. *International Journal of Fuzzy Systems*, 1-34. <https://doi.org/10.1007/s40815-022-01383-z>. Dated: 14-10-2022. SCIE Impact factor 4.085. Q2, W Category.
41. Kamaci, H., Marinkovic, D., Petchimuthu, S., Riaz, M., & Ashraf, S. (2022). Novel Distance-Measures-Based Extended TOPSIS Method under Linguistic Linear Diophantine Fuzzy Information. *Symmetry*, 14(10), 2140. <https://doi.org/10.3390/sym14102140>. Dated: 13-10-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
42. Ashraf, S., Ahmad, S., Naeem, M., Riaz, M., & Alam, M. A. (2022). Novel EDAS Methodology Based on Single-Valued Neutrosophic Aczel-Alsina Aggregation Information and Their Application in Complex Decision-Making. *Complexity*, 2022. <https://doi.org/10.1155/2022/2394472>. Dated: 10-10-2022. SCIE Impact Factor 2.121. Q1, W Category.
43. M. Riaz, H. M. A. Farid, D. Pamucar, S. Tanveer, Spherical Fuzzy Information Aggregation Based on Aczel-Alsina Operations and Data Analysis for Supply Chain, *Mathematical Problems in Engineering*, 2022(2022), 1-20. Dated: 04-10-2022. JCR-SCIE, Category X, Q2, Impact Factor 1.305.
<https://doi.org/10.1155/2022/9657703>.
44. Alshammari, I., Parimala, M., Ozel, C., Riaz, M., & Kammoun, R. (2022). New MCDM Algorithms with Linear Diophantine Fuzzy Soft TOPSIS, VIKOR and Aggregation Operators. *Mathematics*, 10(17), 1-22. Dated: 26-08-2022. Category W, Q1, ISSN 2227-7390, JCR-SCIE, Impact Factor 2.592.
<https://www.mdpi.com/2227-7390/10/17/3080>
45. Alshammari, I., Parimala, M., Ozel, C., & Riaz, M. (2022). Spherical Linear Diophantine Fuzzy TOPSIS Algorithm for Green Supply Chain Management System, *Journal of Function Spaces*, 2022(2022), 1-12. Dated: 29-07-2022. Category X, Q3, JCR-SCIE, Impact Factor 1.281.
<https://www.hindawi.com/journals/jfs/2022/3136462/>
46. M. Riaz, H. M. A. Farid, H. M. Shakeel and Y. Almalki, Modernizing energy efficiency improvement with q-rung orthopair fuzzy MULTIMOORA approach, (2022), 1-17. IEEE Access, DOI: 10.1109/ACCESS.2022.3191356. Dated: 15-07-2022. Category W, Q1, JCR-SCIE, ISSN 2169-3536. Impact Factor 3.476. <https://ieeexplore.ieee.org/document/9830715>.
47. H. M. A. Farid and M. Riaz, Innovative q-rung orthopair fuzzy prioritized interactive aggregation operators to evaluate efficient autonomous vehicles for freight transportation, *Scientia Iranica*, (2022), 1-24. DOI: 10.24200/SCI.2022.59601.6326. Dated: 11-07-2022. Category X, Q4, JCR-SCIE, ISSN 2073-8994. Impact Factor 1.416.
48. M Riaz, Y. Almalki, S. Batool and S. Tanveer, Topological structure of single-valued neutrosophic hesitant

- fuzzy sets and data analysis for uncertain supply chains, *Symmetry*, 14(7)(2022), 1-24. <https://doi.org/10.3390/sym14071382>. Dated: 05-07-2022. Category X, Q2, JCR-SCIE, ISSN 2073-8994. Impact Factor 2.940.
49. Riaz, M., & Farid, H. M. A. (2022). Picture fuzzy aggregation approach with application to third-party logistic provider selection process. *Reports in Mechanical Engineering*, 3(1), 318-327. Dated: 25-06-2022. <https://doi.org/10.31181/rme20023062022r>
50. Farid, H. M. A., Garg, H., Riaz, M., & Santos-García, G. (2022). Multi-criteria group decision-making algorithm based on single-valued neutrosophic Einstein prioritized aggregation operators and its applications. *Management Decision*, (in press). 1-39. Dated: 21-06-2022. [DOI: 10.1108/MD-04-2022-0484](https://doi.org/10.1108/MD-04-2022-0484)
51. M. Riaz, D. Pamucar, A. Habib and M. Riaz, Innovative bipolar fuzzy sine trigonometric aggregation operators and SIR method for medical tourism supply chain, *Mathematical Problems in Engineering*, (2022), Article ID 4182740, 17 pages, <https://doi.org/10.1155/2022/4182740>
Dated: 20-06-2022. JCR-SCIE, Category X, Q2, Impact Factor 1.305.
52. M. Riaz, U. Ishtiaq, C. Park, K. Ahmad and Fahim Uddin, Some fixed point results for ξ -chainable neutrosophic and generalized neutrosophic cone metric spaces with application, *AIMS Mathematics* 7(8)(2022), 14756-14784. DOI: 10.3934/math.2022811. Dated: 08-06-2022. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739. <http://www.aimspress.com/article/doi/10.3934/math.2022811>
53. M. Z. Hanif, N. Yaqoob, M. Riaz and M. Aslam, Linear Diophantine fuzzy graphs with new decision-making approach, *AIMS Mathematics*, 7(8)(2022), 14532-14556. Category W, ISSN 2473-6988, JCR-SCIE, Impact Factor 2.739. DOI: 10.3934/math.2022801. Dated: 07-06-2022. <http://www.aimspress.com/article/doi/10.3934/math.2022801>
54. M. Riaz, H. M. A. Farid, H. M. Shakeel and Danish Arif, Cost effective indoor HVAC energy efficiency monitoring based on intelligent decision support system under Fermatean fuzzy framework, *Scientia Iranica*, (2022), 1-30. DOI: 10.24200/SCI.2022.59197.6106.
Dated: 26-05-2022. Category X, ISSN 1026-3098, JCR-SCIE, Impact Factor 1.435.
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Year 2017

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Year 2012

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Research Experience/Research Supervision/ M.Phil and Ph.D Supervised:

PhD Students Supervised:

1. **Dr. Syeda Tayyba Tehrim**, Ph.D. Mathematics (2016-2020).
Title of Ph.D. Thesis: **Bipolar Fuzzy Soft Topology with Applications in Decision Making**
(Ph.D Completed) Ph. D. Notification Ph.D. (R)/175/2020 Dated: 20-10-2020.
2. **Dr. Masooma Raza Hashmi**, Ph.D. Mathematics (2017-2020).
Title of Ph.D Thesis: **Some Hybrid Structures of m-polar Neutrosophic Set with Applications**
(Ph.D Completed) Ph. D. Notification Ph.D. (R)/266/2020 Dated: 31-12-2020.
3. **Dr. Khalid Naeem**, Ph.D. Mathematics (2016-2020).
Title of Ph.D Thesis: **Some Contributions to Pythagorean Fuzzy sets and Neutrosophic Sets with Applications.**
Ph.D Completed. Ph. D. Notification No. Ph.D:/021/011 Dated: 22-03-2021.
Supervisors: Dr. Deeba Afzal and Dr. Muhammad Riaz
4. **Dr. Muzzamil Sitara**, Ph.D. Mathematics (2017-2021)
Title: **Extensions of Graph Structures Under q-Rung picture Fuzzy Environment.**
Ph.D Completed. Ph. D. Notification No. Ph.D. (R)/107/2021 Dated: 28-05-2021.
Supervisors: Prof. Dr. Muhammad Akram and Dr. Muhammad Riaz
5. **Dr. Muhammad Tahir Hamid**, Ph.D. Mathematics (2017-2021).
Title of Ph.D Thesis: **Some Contributions to q-Rung Orthopair m-Polar Fuzzy Sets and Neutrosophic Sets with Applications.**
Ph.D Completed. Ph. D. Defense Dated: 23-09-2021.
Supervisors: Dr. Deeba Afzal and Dr. Muhammad Riaz

PhD Students Supervising:

6. **Hafiz Muhammad Athar Farid**. Session 2020-2023
Title: **Some Hybrid Structures of q-Rung Orthopair Fuzzy Sets and their Aggregation Operators with Applications**
7. **Ayesha Razzaq**. Session 2020-2023

Title: [m-Polar Picture Fuzzy Topology with Applications in Multi Criteria Decision Making](#)

8. **Nimra Jamil**. Session 2020-2023

Title: [Cubic Bipolar Fuzzy Set Topology with Applications in Multi Criteria Decision Making](#)

M.Phil Students Supervised:

1. Asma Attique (M.Phil Mathematics. Session 2021-2023)
Thesis Title: [Some Bipolar Single-Valued Neutrosophic Aggregation Operators with Applications](#)
2. Toqeer Jamil (M.Phil Mathematics. Session 2021-2023)
Thesis Title: [Cubic Picture Fuzzy Topology with Multi-Criteria Decision-Making](#)
3. Yasir Yasin (M.Phil Mathematics. Session 2021-2023)
Thesis Title: [Cubic m-Polar fuzzy Information Aggregation with Multi-Criteria Decision-Making](#)
4. Shaista Tanveer. M.Phil Mathematics. Session 2020-2022
Title: [Spherical Fuzzy Soft Topology and Information Aggregation with Applications](#)
5. Khadija Akmal. M.Phil Mathematics. Session 2020-2022
Title: [Cubic m-Polar Fuzzy Topology and Information Measures with Applications](#)
6. Sania Batool. M.Phil Mathematics. Session 2020-2022
Title: [Single-Valued Neutrosophic Hesitant Fuzzy Topology and Information Measures with Applications](#)
7. Muhammad Amir. M.Phil Mathematics. Session 2020-2022
Title: [Bipolar Picture Fuzzy Topology with Applications in Multi-Criteria Decision Making](#)
8. Ali Raza. M.Phil Mathematics. Session 2020-2022
Title: [q-Rung Orthopair m-Polar Fuzzy Topology with Multi-Attribute Decision-Making Methods](#)
9. Muhammad Abdullah Khokhar. M.Phil Mathematics. Session 2019-2021
Title: [Cubic m-Polar Fuzzy Aggregation Operators with Multi-Criteria Decision-Making Problems](#)
10. Maryam Saba. M.Phil Mathematics. Session 2019-2021
Title: [m-Polar Spherical Fuzzy Topology with Applications in Decision-Making](#)
11. Anam Habib. M.Phil Mathematics. Session 2019-2021
Title: [Cubic Bipolar Fuzzy Aggregation Operators with Multi-Criteria Decision-Making Methods](#)
12. Mishal Riaz. M.Phil Mathematics. Session 2019-2021
Title: [Bipolar Picture Fuzzy Information Measures with Applications in Decision-Making](#)
13. Hafiz Muhammad Athar Farid, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-06
Title of M.Phil Thesis: [Some q-Rung Orthopair Fuzzy Aggregation Operators with Multi-Criteria Decision Making Problems](#)
14. Ayesha Razzaq, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-24
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15. Nawazish Ali, M.Phil Mathematics. Session 2018-2020. Roll No. MPF18-31
Title of M.Phil Thesis: [Pythagorean Fuzzy Soft Rough Set Topology with Multi-Criteria Decision Making Methods](#)
16. Iqra Zareef, M.Phil Mathematics (2017-2019)
Title of M.Phil Thesis: [N-Soft Topology and its Applications to Multi-Criteria Decision Making](#)
17. Iqra Nawaz, M.Phil Mathematics (2017-2019)
Thesis titled [Soft Multi Rough Set Topology with Applications to Group Decision Making](#)
18. Mahwish Sohail, M.Phil Mathematics (2017-2019)
Thesis titled [Soft Expert Topology and its Applications to Multi-Attribute Decision Making](#)
19. Atiqa Firdous, M.Phil Mathematics (2016-2018)
Thesis titled [Certain Properties of Soft Rough Set Topology with Decision Making Problems](#)
20. Atiqa Fakhar, M.Phil Mathematics (2016-2018)
Thesis titled [Properties of Hesitant Fuzzy Soft Topology with Multi-Attribute Decision Making Methods](#)
21. Nabeela Wali, M.Phil Mathematics (2016-2018)
Thesis titled [Soft Multi-Set Theory and Soft Multi-Set Topology with Applications](#)
22. Amna Mushtaq, M.Phil Mathematics (2016-2018)
Thesis titled [Certain Properties of Intuitionistic Fuzzy Soft Topology](#)
23. Masooma Raza Hashmi, M.Phil Mathematics (2015-2017)

Thesis titled [Properties of Fuzzy Parameterized Fuzzy Soft Topology](#)

24. Zain Fatima, **M.Phil Mathematics (2014-2016)**

Thesis titled [Some Properties of Soft Cone Metric Spaces](#)

Research Supervision (other students)

25. **Anam Aslam**, M.Phil Mathematics (2015-2017), Thesis titled “Soft Topology and Soft Separation Axioms”. Department of Mathematics, University of Lahore.
26. **Sana Pervez**, M.Phil Mathematics (2015-2017), Thesis titled “Properties of soft connected and Soft Compact Spaces”. Department of Mathematics, University of Lahore.
27. **Khalid Naeem**, M.Phil Mathematics (2014-2016), Thesis titled “Soft Set Theory and Soft Sigma Algebras”. Department of Mathematics, University of Lahore
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