

DEPARTMENT OF MATHEMATICS & STATISTICAL SCIENCES

RESEARCH OUTPUT OF THE DEPARTMENT OF MATHEMATICS & STATISTICAL SCIENCES

CATEGORY	2023 (Actual)	2024 (On-going)
HEC W Category/Impact Factor Journal Articles	8	12
HEC X and Y Category Journal Articles	5	4
ABDC/ABS/ MLA Journal Articles	0	0
Books	1	1
Book Chapters	1	1
National Conference Papers	0	1
International Conference Papers	0	1
Case Studies	0	0
Lahore School Working Papers / International Working Papers	3	6
Artistic productions (catalogued)	0	0
MS Research Projects Supervised	0	0
MPhil Theses supervised (Completed)	0	0
MPhil Theses supervised (On-going)	0	0
PhD Theses supervised (Completed)	0	0
PhD Theses supervised (On-going)	0	0

RESEARCH PUBLICATIONS (ACTUAL 2023 & ON-GOING 2024)**Actual 2023 (Author/s, Title of Publication, Journal, Year)****HEC W Category/Impact Factor Journal Articles**

1. Beg, I., Bisht, M. and Rawat. S.: Ranking approach for generalized intuitionistic fuzzy numbers and its application in transportation problems, Computational and Applied Math., 42(2023), Article 329 (HEC W Category)
2. Beg, I., M. Abbas and M.W. Asghar: Approximation of the solution of split equality fixed point problem for family of multivalued demicontractive operators with application, Σ -Mathematics, 11 (2023) Id. 959 (HEC W Category)
3. Iuga, I. C., Rabab Mudakkar, S., & Dragolea, L. L. (2023). Time of COVID-19: stability analysis of stocks, exchange rates, minerals and metals markets. Economic research-Ekonomska istraživanja, 36(1), 1527-1548. (HEC W Category)
4. Khalid, A., Chaudhry, H. and Beg, I.: Dissilient interpersonal influences in social network analysis, Fuzzy Sets Systems, 46(7) (2023), Article 108499. (HEC W Category)
5. Mudakkar, S. R., & Uppal, J. Y. (2023). Identifying Winning Strategies for MFIs by Constructing Structured Mashup Indices. Global Business Review, 09721509221134256. (HEC W Category)
6. Naz, R., and Mariano, T., "Symmetry methods for a hyperbolic model for a class of populations." Applied Mathematics and Computation 439 (2023): 127640. (HEC W Category)
7. Naz, R., and Mariano, T., "The first integrals and closed-form solutions of a Susceptible Exposed-Infectious epidemic model." Mathematical Methods in the Applied Sciences 46, no. 4 (2023): 4352-4362. (HEC W Category)
8. Noor, Q., Rashid, T. and Beg, I.: Multi-attribute group decision making based on probabilistic dual hesitant fuzzy Maclaurin symmetric mean operators, Granular Computing 8(2023), 633-666. (HEC W Category)

HEC X and Y Category Journal Articles

1. Bartwal, A., Rawat. S., Beg, I.: Best proximity point for q-ordered proximal contraction in noncommutative Banach spaces, Applied General Topology, 24(1)(2023), 101-113 (HEC X Category)
2. Beg, I.: Faces in convex metric spaces, Proc. Romanian Acad. Sciences, (2023) 24(4) (2023), 321 327. (HEC X Category)
3. Beg, I.: Representation of a preference relation on convex metric spaces by a numerical function, Proc. Romanian Acad. Sciences, 24(1)(2023) 19-25. (HEC X Category)
4. Bisht, M., Beg, I. and Dangwal, R.: Optimal solution of pentagonal fuzzy transportation problem using a new ranking technique. Yugoslavia J. Operational Research, 33(4)(2023), 509-529. (HEC Y Category)
5. Usman, M., Razzaq, A., Raza, A. and Zaman, F. D., Optimal System, Group Invariant Solutions and Conservation Laws of the Non-linear Elastic Wave Equation and Damped Elastic Wave Equation, Journal of Prime Research in Mathematics, 19(1), 55 – 72, 2023 (HEC Y Category)

Book

1. Ali, A. Kanre ki Riwayat (Book)

Book Chapter

1. Beg, I., Book chapter; Bilevel Approach for E-Bidding auction with Regret Theory, Book Chapter in Real Life Applications of Multiple Criteria Decision-Making Techniques in Fuzzy Domain (Edited by Laxminarayan Sahoo, Tapan Senapati and Ronald R. Yager) ISBN 978-981-19-4928-9 Studies in Fuzziness and Soft Computing Series. Publisher Springer Nature Singapore Pte Ltd. 2023 (co-authors Rashid, T. and A. Mehboob). https://doi.org/10.1007/978-981-19-4929-6_15 (Book Chapter)

Lahore School Working Papers / International Working Papers

1. Beg, I., Gnanaprakasam. A. J. and Mani, G.: Common coupled fixed point theorem on fuzzy bipolar metric spaces, Int. J. Nonlinear Anal. Appl., 14(4) (2023), 77-85. (Working Paper)
2. Beg, I.: Core of a convex mixture set and convex functions, Gulf J. Math. 15(2) (2023), 15-24. (Working Paper)
3. Naz, R., Johnpillai. A., Mahomed, F. M. & Oame. A "The SIR epidemic model with diffusion and nonlinear incidence: a symmetry approach." Working paper <https://doi.org/10.21203/rs.3.rs-2820585/v3> (2023) (Working Paper)

Actual/On-going 2024 (Author/s, Title of Publication, Journal, Year)**HEC W Category/Impact Factor Journal Articles**

1. Chaudhry, A., Naz, R. "The closed-form solutions for a model with technology diffusion via Lie symmetries" (Impact Factor - Planned)
2. Iuga, I. C., Rabab Mudakkar, Does banking concentration affect the stability and profitability degree of the banking system? Evidence among post-communist European countries. (Impact Factor - Submitted)
3. Jillani, H., Chaudhry, M.N., and Jafri, S. R. On-Campus Drinking Water Choices in the Pakistani Higher Education Sector (Impact Factor – Planned)
4. Naz, N., & Jafri, S. R. Harnessing Household Economic Vulnerability: Evidence from a Developing Economy (Impact Factor - Submitted)
5. Naz, R., & Torrisi, M. "Lie symmetries and exact solutions of an epidemic model" (Impact Factor - Planned)
6. Naz, R., Johnpillai, A.G., & Mahomed F. M. "The exact solutions of a diffusive SIR model via symmetry groups" (Impact Factor - Planned)
7. Naz, R., Johnpillai. A., Mahomed, F. M. & Oame. A "The SIR epidemic model with diffusion and nonlinear incidence: a symmetry approach." (Impact Factor - Planned)
8. Naz, R., Wang, G., & Irum, S. "The Transmission Dynamics of Influenza Outbreak via closed-form solutions" (Impact Factor - Planned)
9. Rajput, L., Beg, I. and Kumar, S.: Spherical fuzzy analytic hierarchy process and linear assignment model based MCGDM method with its application in ranking of states for their business climate, Expert Systems with Applications, 238 (2024), Article 122247. (HEC W Category – Published)
10. Raza, A., & Kara, A. H. Higher Order Conservation Laws and their Flows (Impact Factor – Planned)
11. Raza, A., & Kara, A. H. One Dimensional Optimal System of Subalgebras Admitted by the Partial Differential Equations, De Gruyter Proceedings in Mathematics, 2024 (International Conference Paper – Symmetry 2024) (Impact Factor – Planned)

12. Raza, A., F.M. Mahomed and Zaman, F. D., General Classes of Invariant Solutions and Conservation Laws of Nonlinear Nerve Equation in Bio-membranes with Fourth Order Dispersion, (Impact Factor – Planned)

HEC X and Y Category Journal Articles

1. Beg, I., I. Eroglu and O. Valero: Fixed points on partially ordered quasi-metric space, Fixed Point Theory, accepted. (HEC X Category - Accepted)
2. Bisht, M., Beg, I. and Rawat. S.: A new method to solve matrix game with interval payoffs and its MATLAB Code, International Game Theory Review, accepted. (HEC Y Category - Accepted)
3. Raza, A., F.M. Mahomed, Zaman, F. D., and A.H. Kara, Symmetry Classification, Optimal Systems and Conservation Laws of Nonlinear Class of Wave Equations with Fourth Order Dissipation, Transactions of the Royal Society of South Africa, 2024 (HEC X Category - Accepted)
4. Raza, A., Sonia Naseer, Zaman, F. D. and A.H Kara, Optimal System and Conservation Laws for the Generalized Fisher Equation in Cylindrical Coordinates, Quaestiones Mathematicae, 1–18, 2024 (HEC X Category - Accepted)

Book Chapter

1. Beg, I., Book chapter; Interval-valued intuitionistic hesitant uncertain linguistic set and Choquet integral based TOPSIS method to MCGDM problems, Book Chapter in Decision Making and Decision Support in the Information and AI Era - Dedicated to Academician Florin Gheorghe Filip (Edited by Valentina Emilia Balas, Gintautas Dzemyda, Smaranda Belciug and Janusz Kacprzyk) Studies in Systems, Decision and Control (SSDC) book series. Publisher Springer 2024 (co-authors D.K. Joshi and Kumar, S.). (Book Chapter)

Lahore School Working Papers / International Working Papers

1. Beg, I., Gnanaprakasam. A. J. and Mani, G.: Fixed point on complex partial b-metric spaces with application to a system of Urysohn type integral equations, Novi Sad J. Math., (2024) published on line. (Working Paper – Published)
2. Beg, I., Roy, K. and Saha, M.: SJS-metric spaces; A survey, J. Nonlinear Sci. Appl., 17(1)(2024), 30–69. (Working Paper – Published)
3. Chaudhry, A., Naz, R., Asif, M., “Sustainable Economic Growth: An Integrated Framework Addressing Environmental Quality, Externalities, and Government Policies” (ITC Working Paper - Ongoing)
4. Naz, N., & Jafri, S. R. Immigrant attitudes and social well-being: A multilevel investigation Innovation and Technology Center (ITC), Working Paper 04-2023, Lahore School of Economics, 2023 (ITC Working Paper)
5. Naz, R., Omame, A., and Mariano, T., “Cost-Effectiveness Analysis of COVID-19 Vaccination : A review of some Vaccination Models”, Working paper <https://arxiv.org/abs/2401.02672> (2024) (Working Paper - Published)
6. T. Rashid, A. Mahboob and Beg, I.: A novel technique for solving the uncertainty under the environment of neutrosophic theory of choice, Tran. Fuzzy Sets Systems 3(1)(2024) in press. (Working Paper – In Press)