LIST OF RESEARCH PUBLICATIONS

Dr. Sajjad Haider Bhatti

- ## Published Articles

1) **Bhatti, S. H.**, Irfan, M., Shongwe, S. C., & Raza, M. A. (2025). At-site flood frequency analysis: evaluating some candidate probability models. *Polish Journal of Environmental Studies*, 1–12. **Published Online.** https://doi.org/10.15244/pjoes/205074

2) Irfan, M., Zunaira, F., Javed, M., Shongwe, S. C., **Bhatti, S. H.**, & Hussain, M. A. (2025). Advancements in Population Mean Estimation for Circular Systematic Sampling. *Contemporary Mathematics*, *6*(4), 5053–5072.

3) Raza, M. A., Sattar, A., Nawaz, T., Tahir, M. A., Farooq, M., & **Bhatti, S. H.** (2025). Design and Implementation of an EWMA Control Chart for Zero-Inflated Count Data in High-Quality Processes. *Quality and Reliability Engineering International*, *41*(5), 2164–2181.

4) Aftab, M., Ahmad, T., Adeel, S., **Bhatti, S. H.,** & Irfan, M. (2025). Hyper-parameter tuning through innovative designing to avoid over-fitting in machine learning modelling: a case study of small data sets. *Journal of Statistical Computation and Simulation*, 95(7), 1595–1609.

5) **Bhatti, S. H.,** Umar, M., Shongwe, S. C., Irfan, M., & Hassan, M. U. (2025). Searching for the most suited distribution and estimation method for at-site flood frequency analysis: A case of the Chenab River. *Polish Journal of Environmental Studies*, *34*(1), 29–42.

6) **Bhatti, S. H.,** Irfan, M., Azeem, M., Javed, M., & Raza, M. A. (2024). Some modified estimators for efficient estimation of power function model. *Quality and Reliability Engineering International*, *40*(1), 550–560.

7) **Bhatti, S. H.,** Khan, F. W., Irfan, M., & Raza, M. A. (2023). An effective approach towards efficient estimation of general linear model in case of heteroscedastic errors. *Communications in Statistics - Simulation and Computation*, *52*(2), 392–403.

8) Hayat, H., Akbar, A., Ahmad, T., **Bhatti, S. H.**, & Ullah, M. I. (2023). Robustness to missing observation and optimalities of response surface designs with regular and complex structure. *Communications in Statistics - Simulation and Computation*, *52*(11), 5211–5230.

9) Raza, M. A., Iqbal, K., Aslam, M., Nawaz, T., **Bhatti, S. H.**, & Engmann, G. M. (2023). Mixed Exponentially Weighted Moving Average—Moving Average Control Chart with Application to Combined Cycle Power Plant. *Sustainability*, *15*(3239), 1–17.

10) Saeed, S., **Bhatti, S. H.**, Tanveer, Z., Akhtar, F., Ahmad, T., Raza, M. A., Khan, A., Parveen, M., & Bukhari, N. (2022). Obesity, smoking and stress: exploring correlates of stress. *Pak-Euro Journal of Medical and Life Sciences*, *5*(1), 177–182.

11) Irfan, M., Javed, M., & **Bhatti, S. H.** (2022). Difference-Type-Exponential Estimators Based on Dual Auxiliary Information Under Simple Random Sampling. *Scientia Iranica*, *29*(1), 343–354.

12) Raza, M. A., Aslam, M., Farooq, M., Khan, R. A. S., **Bhatti, S. H.**, & Ahmad, T. (2022). A New Nonparametric Composite Exponentially Weighted Moving Average Sign Control Chart. *Scientia Iranica*, *29*(1), 290–302.

13) Javed, M., Irfan, M., **Bhatti, S. H.**, & Onyango, R. (2021). A Simulation-Based Study for Progressive Estimation of Population Mean through Traditional and Nontraditional Measures in Stratified Random Sampling. *Journal of Mathematics*, *2021*, 1–16.

14) **Bhatti, S. H.**, Azeem, M., Ahmad, T., & Raza, M. A. (2021). Modified moment estimators based on non-conventional measures for the power function distribution. *Journal of Statistical Computation and Simulation*, *91*(15), 3048–3068.

15) Irfan, M., Javed, M., Shongwe, S. C., Zohaib, M., & **Bhatti, S. H.** (2021). Estimation of Population Median under Robust Measures of an Auxiliary Variable. *Mathematical Problems in Engineering*, *2021*, 1–14.

16) Hussain, S., **Bhatti, S. H.**, Ahmad, T., & Shehzad, M. A. (2021). Parameter estimation of the Pareto distribution using least squares approaches blended with different rank methods and its applications in modeling natural catastrophes. *Natural Hazards*, *107*(2), 1693–1708.

17) Asim, M., Aftab, M., **Bhatti, S. H.**, Ahmad, T., Shah, S. M. A., & Akram, M. (2021). Identifying factors causing decline in physical functionality of geriatric population.

European Journal of Inflammation, *19*(1), 1–7.

18) Javed, M., Irfan, M., & **Bhatti, S. H.** (2021). On optimal classes of estimators in the presence of some non-sampling errors. *Journal of the National Science Foundation of Sri Lanka*, *49*(2), 281–294.

19) Irfan, M., Javed, M., **Bhatti, S. H.**, Raza, M. A., & Ahmad, T. (2020). Almost unbiased optimum estimators for population mean using dual auxiliary information. *Journal of King Saud University – Science*, *32*(6), 2835–2844.

20) Kousar, S., Khan, A. R., Ul Hassan, M., Noreen, Z., & **Bhatti, S. H.** (2020). Some best-fit probability distributions for at-site flood frequency analysis of the Ume River. *Journal of Flood Risk Management*, *13*(3), e12640.

21) Raza, M. A., Nawaz, T., Aslam, M., **Bhatti, S. H.**, & Sherwani, R. A. K. (2020). A new nonparametric double exponentially weighted moving average control chart. *Quality and Reliability Engineering International*, *36*(1), 68–87.

22) Aftab, M., Ramzan, A., **Bhatti, S. H.**, Ahmad, T., Raza, M. A., Shah, S. M. A., & Akram, M. (2019). Correlates of diabetic retinopathy: A case study. *Pakistan Journal of Pharmaceutical Sciences*, *32*(4 Suppl.), 1909–1912.

23) Aslam, M., Asif, M., Joiya, S. J., Altaf, S., & **Bhatti, S. H.** (2019). Establishing Growth Reference Charts for Head Circumference of the Pakistani Children, Using the Lambda-Mu-Sigma (LMS) Statistical Method. *Iranian Journal of Pediatrics*, *29*(3), e84970.

24) Bashir, A., Shehzad, M. A., Hussain, I., Rehmani, M. I. A., & **Bhatti, S. H.** (2019). Reservoir Inflow Prediction by Ensembling Wavelet and Bootstrap Techniques to Multiple Linear Regression Model. *Water Resources Management*, *33*(15), 121–5136.

25) **Bhatti, S. H.**, Hussain, S., Ahmad, T., Aftab, M., Raza, M. A., & Tahir, M. (2019). Efficient estimation of Pareto model using modified maximum likelihood estimators. *Scientia Iranica*, *26*(1), 605–614.

26) Tahir, M., Aslam, M., Hussain, Z., Abid, M., & **Bhatti, S. H.** (2019). Bayesian analysis of heterogeneous doubly censored lifetime data using the 3-component mixture of Rayleigh distributions: A Monte Carlo simulation study. *Scientia Iranica*, *26*(3), 1789–1808.

27) Taj, S., Ashfaq, U. A., Aslam, S., Ahmad, M., & **Bhatti, S. H.** (2019). Alpha-glucosidase activity of novel pyrazolobenzothiazine 5,5-dioxide derivatives for the treatment of diabetes mellitus. Invitro combined with molecular docking approach. *Biologia*, *74*(11), 1523–1530.

28) Ilyas, M., Ali, M. A., Awan, A. N., **Haider, S.**, & Shahid, A. (2019). Estimation of noise levels in the road side parks and study of its impacts on health of visitors in Faisalabad. *Earth Sciences Pakistan*, *3*(1), 14–22.

29) Abbas, N., **Bhatti, S. H.**, Shahzad, T., Mahmood, F., Azeem, F., Abbas, F., Hussain, S., & Hussain, S. (2019). Spatial Distribution of Isoproturon Dissipation in Varying Agricultural Lands and Characterization of an Isoproturon Degrading Bacterial Strain S29 from Genus Sphingobium. *International Journal of Agriculture & Biology*, *21*(3), 689–702.

30) **Bhatti, S. H.**, Hussain, S., Ahmad, T., Aslam, M., Aftab, M., & Raza, M. A. (2018). Efficient estimation of Pareto model: Some modified percentile estimators. *PLoS ONE*, *13*(5), e0196456.

31) Ahmad, T., Baig, S., Aslam, S., & **Bhatti, S. H.** (2018). Rehospitalization and Survival Analysis of Heart Failure Patients. *International Journal of Biology and Biotechnology*, *15*(2), 207–212.

32) Hussain, S., **Bhatti, S. H.**, Ahmad, T., Aftab, M., & Tahir, M. (2018). Parameter estimation of Pareto distribution: some modified moment estimators. *Maejo International Journal of Science and Technology*, *12*(01), 11–27.

33) **Bhatti, S. H.**, Aslam, M., & Bourdon, J. (2018). Market Returns to Education in Pakistan, Corrected for Endogeneity Bias. *The Lahore Journal of Economics*, *23*(1), 79–96.

34) Ahmad, T., Munir, A., **Bhatti, S. H.**, Aftab, M., & Raza, M. A. (2017). Survival analysis of heart failure patients: A case study. *PLoS ONE*, *12*(7), e0181001.

35) **Bhatti, S. H.**, Mamuna, H. I., Aftab, M., Aslam, M., Aslam, N., Shah, S. M. A., Ahmed, H., & Akram, M. (2017). Risk factors of neonatal mortality in Faisalabad, Pakistan. *Pakistan Journal of Pharmaceutical Sciences*, *30*(2 Suppl.), 663–665.

36) Sherwani, R. A. K., Raza, M. A., **Bhatti, S. H.**, Aftab, M., Ahmad, T., & Shaukat, M. S. (2017). Epidemiological Analysis of Infant Mortality in Rural Punjab of Pakistan. *Medical*

Forum Monthly, *28*(6), 35–39.

37) Abbas, N., Hussain, S., Azeem, F., Shahzad, T., **Bhatti, S. H.**, Imran, M., Ahmad, Z., Maqbool, Z., & Abid, M. (2016). Characterization of a salt resistant bacterial strain Proteus sp. NA6 capable of decolorizing reactive dyes in presence of multi-metal stress. *World Journal of Microbiology and Biotechnology*, *32*(11), 181.

38) **Bhatti, S. H.**, Bourdon, J., & Aslam, M. (2013). Economic Returns to Education in France : OLS and Instrumental Variable Estimations. *The Lahore Journal of Economics Economics*, *18*(2), 51–63.

39) Shah, A. A., & **Bhatti, S. H.** (2012). Generic Competences and Earnings for Health Graduates. *International Journal of Social Sciences and Education*, *2*(3), 499–509.

40) Shah, A. A., Syeda, Z. F., & **Bhatti, S. H.** (2012). Pocket Money as a proxy for Family Income. *International Journal of Social Sciences and Education*, *2*(4), 688–693.

- **Accepted Articles**

- **Articles under review**

1) Modeling daily rainfall patterns: A comparative study of probability distributions in seven Swedish cities
   Journal: Urban Water Journal
   Authors: Mahmood Ul Hassan; Talha Omer; **Sajjad Haider Bhatti**; Aziz Mensah; Zahra Noreen

2) Dealing problem of multicollinearity in linear regression: performance comparison of a new ridge estimator under different error structures

   Journal: Journal of Statistical Computation and Simulation
   Authors: Mohsin Jamil; Sohail Chand; **Sajjad Haider Bhatti;** Muhammad Luqman

3) Robust regression-based ratio-type estimators in simple, ranked-set, median ranked-set sampling: Applications in sustainable agriculture

   Journal: Scientia Iranica

Authors: Muhammad Irfan; Farooq Ahmed; Maria Javed; **Sajjad Haider Bhatti;** Muhammad Ali Hussain

4) Outlier-resilient modified maximum likelihood estimators for power function distribution with an application in modelling wind speeds

Journal: Quality and Reliability Engineering International

Authors: Demet Aydin; **Sajjad Haider Bhatti**

5) Improved regression estimators using robust regression methods under different sampling designs

Journal: Science Progress

Authors: Muhammad Irfan; Farooq Ahmad; Maria Javed; Walid Emam; **Sajjad Haider Bhatti;** Muhammad Ali Hussain

6) Addressing multicollinearity in general linear model: A novel approach for ridge parameter with performance comparison

Journal: PLOS One

Authors: Muhammad Luqman; **Sajjad Haider Bhatti;** Demet Aydin; Mohsin Jamil