# SAIMA AFZAL

## ADDRESS AND PERSONAL DETAILS

Associate Professor (HEC Approved Supervisor)
Department of Statistics
Bahauddin Zakariya University, Multan
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## EDUCATION

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|---|---|
| 2012-2016 | Ph. D in Statistics, Bahauddin Zakariya University, Multan |
| 2003-2005 | M. Phil in Statistics, Bahauddin Zakariya University, Multan |
| 1993-1995 | M. Sc in Statistics, Bahauddin Zakariya University, Multan |

## AWARDS / HONORS

1st position in M. Phil. Statistics
3rd position in M. Sc. Statistics
President Talent Scholarship at B. Sc. Level

## RESEARCH INTERESTS

Multivariate Analysis, Dimension Reduction, Applied Statistics , Data Mining, Machine Learning and Time Series Analysis

## EXPERIENCE

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|---|---|
| 02/09/2025 to Date | Associate Professor, Bahauddin Zakariya University, Multan |
| 01/11/2017 to 01/09/2025 | Assistant Professor, Bahauddin Zakariya University, Multan |
| 21/04/2004 to 31/10/2017 | Lecturer, Bahauddin Zakariya University, Multan |
| 16/05/1997 to 20/04/2004 | Lecturer, College, Punjab Education Department |

## STUDENTS SUPERVISED

M. Phil: 24
Ph. D: 01

## WORKING UNDER SUPERVISION

M. Phil: 01
Ph.D: 02

## COURSES TAUGHT

- Advance Multivariate Analysis (Ph.D.)
- Applied Multivariate Analysis (M.Phil. , M.Sc. and Undergraduate)
- Time Series Analysis (Undergraduate)
- Econometrics (Undergraduate)
- Non Parametric Methods (Undergraduate)
- Population Studies (Undergraduate)
- Data Management (Undergraduate)
- Application of Information and Communication Technologies (Undergraduate)
- Basic Statistical Inference (Undergraduate)
- Introduction to Probability and Probability Distributions (Undergraduate)
- Introduction to Statistics (Undergraduate)
- Statistical Methods (M.Sc.)

**PROFESSIONAL SERVICES**

- Reviewer for Journal of Applied Statistics, Hacettepe Journal of Mathematics & Statistics, Journal of Modern Applied Statistical Methods, International Journal Of Finance & Economics
- Member Departmental Admission Committee
- Coordinator BS-Statistics Program
- Departmental Focal Person for CMS/LMS

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**JOURNAL PUBLICATIONS**

1. Naseer, S., Afzal**, S.,** & Afzal, A. (2026). RICR: ridge-guided independent component regression for handling high-dimensional multicollinear data. Journal of Statistical Computation and Simulation
2. Ali, S., Afzal, S., & Saleem, N. (2025). Using independent components for estimating logistic regression with high-dimensional multicollinear data: Simulation and application. *Social Sciences Spectrum*, 4(2), 288–316.
3. Afzal, S., Hayat, A., Amin, M., Afzal, A., & Gardezi, S. (2024). Exploring Spatial Variability and Yield-Determining Factors in Cotton Production: A Multivariate Analysis. *Communications in Soil Science and Plant Analysis*, 55(20), 3117–3132.
4. Afzal, S., Iqbal, M. M., Afzal, A., Bakouch, H. S., & Aljeddani, S. M. A. (2023). Novel Approaches to Identify Clusters Using Independent Components Analysis with Application. *Mathematical Problems in Engineering*, 2023, Article ID 4830716.
5. Majid, A., Aslam, M., Ahmad, S., Altaf, S., & Afzal, S. (2022). Robust estimation of the distributed lag model with multicollinearity and outliers. *Communications in Statistics - Simulation and Computation*, 53(8), 3933–3947.
6. Amin, M., Afzal, S., Akram, M. A., Muse, A. H., Tolba, A. H., & Abushal, T. A. (2022). Outlier detection in gamma regression using Pearson residuals: Simulation and an application. *AIMS Mathematics*, 7(8), 15331–15347.
7. Akram, M. N., Amin, M., Lukman, A. F., & Afzal, S. (2022). Principal component ridge type estimator for the inverse Gaussian regression model. *Journal of Statistical Computation and Simulation*, 92(10), 2060–2089.
8. Afzal, S., Afzal, A., Amin, M., Saleem, S., Ali, N., & Sajid, M. (2021). A Novel Approach for Outlier Detection in Multivariate Data. *Mathematical Problems in Engineering*, 2021, Article ID 1899225.
9. Akram, M. N., Amin, A., Amanullah, M., & Afzal, S. (2021). Modified ridge-type estimator for the inverse Gaussian regression model. *Communications in Statistics - Theory and Methods*, 52(10), 3314–3332.
10. Afzal, B., Roberts, A., Afzal, S., & Iqbal, M. M. (2021). Knowledge, Attitude & Perception of Type-2 Diabetics about Hypoglycemia in Laeeque Rafiq Hospital, Multan, Pakistan. *Sukkur IBA University Research Journal (SURJ)*, 53(1), 31–36.
11. Afzal, S., Iqbal, M. M., & Afzal, A. (2021). On the Number of Independent Components: An Adjusted Coefficient of Determination based Approach. *Electronic Journal of Applied Statistical Analysis*, 14(1), 13–27.
12. Amin, M., Qasim, M., Afzal, S., & Naveed, K. (2020). New ridge estimators in the inverse Gaussian regression: Monte Carlo simulation and application to chemical data. *Communications in Statistics - Simulation and Computation*, 51(10), 6170–6187.
13. Naveed, K., Amin, M., Afzal, S., & Qasim, M. (2020). New shrinkage parameters for the inverse Gaussian Liu regression. *Communications in Statistics - Theory and Methods*, 51(10), 3216–3236.
14. Amin, M., Qasim, M., Amanullah, M., & Afzal, S. (2020). Performance of Some Ridge Estimators for the Gamma Regression Model. *Statistical Papers*, 61, 997–1026.

15. Hayat, A., Amin, M., & Afzal, S. (2020). Statistical investigation to explore the impact of soil and other characteristics on cotton yield. *Communications in Soil Science and Plant Analysis*, 51(11), 1434–1442.
16. Iqbal, M. M., Rasool, S., & Afzal, S. (2017). Controlled Data: Generation, Testing, Modeling and Impact Gauging. *Sukkur IBA University Research Journal (SURJ)*, 49(1), 81–86.
17. Iqbal, M. M., Khurram, H., & Afzal, S. (2016). A New Way to Identify the Family of Continuous Probability Distributions and Estimation of Population Parameter(s). *Sukkur IBA University Research Journal (SURJ)*, 48(4), 711–716.
18. Iqbal, M. M., Ghaffari, A. S., & Afzal, S. (2016). Statistical Analysis of the Results of General Elections 2013 in Pakistan. *Pakistan Journal of Social Sciences*, 36(1), 573–584.
19. Afzal, S., & Iqbal, M. M. (2016). A new way to order independent components. *Journal of Applied Statistics*, 43(9), 1753–1764.
20. Iqbal, M. M., Sultan, S., & Afzal, S. (2015). Gauging and Comparing Level of Environmental Literacy: A Case of Southern Punjab. *Pakistan Journal of Social Sciences*, 35(2), 839–848.