

Dr. Said Farooq Shah

Department of Statistics
University of Peshawar
Pakistan

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Current Position

Lecturer, Department of Statistics, October 2016-Present

University of Peshawar, Peshawar, Pakistan

Education

1. **PhD in Statistics (2019)** from *Quaid-i-Azam University, Islamabad, Pakistan*
Dissertation: “Topics in Qualitative Randomized Response Modeling”
Supervisor: Prof. Dr. Zawar Hussain
Foreign Reviewers: (i) Prof. Dr. Winfried Stute, and (ii) Prof. Dr. Pranesh Kumar
Local Reviewers: (i) Prof. Dr. Muhammad Aslam, and (ii) Dr. Tahir Mehmood
2. **MPhil in Statistics (2013)** from *Quaid-i-Azam University, Islamabad, Pakistan*
Dissertation: “The Weibull Distribution for Paired Comparison Modeling and the Bayesian Analysis of Developed Model”
Supervisor: Prof. Dr. Muhammad Aslam
3. **MSc in Statistics (2011)** from *Quaid-i-Azam University, Islamabad, Pakistan*
4. **BSc with majors in Computer Science, Mathematics, and Statistics (2008)** from *University of Malakand, Chakdara, KP, Pakistan*

Teaching Experience

1. **Department of Statistics, University of Peshawar, Pakistan**
Lecturer since 2016: (i) Teaching to Graduate and Undergraduate classes (ii) Supervising Undergraduate, MPhil and PhD research scholars
2. **Federal Urdu University of Science and Technology, Islamabad, Pakistan**
Visiting Lecturer, 2015
3. **FAST National University of Emerging Sciences, Islamabad, Pakistan**
Visiting Lecturer, 2016
4. **Riphah International University, Islamabad, Pakistan**
Course Supervisor
Visiting Lecturer, 2016-2017
5. **National University of Science and Technology, Islamabad, Pakistan**

Visiting Lecturer, 2015-2016

Related Professional Experience

- Worked as a **Research Associate** for two years (September 2013 to September 2015) in Department of Mathematics and Statistics, International Islamic University, Islamabad.
- Served as a **Statistician and Data Analyst** at AAN Associates Islamabad for two months on UNICEF projects.
- Member of the Board of Studies of the Department of Economics, University of Swabi, Swabi, Pakistan; for the period, 2022 to 2024.
- **Viva Examiner** for hiring Subject Specialist (BPS-17) and Lecturers in Statistics (BPS-17) in Khyber Pakhtunkhwa Public Service Commission, Pakistan.
- **Reviewer** of various scientific research journals of Statistics, Mathematics and Social Sciences
- **Member** of the National Advisory Board of the journal “*Statistics, Computing and Interdisciplinary Research*” Since 2020.

Computer Skills

MS Excel

R-Language

IBM SPSS Statistics

Wolfram Mathematica

Duties at the Department of Statistics, University of Peshawar

- Teaching (i) Basic Statistics (ii) Sampling (iii) Operation Research and (iv) Time Series Analysis, to Postgraduate, Graduate, and Undergraduate classes
- Supervision of the MPhil and PhD research students
- Convener of the Anti-Harassment Committee
- Member of the Finance and Purchase Committee
- Assistant coordinator of the MPhil and PhD programs
- In-charge of the computer lab
- Managing the Population Research Center (PRC) Peshawar

Trainings and Workshops

- ❖ University of Utah and Pakistan Academy of Sciences’ **Workshop** on Faculty Development, August 10-11, 2017, Islamabad.
- ❖ **Training** on effective implementation of ‘protection against harassment of women at workplace, act 2010’, August 3 to 5, 2018, Islamabad.
- ❖ Virtual Training on “Understanding Harassment, Legal Provisions and Roles of Duty Bearers & the Right Holders” September 7, 2020 |10:00 am, University of Peshawar, Peshawar.
- ❖ **Training** on Demographic Analysis and Population Projections (DAPPS), by UNFPA, September 25 to 29, 2023, Abbottabad.
- ❖ **Training** module on Adopting a Gender-focused Research Methodology, by Population Council Pakistan, October 4-7, 2023, Islamabad.
- ❖ An Inter-Provincial **Workshop** of Population Research Centers (PRCs), 2023 Past, Present and Future of Population Studies and Demographic Research, *Host Institution: Centre of Excellence on Population and Wellbeing Studies (CePwS), School of Social Sciences and Humanities (S3H), National University of Sciences and Technology (NUST) Islamabad*. Date 30th November and 1st December 2023.
- ❖ A 3-day **Training** on “Persuading with Data” by SDPI Pakistan and UNFPA Pakistan. Date 23rd – 26th September 2024 at Ramada Hotel, Lahore.
- ❖ Training on Survey methodologies, including sampling techniques, (ii) Questionnaire design/data collection tools and (iii) Data quality control measures; *By Pakistan Bureau of Statistics (PBS) and UNFPA Pakistan at Islamabad*; Date December 16 to December 19, 2024.
- ❖ An Inter-Provincial Workshop of Population Research Centers (PRCs), 2024 Population and Demographic Research in Pakistan: Data Scarcity or Lack of Priority. *Host Institution: Centre of Excellence on Population and Wellbeing Studies (CePwS), School of Social Sciences and Humanities (S3H), National University of Sciences and Technology (NUST) Islamabad*. Date 19th December and 20th December 2024.
- ❖ Organized one day workshop on “Data Merging and Analysis of PDHS and PDS Datasets Using SPSS and R”, at the *Population Research Center Peshawar*, Date 12th February 2025.

Graduate Research Supervision

Student Name	Programme	Thesis Title	Status	Year	Role
Nida khan	PhD	Development of efficient estimators for sensitive proportion and its monitoring through control charts	Completed	2022	Co-supervisor

Neelam	PhD	Development of New Efficient Randomized Response Techniques and its Comparisons with Different Existing Models	Completed		Co-supervisor
Aimel Zafar	PhD	Advancing the analysis of regression to the mean: classical and Bayesian approaches	Ongoing		supervisor
Neelam	MPhil	Development of efficient estimators for sensitive proportion and mean in sample surveys	Completed	2020	Co-supervisor
Syed Fasih Ullah	MPhil	Statistical Modelling of the Contraceptive Prevalence Rate in Pakistan using Sampling Weights from PDHS 2019	Completed	2022	Co-supervisor
Maher Ali	MPhil	A study of consumption of safe drinking water and its determinants through weighted multinomial logistic model	Completed	2023	Supervisor
Yasir Khan	MPhil	Development of efficient imputation methods based on k nearest neighbors	Completed	2023	Supervisor
Rida Batool	MPhil	Exploring Respondent Behavior in Complex Surveys: An Analysis using Machine Learning Models	Completed	2023	Supervisor

Qazi Wajih Ur Rehman	MPhil	Assessing the Impact of Calf Feedlot Fattening Project on Farmers in District Peshawar: A Study of Motivations, Benefits, and Challenges	Completed	2023	Supervisor
Hassan Yar Ud Din	MPhil	Modeling of Stress and its Coping Techniques using Random Forest - A Case Study of Undergraduate Students in District Peshawar	Completed	2023	Supervisor
Salman Rauf	MPhil	Forecasting of Wheat Production in Pakistan using Machine Learning Techniques	Completed	2024	Supervisor
Muhammad Haroon	MPhil	Assessing the Quality of Survey based Demographic data in Pakistan: Statistical techniques, Analysis and Current state	Completed	2024	Supervisor
Abbas Ali	MPhil	Small area estimation of fertility rates for Pakistan	Completed	2024	Supervisor
Musa Khan	MPhil	Development of enhanced randomised response technique and exploring its applicability in Pakistan's national level surveys	Completed	2024	Supervisor
Ashfaq Ahmad	MPhil	Household determinants of diarrhoea among children in Pakistan	Ongoing		Supervisor

Summiya Bibi	MPhil	Statistical analysis of occupational injuries among disabled persons in Pakistan	Completed		Supervisor
Meerullah	MPhil	Covid-19 impact on short-term inflation: a statistical analysis	Completed		Supervisor

Research Projects

1. Economic empowerment and socioeconomic integration of refugee women in Pakistan. Completed in 2024..
2. Early Marriage and its Socioeconomic Consequences in Ex-FATA: A Comprehensive Analysis of Labor Force Participation, and Financial Autonomy.
3. Data Quality and Privacy in Pakistan's Official Statistics: Challenges and Solutions.

Scholarly Publications

26. **Shah, S. F.** & Ali, M. (2022). Knowledge of ovulatory cycle and decision making among the women in Pakistan. *International Journal of Women Health* (submitted)
25. Arbab, N., **Shah, S. F.**, & Asim, S. M. (2021). Enhancing the efficiency of estimates in Qualitative randomized response technique. *Sankhya B* (under review)
24. **Shah, S. F.**, Khan, N. Asim, S. M., & Riaz, M., (2022) P control charts for monitoring of sensitive attributes using differentially private responses. *Iranian Journal of science and technology-A* (Submitted).

List of Published and Accepted Journal Articles:

27. Khan, M., **Shah, S. F.**, & Javeed, M. (2025). Development of enhanced randomized response technique for estimating the mean of sensitive characteristics in sample surveys. *Communications in Statistics-Simulation and Computation*, 1-19.

26. Osama, M., Javed, M., **Shah, S. F.**, & Burki, I. (2025). A Novel Flexible Exponentiated XLindley Distribution with applications to Modeling COVID-19 Mortality and Precipitation. *Journal of Probability and Statistical Science*, 23(1).
25. Javed, M., **Shah, S. F.**, Osama, M., Atif, M., & Farooq, M. (2025). New Bivariate Type-2 Gumbel Distribution Based on the Farlie--Gumbel--Morgenstern Copula: Properties and its Application In Survival Analysis. *Applications & Applied Mathematics*, 20(2).
24. Khan, Y., **Shah, S. F.**, & Ali, M. (2026). Enhancing imputation accuracy of weighted K-nearest neighbor algorithm using non-Gaussian kernel functions. *International Journal of Data Science and Analytics*, 21(1), 72.
23. Hafeez, W., Aziz, N., Shabbir, J., **Shah, S. F.**, & Khan, A. A. K. A. (2025). Construction of Quality Regions Based on Consumer's and Producer's Risks for Two-Sided Group Chain Sampling Plan with Binomial Distribution. *Thailand Statistician*, 23(2), 407-419.
22. Hafeez, W., Aziz, N., **Shah, S. F.**, & Khan, A. A. (2025). Designing Bayesian Modified Group Chain Sampling Plan for Quality Regions Based on Average Number of Defectives. *Thailand Statistician*, 23(1), 228-242.
21. Ali, A., Arsh, A., Rahman, G., Haq, I. U., & **Shah, S. F.** (2024). Wheelchair users function and satisfaction with modified wheelchair and intermediate wheelchair services in Pakistan. *Assistive Technology*, 1-9.
20. Khan, Y. **Shah, S. F.** & Aim, S. M. (2024). A Novel K-Nearest Neighbors Algorithm for Missing Data Imputation. *Journal of Applied Statistics*, <https://doi.org/10.1080/02664763.2024.2414357>.
19. Ali, M., **Shah, S. F.**, Khan, Y., Asim, S. M., & Ullah, S. F. (2023). A study on the consumption of safe drinking water and its determinants using the weighted multinomial logistic model. *AQUA—Water Infrastructure, Ecosystems and Society*, 72(12), 2422-2445.
18. Ali, R., Bashir, K., Ahmad, S., Ullah, A., **Shah, S. F.**, Ali, Q., & Ahmad, A. (2023). Bioremediation of Heavy Metals from Industrial Effluents Using *Bacillus pakistanensis* and *Lysinibacillus composti*. *Sustainability*, 15(9), 7591.
17. Javed, M., Asim, S. M., Khalil, A., **Shah, S. F.**, & Almaspoor, Z. (2022). New Rayleigh Flexible Weibull Extension (RFWE) Distribution with Applications to Real and Simulated Data. *Modelling and Simulation in Engineering*, 2022.

16. Khan, N., **Shah, S. F.**, & Asim, S. M. (2022). Efficient Bayes estimators of sensitive proportion with simple and mixture priors using direct and indirect responses. *Communications in Statistics-Theory and Methods*, 1-30.
15. Omer, T., Hussain, Z., Qasim, M., **Shah, S. F.**, & Khan, A. A. (2021). Two Different Classes of Shrinkage Estimators for the Scale Parameter of the Rayleigh Distribution. *Journal of Modern Applied Statistical Methods*, 19(1), 8.
14. Farooq, M., Zaman, Q., Ijaz, M., **Shah, S. F.**, & Kilai, M. (2021). A novel approach to increase the goodness of fits with an application to real and simulated data sets. *Mathematical Problems in Engineering*, 2021, 1-11.
13. Asif, M., Hussain, Z., Asghar, Z., Hussain, M. I., Raftab, M., **Shah, S. F.**, & Khan, A. A. (2021). A statistical evidence of power law distribution in the upper tail of world billionaires' data 2010–20. *Physica A: Statistical Mechanics and its Applications*, 126-198.
12. Khan, P., Khan, Y., & **Shah, S. F.** (2021). Statistical Analysis of Yearly Consumption Expenditure of the Household on Durable, Non-Durable Goods and Services in Pakistan. *STATISTICS, COMPUTING AND INTERDISCIPLINARY RESEARCH*, 3(2), 13-37.
11. **Shah, S. F.**, Hussain, Z., Riaz, M., & Cheema, S. A. (2020). Shewhart-type charts for Masked Data: A Strategy for Handling the Privacy Issue. *Mathematical Problems in Engineering*, 2020.
10. Aslam, M., Asghar, Z., Hussain, Z., & **Shah, S. F.** (2020). A modified TX family of distributions: classical and Bayesian analysis. *Journal of Taibah University for Science*, 14(1), 254-264.
9. Aslam, M., Ley, C., Hussain, Z., **Shah, S. F.**, & Asghar, Z. (2020). A new generator for proposing flexible lifetime distributions and its properties. *PloS one*, 15(4), e0231908.
8. **Shah, S. F.**, Cheema, S. A., Hussain, Z., & Shah, E. A. (2020). Masking data: a solution to social desirability bias in paired comparison experiments. *Communications in Statistics-Simulation and Computation*, 1-19.
7. **Shah, S. F.**, & Hussain, Z. (2019). An Application of Hermite Distribution in Sensitive Surveys. *Journal of Statistical Theory and Applications*, 18(4), 361-366.
6. **Shah, S. F.**, Hussain, Z., & Cheema, S. A. (2019). Combining answers to direct and indirect questions: An implementation of Kuk's randomized response model. *Communications in Statistics-Theory and Methods*, 1-17.

5. Asmat, A., Ali, U., & **Shah, S. F.** (2017). Permissive parenting style of parents predicting psychopathology in their children. *Journal of Pakistan Psychiatric Society*, 14(1).
4. Pervez, Z., **Shah, S. F.**, Hussain, Z., & Philippou, A. N. (2017). An application of negative binomial distribution of order k in sensitive surveys. *Communications in Statistics-Simulation and Computation*, 46(8), 6654-6660.
3. Hussain, Z., Shabbir, J., Pervez, Z., **Shah, S. F.**, & Khan, M. (2017). Generalized geometric distribution of order k: A flexible choice to randomize the response. *Communications in Statistics-Simulation and Computation*, 46(6), 4708-4721.
2. Hussain, Z., Pervez, Z., **Shah, S. F.**, & Shabbir, J. (2015). Estimation of sensitive proportion using moment generating. *Sci. Int. (Lahore)*, 27(4).
1. Ahmad, I., **Shah, S. F.**, Mahmood, I., & Ahmad, Z. (2013). Modeling of monsoon rainfall in Pakistan based on Kappa distribution. *Sci. Int. (Lahore)*, 25(2), 333-336.