# Dr. Md. Shohel Rana

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## EDUCATION

| Examination | Institutions | Board/ University | Group/ Department | Result (GPA/CGPA) | Passing Year |
|---|---|---|---|---|---|
| SSC | Gossainbari A.A. High School, Dhunat, Bogura | Rajshahi | Science | 4.69 (5.00) | 2004 |
| HSC | Govt. Azizul Haque College, Bogura | Rajshahi | Science | 4.90 (5.00) | 2006 |
| B.Sc | Jahangirnagar University, Savar, Dhaka-1342, Bangladesh | Jahangirnagar University | Statistics | 3.77 (4.00) | 2010 |
| M.Sc | Jahangirnagar University, Savar, Dhaka-1342, Bangladesh | Jahangirnagar University | Statistics | 3.77 (4.00) | 2011 |
| PhD | Islamic University, Kushtia-7003, Bangladesh | Islamic University, Kushtia-7003, Bangladesh | Statistics | Awarded | 2023 |

## RESEARCH INTERESTS

- **Methodology:** Stochastic Modeling and Analysis, Applied Probability and Statistics, Simulation, Artificial Intelligence, Artificial Neural Networks, Game Theory, Time Series Analysis, Data Science and Bio-statistics.
- **Applications:** Stochastic Modeling and Analysis, Applied Probability and Statistics, Simulation, Artificial Intelligence, Artificial Neural Networks, Game Theory, Time Series Analysis, Data Science, Bio-statistics.

## PUBLICATIONS

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|---|---|
| 1. | **Rana, M. S.,** & Rois, R. **(2014).** Stochastic Modeling of Branching Process Used in Insurance Companies. *World Journal of Pharmaceutical Research, New Delhi, India 3(10)*, 150-163. ISSN 2277– 7105, SJIF Impact Factor 5.045; DOI: 10.20959/wjpr201817-13184. |

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| 2. | Molla, M. R., **Rana, S.,** Hossain, S., & Nuruzzman, S. M. **(2016).** Modelling Monthly Precipitation in Faridpur Region of Bangladesh Using ARIMA. *Journal of Environmental Science, Toxicology and Food Technology*, *10*(6), 22-29. |
| 3. | Molla, M. R., Nuruzzaman, S. M., Hossain, M. S., & **Rana, S. (2016).** Performance Assessment of SARIMA Model with Holt–Winter's Trend and Additive Seasonality Smoothing Method on Forecasting Electricity Production of Australia an Empirical Study. *Global Journal of Researches in Engineering*, *16*(2), 6-11. |
| 4. | **Rana, M. S.,** & Saha, S. K. **(2018).** *On the evaluation of non-probability sampling and logistic regression model used in drug addiction*. *World Journal of Pharmaceutical Research, New Delhi, India, 7(17), 84-92*. ISSN 2277– 7105, SJIF Impact Factor 8.074; DOI: 10.20959/wjpr201817-13184 |
| 5. | **Rana, M. S.,** Rahman, M. M., & Hasnain, M. S. **(2018).** Comparison Study Between Independent Component Analysis and Principle Component Analysis in the Context of Hidden Source Separation. *World Journal of Pharmaceutical Research, New Delhi, India, 7(17), 178-196*. ISSN 2277– 7105, SJIF Impact Factor 8.074; DOI: 10.20959/wjpr201817-13437 |
| 6. | **Rana, M. S.,** & Zahan, S. **(2018).** Data Prediction from a Set of Sampled Data Using Artificial Neural Network in Matlab Simulink. *World Journal of Pharmaceutical Research, New Delhi, India*, 7(18), 333-352. ISSN 2277– 7105, SJIF Impact Factor 8.074; DOI: 10.20959/wjpr201818-13607 |
| 7. | **Rana, M. S.,** Molla, M. M. R., & Rahman, M. M. **(2020).** On A New Probability Distribution with Properties and Application. *Journal of Sciences*, *1*(2), 25-33. |
| 8. | Akter, S., Khan, M. A. I., **Rana, M. S.,** & Rahman, M. M. **(2021).** Cubic transmuted burr-xii distribution with properties and applications. *Journal of Statistics Applications and Probability Letters*, *1*, 23-32. |
| 9. | **Rana, M. S.,** Shahbaz, S. H., Shahbaz, M. Q., & Rahman, M. M. **(2022).** Pareto-weibull distribution with properties and applications: a member of pareto-X family. *Pakistan Journal of Statistics and Operation Research*, Vol.18 No.1 2022 pp 121-132, DOI: http://dx.doi.org/10.18187/pjsor.v18i1.3821 |
| 10. | **Rana, M. S.,** & Rahman, M. M. **(2022**). The Pareto-Exponential Distribution: Theory and Real-life Applications. *European Journal of Mathematics and Statistics*, *3*(3), 30-39. DOI: 10.24018/ejmath.2022.3.3.116 |
| 11. | Islam Khan, M. A., Alharthi, A. S., Aljohani, H. M., Jawa, T. M., Sayed-Ahmed, N., **Rana, M. S.,** & Rahman, M. M. **(2022).** Classical Inference of the Cubic Transmuted Lindley Distribution under Type-II Censored Sample. *Mathematical Problems in Engineering*, *2022*(1), 3543517. DOI: 10.1155/2022/3543517 |
| 12. | **Rana, M. S.,** Molla, M. M. R., & Rahman, M. M. **(2022).** The Pareto-Rayleigh Distribution: Theory with Some Real-life Applications. *European Journal of Mathematics and Statistics*, *3*(4), 27-36. DOI: 10.24018/ejmath.2022.3.4.131 |

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| 13. | Haque, A., **Rana, M. S.,** Soni, M., Muntaha, S., Uddin, M. K., Hossain, M. S., & Molla, M. M. R. **(2023).** Quantifying the Interconnection of Economic Growth and Key Macroeconomic Factors Using the VECM Perspective of Bangladesh. *European Journal of Statistics and Probability*, *11*(1), 39-53. Impact Factor: 6.90 Print ISSN: 2055-0154 Online ISSN: 2055-0162 |
| 14. | Nuruzzaman, M., Soni, M., Muntaha, S., **Rana, M. S.,** Haq, A., & Molla, M. M. R. **(2023).** Quantifying Trends of Historical Climatic Variables in the Jessore Region of Bangladesh. *Asian Journal of Probability and Statistics*, *25*(1), 89-99. |
| 15. | Nuruzzaman, M., Soni, M. S. M., **Rana, M. S.,** Hossain, M. S., & Molla, M. M. R. **(2023).** Forecasting Climatic Variables using Vector Autoregression (VAR) Model. *European Journal of Statistics and Probability*, *11*(1), 20-38. |
| 16. | Moral, M. A., **Rana, M. S**., & Rahman, M. M**. (2025).** The Arcsine Log-Logistic Distribution and Its Applications. *European Journal of Mathematics and Statistics*, *6*(2), 1-10. |
| 17. | Islam, M. H., & **Rana, M. S**. **(2025).** Prediction of Obesity among Adults and Adolescents Using a Machine Learning Approach. *International Journal of Mathematics And Computer Research*, ISSN: 2320-7167 *https://ijmcr.in/index.php/ijmcr/issue/view/147*, *13(5)*, 5144-5150. DOI: **10.47191/ijmcr/v13i5.01** |
| 18. | **Rana, M.S. (2025**). Stochastic Modeling of Markov Chain in Insurance Companies. International Journal of Engineering Research & Technology (IJERT), https://www.ijert.org/ ISSN: 2278-0181, An International Peer-Reviewed Journal Vol. 14 Issue 11 , November – 2025**, DOI:10.17577/IJERTV14IS110177** |
| 19. | **Rana, M. S.,** Lemon, M. M. H., & Piash, M. A. **(2026).** Transmuted Pareto Exponential Distribution and Its Applications. *Asian Journal of Probability and Statistics*, *28*(6), 90-110. DOI: https://doi.org/10.9734/ajpas/2026/v28i6907 |
| 20. | Lemon, M. M. H., Ahmed, S., Khatun, M. K., & **Rana, M. S. (2026).** Prevalence and severity of premenstrual tension syndrome and its impact on academic performance among female university students in Bangladesh: a cross-sectional study. *BMC Public Health*. https://doi.org/10.1186/s12889-026-28124-3 |
| 21. | Sakil, A. A., Hossain, M. M., Rimon, R. I., Rahaman, H., Nahid, R. S., & **Rana, M. S. (2026).** A Comprehensive Evaluation of Hepatitis B Awareness, Knowledge Gaps, Health-Seeking Behaviour, Risk Perceptions, and Vaccination Status Among University Students in Bangladesh: A Cross-Sectional Study. *Health Science Reports*, *9*(9), e73149. https://doi.org/10.1002/hsr2.73149 |

## WORKING PAPERS

1. The Pareto-Kumaraswamy Distribution along with Properties and Applications
2. The Pareto-Uniform Distribution along with Properties and Applications
3. Transform- Transformer (T-X) Family of distribution: A review
4. The Pareto-Gompertz distribution along with Properties and Applications
5. The Pareto-Burr XII distribution along with Properties and Applications
6. Underweight, overweight and obesity among women of reproductive age in Bangladesh: Prevalence and associated factors using BDHS 2022 data

## HONORS AND AWARDS

- Collecting Data from a Large Village after Census Enumeration in 2011 and Preparing a Report to Check the Changes of Information about Population.
- Scholarship (Results on B.Sc & M.Sc) from UGC of Bangladesh.
- Scholarship (Higher Educational) from Grameen Bank.
- Scholarship (Higher Educational) from Exim Bank.
- M.S Thesis on "On the Evaluation of Stochastic Modeling in the Context of Insurance Companies".
- PhD Thesis on "Pareto-X family of Distributions: Properties and Applications.

## TEACHING EXPERIENCE

| Position | Duration | Department/Institution | Subjects |
|---|---|---|---|
| Lecturer | (2013-2014) | Department of Statistics, IUBAT-International University of Business Agriculture and Technology, Uttara, Dhaka, Bangladesh. | ----- - |
| Lecturer | (2014-2017) | Department of Statistics, Islamic University, Kushtia-7003, Bangladesh. | ------ |
| Assistant Professor | (2017-2022) | Department of Statistics, Islamic University, Kushtia-7003, Bangladesh. | ------ |
| Associate Professor | (2022-present) | Department of Statistics, Islamic University, Kushtia-7003, Bangladesh. | ------ |

## PROFESSIONAL EXPERIENCE

| Position | Duration | Department/Institution | Subjects |
|---|---|---|---|
| Assistant Provost | Two Years | Sheikh Hasina Hall, Islamic University, Kushtia-7003, Bangladesh. | - |
| Assistant Provost | Two Years | Khaleda Jia Hall, Islamic University, Kushtia-7003, Bangladesh. | - |
| Assistant Provost | Two Years | Sddam Hossain Hall, Islamic University, Kushtia-7003, Bangladesh. | - |

## CONFERENCE/SEMINAR PRESENTATIONS

- M.S., Rana "Pareto-X Family of Distributions: Properties and Applications. *1'st Seminar*, June 31, 2022.
- M.S., Rana "Pareto-X Family of Distributions: Properties and Applications. *2'nd Seminar*, September 1, 2022.

## UNDER GRADUATE/MASTERS COURSEWORK

- **Department of Statistics:** Basic Statistics, Elements of Probability, Probability Distribution, Stochastic Process, Time Series Analysis, Quality Control, Operation Research, Demography, Epidemiology, Industrial Statistics, Design of Experiment, Statistical Inferences, Sampling Technique, Sampling distributions, Statistical modeling and Simulation, Multivariate Analysis, environmental Statistics, Regression Analysis, Order Statistics, Bioinformatics, Research Methodology.
- **Department of Mathematics:** Numerical Methods, Probability Theory, Probability and Measure Theory, Stochastic Processes, Calculus, Actuarial Statistics, Calculus, Differential Equation, Algebra and Discrete Mathematics, Mathematical Analysis, Matrix Algebra and its statistical Applications, Analytical Geometry, Linear Algebra.
- **Department of Computer Science:** Fundamental of Computer science, Artificial Neural Networks, Linear Programming, Data Mining, Programming with C and R.
- **Department of Economics:** Microeconomics, Planning, Development and Bangladesh Economy, Macroeconomics, Public Finance and Financial Economics, Econometrics.
- **Technical Writing:** Grant Proposal Writing, Writing for Scholarly Publications, Academic Writing.

## SKILLS

- Languages: Bangla (fluent), English (fluent)
- Programming Languages: C, R, PYTHON
- Operating Systems: Windows
- Statistics Software: SPSS, SAS
- Others: LaTeX, MS Office Applications

## PROFESSIONAL INFORMATION

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| **Name** | Md. Shohel Rana, PhD |
| **Father's Name** | Md. ShahAli Pkramanik. |
| **Mother's Name** | Mst. Soneka Khatun |
| **Permanent Address** | Vill: Gozaria, Post: Chikashi, Thana: Dhunat, Dist: Bogura. |
| **Nationality** | Bangladeshi (by birth) |
| **National ID** | 5537260936 |
| **Date of Birth** | 25/03/1989 |
| **Religion** | Islam |
| **Marital Status** | Married |

## REFERENCES

1. Md. Mahabubur Rahman, PhD
   Professor, Department of Statistics and Data Science
   Islamic University, Kushtia-7003, Bangladesh
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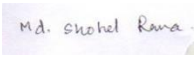
2. Md. Moyazzem Hossain, PhD
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4. Md. Rezaul Karim, PhD
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5. Md. Murad Hossain, PhD
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(Dr. Md. Shohel Rana)

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