

Md Abdul Basit

CONTACT INFORMATION	Department of Statistics North Carolina State University 2311 Stinson Drive, Raleigh, NC 27695-8203, USA email: mbasit@ncsu.edu web: statistics.sciences.ncsu.edu/people/mbasit
CITIZENSHIP	Bangladeshi
RESEARCH INTERESTS	Causal Inference, Design of Experiments, Machine Learning, Survival Analysis
EDUCATION	<p>North Carolina State University, USA Ph.D., Statistics Aug 2024 to Present</p> <p>University of Dhaka, Bangladesh M.S., Applied Statistics Jan 2022 to Mar 2021</p> <ul style="list-style-type: none">• Thesis topic: <i>"Sensitivity Analysis of Causal Effect Estimators in Observational Studies"</i> <p>University of Dhaka, Bangladesh B.S., Applied Statistics Jan 2016 to Dec 2019</p> <ul style="list-style-type: none">• Project topic: <i>"Assessing Vulnerability to Poverty Using Downside Mean Semi-deviation Approach: An Empirical Analysis on a Balanced Panel from Rural Bangladesh"</i>
ACADEMIC EXPERIENCE	<p>Institute of Statistical Research and Training, University of Dhaka, Bangladesh Lecturer of Applied Statistics and Data Science Jul 2022 to Present</p> <ul style="list-style-type: none">• Taught courses on advanced probability, stochastic processes, Python, and SQL• Prepared and reviewed of the curriculum of the new data science courses• Supervised a number of B.S. and M.S. project students• Conducted training sessions of R, SPSS, and STATA <p>BRAC James P Grant School of Public Health, BRAC University, Bangladesh External Teaching Fellow Apr 2021 to May 2021</p> <ul style="list-style-type: none">• Facilitated lab sessions and review classes on various topics related to Biostatistics• Evaluated students' project submissions and managed the course curriculum
INDUSTRY EXPERIENCE	<p>Pathao Limited, Dhaka, Bangladesh Lead Data Scientist (Part-time) Mar 2023 to July 2024</p> <ul style="list-style-type: none">• Building and managing a data science and analytics team for Pathao Fintech.• Consulting causal inference projects that include design and analysis of experiments and estimating causal effects from observational studies. <p>Pathao Limited, Dhaka, Bangladesh Data Scientist (Full-time) Dec 2021 to Jul 2022</p> <ul style="list-style-type: none">• Developing and implementing Machine Learning models for the underwriting system and credit limit adjustments for Pathao Buy Now Pay Later (BNPL)• Collaborating with the Data Engineering team to build data pipelines for Machine Learning model training and deployment• Designing and analyzing online controlled experiments to test hypotheses related to different product improvements and consumer behavior

HONORS, AWARDS	Dean's Honor Award , Faculty of Science, University of Dhaka, Bangladesh, 2023
	Provost Merit Award , Amar Ekushey Hall, University of Dhaka, Bangladesh, 2023
	Conference Fund for Developing Countries (CFDC) , The 44th Annual Conference of the International Society for Clinical Biostatistics (ISCB44), Milan, Italy, 2023
	Conference Fund for Developing Countries (CFDC) , The 43rd Annual Conference of the International Society for Clinical Biostatistics (ISCB43), Newcastle, United Kingdom, 2022
	Top Data Scientist Award , Robi Datathon 2.0, Dhaka, Bangladesh, 2022
RESEARCH EXPERIENCE	National Science and Technology Fellowship , Ministry of Science and Technology, Dhaka, Bangladesh, 2020
	Best Poster Presentation Award , The 2nd International Conference on Applied Statistics (ICAS2019), Dhaka, Bangladesh
	Estimating Causal Effects of Socio-economic Factors on Caesarean Section Delivery Rate in Bangladesh
	Principal Investigator: Mabub AHM Latif, Ph.D. Dec 2021 to Jul 2022
	<ul style="list-style-type: none"> Constructed Direct Acyclic Graphs (DAGs) reflecting the hypothesized causal relationships among various socio-economic factors and the decision of C-section delivery in Bangladesh Estimated causal effects using Inverse probability Weighting (IPW) estimators using Bangladesh Multiple Indicator Cluster Survey (2019) data Conducted sensitivity analysis to assess the sensitivity of the obtained causal conclusions to unmeasured confounding.
PUBLICATIONS, PREPRINTS	Sensitivity Analysis of Causal Effect Estimators in Observational Studies (M.S. Thesis)
	Supervisor: Mabub AHM Latif, Ph.D. Apr 2021 to Dec 2021
	Co-supervisor: Dr. Abdus S Wahed
	<ul style="list-style-type: none"> Developed a risk-ratio-based modified marginal sensitivity model to assess the robustness of the estimated causal effects to the presence of unmeasured confounding in observational studies with binary and multivalued treatments Conducted simulation studies that suggested good performance of the proposed sensitivity model in the presence of adequate overlap among the covariate distribution of the treatment groups
	Assessing Vulnerability to Poverty Using Downside Mean Semi-deviation Approach: An Empirical Analysis on a Balanced Panel from Rural Bangladesh (B.S. Project)
PUBLICATIONS, PREPRINTS	Supervisor: Dr. Israt Rayhan Mar 2019 to Sep 2019
	<ul style="list-style-type: none"> Estimated vulnerability to poverty, i.e., the risk of households being poor in the future using a two-round panel data from rural Bangladesh Conducted a simulation study to examine the performance of the constructed vulnerability index in predicting the poverty status of the households Constructed vulnerability maps to visualize the variation in vulnerability to poverty across different rural regions of Bangladesh.
	Basit, M. A., Latif, M. A., & Wahed, A. S. (2023). <i>Sensitivity Analysis for Causal Effects in Observational Studies with Multivalued Treatments</i> . arXiv preprint , arXiv:2308.15986.
	Basit, M. A., Latif, M. A., & Wahed, A. S. (2023). <i>A Risk-Ratio-Based Marginal Sensitivity Model for Causal Effects in Observational Studies</i> . arXiv preprint , arXiv:2309.15391.

Aziz, S., Basit, M. A., Sultana, S., Homer, C. S., & Vogel, J. P. (2022). *Inequalities in women's utilization of postnatal care services in Bangladesh from 2004 to 2017*. **Scientific Reports**, 12(1), 2747.

TALKS

"A Calibrated Sensitivity Model for Causal Effects in Observational Studies", The 44th Annual Conference of the International Society for Clinical Biostatistics (ISCB), Milan, Italy, 27 - 31 August, 2023.

"Sensitivity Analysis of Causal Effects in Observational Studies", The 43rd Annual Conference of the International Society for Clinical Biostatistics (ISCB), Newcastle, United Kingdom, 21 - 25 August, 2023.

"Assessing Vulnerability to Poverty Using Downside Mean Semi-deviation Approach: An Empirical Analysis on a Balanced Panel from Rural Bangladesh", The 2nd International Conference on Applied Statistics (ICAS2019), Dhaka, Bangladesh, 27 - 29 December, 2019.

COURSES TAUGHT

Graduate Courses

- CSE 530: Python for Data Science (University of Dhaka)
- MPH 521: Biostatistics (BRAC University)

Undergraduate Courses

- CSE 131: SQL for Data Science (University of Dhaka)
- AST 205: Introduction to Demography (University of Dhaka)
- AST 401: Advanced Probability and Stochastic Processes (University of Dhaka)

PROJECT SUPERVISION

So far I have supervised 8 students for their B.S. and M.S. projects in Applied Statistics at the University of Dhaka. My research students mainly work in the topics of biostatistics, public health, time series analysis, and causal inference.

SKILLS

Programming

- Proficient in: R, Python, SQL, Stata, SPSS
- Familiar with: C/C++, SAS, MATLAB

Document Preparation Systems

- Proficient in: LaTeX, Rmarkdown
- Familiar with: Microsoft Word

Languages

- Native: Bengali
- Fluent: English [TOEFL: 106 (R: 28, L: 29, S: 24, W: 25)]

PROFESSIONAL MEMBERSHIPS

- Life member, Bangladesh Statistical Association (BSA)
- Member, International Society for Clinical Biostatistics (ISCB) [Aug 2021 – Present]