Contact Information

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Research Interests

Bayesian modeling, models for editing erroneous data, multiple imputation, missing data, mixture models, and hierarchical modeling.

Education

Ph.D in Statistical Science, *Duke University* 2019
Dissertation: "Bayesian Models for Imputing Missing Data and Editing Erroneous Responses in Surveys"
Advisor: Jerome P. Reiter

M.S. in Statistical and Economic Modeling, *Duke University* 2015
Thesis: "A Comparison of Multiple Imputation Methods for Categorical Data"
Advisors: Jerome P. Reiter and Fan Li

B.Sc. in Mathematics and Statistics, *University of Lagos, Nigeria* 2010
First class honors

Research Experience

Research Assistant 2014 - 2019
Department of Statistical Science, Duke University
Supervisor: Dr. Jerome P. Reiter

Developed nonignorable models for simultaneously dealing with unit and item nonresponse in survey data using auxiliary marginal information. Developed edit-imputation model for handling both missing data and measurement error in household data with structural zeros. Conducted empirical comparison of multiple imputation methods for categorical data.

Summer Research Fellow Summer 2017
U.S. Food and Drug Administration
Office of Biostatistics, Center for Drug Evaluation and Research
Supervisors: Dr. Abel Eshete and Dr. Solomon Chefo

Evaluated several missing data methods, including multiple imputation and mixed effect models, for estimating drug effectiveness in clinical

trials data on ophthalmic drugs. Developed and implemented selection models for missing not at random imputations for mixed data.

Publications

Akande, O., Li, F. and Reiter, J. P. (2017), "An Empirical Comparison of Multiple Imputation Methods for Categorical Data", *The American Statistician*, 71:2, 162-170.

Akande, O., Barrientos, A. F. and Reiter, J. P. (2018), "Bayesian Simultaneous Edit and Imputation For Household Data with Structural Zeros", *Journal of Survey Statistics and Methodology*.

Akande, O., Reiter, J. P. and Barrientos, A. F. (2019), "Multiple Imputation of Missing Values in Household Data with Structural Zeros", *Survey Methodology*, forthcoming.

Articles in Preparation

Akande, O., Madson, G., Hillygus, D. S. and Reiter, J. P., "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys", in preparation.

Akande, O. and Reiter, J. P., "Multiple Imputation for Nonignorable Item Nonresponse in Complex Surveys Using Auxiliary Margins", in preparation.

Software Packages

NestedCategBayesImpute: Modeling & Generating Synthetic Versions of Nested Categorical Data in the Presence of Impossible Combinations (Wang, Q., Akande, O., Hu, J., Reiter, J.P. and Barrientos, A.,)

Conference Presentations

"Bayesian Simultaneous Edit and Imputation For Household Data with Structural Zeros"

- Joint Statistical Meetings (contributed talk), Vancouver, BC, Canada (2018)
- Advances in Interdisciplinary Statistics and Combinatorics, Greensboro NC (2018)

"Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys"

- Society for Political Methodology (poster), Brigham Young University, Utah (2018)

Teaching Experience

Instructor of Record

Department of Statistical Science, Duke University

STA 111: Probability and Statistical Inference — Summer 2018

Summer 2016
Summer 2014

A six-week summer introductory statistics class covering topics such as: basic laws of probability, random variables, maximum likelihood estimation, Bayesian inference, linear regression and analysis of variance, with emphasis on applications in social and natural science. Class meets every day for lectures and twice a week for labs.

Teaching Assistant
Department of Statistical Science, Duke University

STA 440: Case Studies (senior undergrad)	Fall 2018
STA 723: Statistics Case Studies (PhD level)	Spring 2018
STA 732: Theoretical Statistics (PhD level)	Spring 2017
STA 111: Probability and Statistical Inference	Spring 2014

Guest Lecturer
Department of Statistical Science, Duke University

STA 210: Regression Analysis (undergrad)	Fall 2018
STA 723: Statistics Case Studies (PhD level)	Spring 2018

Teaching Training

Duke Certificate in College Teaching Program — 2019

Coursework:

- GS 755: College Teaching and Course Design — Spring 2018
- STA 771S: Teaching Statistics — Spring 2016

Other training:

- Teaching Observation (Teaching Triangles) — Summer 2018

Work Experience

Analyst — 2012 - 2013
KPMG Professional Services, Nigeria
Internal Audit, Risk and Compliance Services

Analyst — 2011
Aterios Capital Limited, Lagos, Nigeria
Asset Management Division

Awards

Presidential Special Scholarship for Innovation & Dev. — 2012 - 2015
Federal Government of Nigeria
M.Sc./Ph.D scholarship

SERVICE	Student Mentor for incoming PhD students *Department of Statistical Science, Duke University*	2018
	ASA DataFest@Duke Co-organizer and Instructor *Department of Statistical Science, Duke University*	2017 and 2018

REFERENCES Available on request