CONTACT INFORMATION

Social Science Research Institute
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Box 90989, Durham NC 27708

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RESEARCH INTERESTS

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

POSITIONS

Assistant Professor of the Practice   2020 – present
Social Science Research Institute, Duke University
Department of Statistical Science, Duke University (Secondary)

Instructor   2019 – 2020
Social Science Research Institute, Duke University

Research Assistant   2014 – 2019
Department of Statistical Science, Duke University

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

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

PEER-REVIEWED & INVITED PUBLICATIONS

1. **Akande, O.** and Reiter, J. P. (forthcoming), "Multiple Imputation for Nonignorable Item Nonresponse in Complex Surveys Using Auxiliary Margins," *Statistics in the Public Interest–In Memory of Stephen E. Fienberg*, edited by A. Carriquiry, W. Eddy, and J. Tanur, Springer. [arXiv Link]
2. **Akande, O.**, Madson, G., Hillygus, D. S., and Reiter, J. P. (2021), "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys," *Journal of the Royal Statistical Society A*.
3. **Akande, O.**, Reiter, J. P., and Barrientos, A. F. (2019), "Multiple Imputation of Missing Values in Household Data with Structural Zeros," *Survey Methodology*, 45:2, 271-294.
4. **Akande, O.**, Barrientos, A. F., and Reiter, J. P. (2018), "Simultaneous Edit and Imputation For Household Data with Structural Zeros," *Journal*

of Survey Statistics and Methodology, 7:4, 498–519.

5. **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.

MANUSCRIPTS
UNDER REVIEW

6. Hu, J., **Akande, O.**, and Wang, Q., "Multiple Imputation and Synthetic Data Generation with the R package NPBayesImputeCat," submitted. [arXiv Link]

7. Wongkamthong, C.[†], and **Akande, O.**, "A Comparative Study of Imputation Methods for Multivariate Ordinal Data," submitted. [arXiv Link]

8. Wang, Z., **Akande, O.**, Poulos, J., Li F., "Are deep learning models superior for missing data imputation in complex surveys?: Evidence from an empirical comparison," submitted.

MANUSCRIPTS IN
PREPARATION

9. Wongkamthong, C.[†] and **Akande, O.**, "Imputing survey responses on political ideology using a hierarchical Dirichlet process mixture of multinomial distributions."

10. **Akande, O.**, Hu, J., Wang, Q., and Reiter, J. P., "Edit-Imputation and Synthetic Data Generation For Household Data with the R package NestedCategBayesImpute."

TEACHING

As Instructor
Social Science Research Institute, Duke University

- IDS 702: Modeling and Representation of Data
  - Fall 2021, Fall 2020, Fall 2019.

Department of Statistical Science, Duke University

- STA 602L: Bayesian and Modern Statistics
  - Summer I 2021, Spring 2021, Summer II 2020, Spring 2020.
- STA 610L: Hierarchical Models
  - Fall 2021, Spring 2021
- STA 360: Bayesian and Modern Statistics
  - Summer I 2021, Summer II 2020
- STA 111: Probability and Statistical Inference
  - Summer I 2018, Summer I 2016, Summer II 2014.

As Teaching Assistant
Department of Statistical Science, Duke University

- STA 440: Case Studies (senior undergrad)

[†]Student co-author.

– 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

PRESENTATIONS,
WORKSHOPS &
POSTERS

1. "Handling Missing Data and Faulty Responses in Household Data," Seminar talk at UNC Quantitative Psychology Forum. October 2020.
2. "Multiple Imputation for Nonignorable Item Nonresponse in Complex Surveys Using Auxiliary Margins," Contributed talk at Joint Statistical Meetings. August 2020.
3. "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys," Contributed talk at Joint Statistical Meetings, Denver, CO. July 2019.
4. "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys," Department of Statistical Science seminar series talk at Duke University, Durham, NC. March 2019.
5. "Handling Missing Data and Faulty Responses in Household Data," Invited faculty candidate seminar talk at University of Toronto, ON, Canada. January 2019.
6. "Handling Missing Data and Faulty Responses in Household Data," Invited faculty candidate seminar talk at Bucknell University, Lewisburg, PA. December 2018.
7. "Handling Missing Data and Faulty Responses in Household Data," Invited faculty candidate seminar talk at Duke University, Durham, NC. November 2018.
8. "Bayesian Simultaneous Edit and Imputation For Household Data with Structural Zeros," Contributed talk at Advances in Interdisciplinary Statistics and Combinatorics, Greensboro NC. October 2018.
9. "Bayesian Simultaneous Edit and Imputation For Household Data with Structural Zeros," Contributed talk at Joint Statistical Meetings, Vancouver, BC, Canada. July 2018.
10. "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys," Contributed poster at Society for Political Methodology, Brigham Young University, Provo, UT. July 2018.
11. "Bayesian Simultaneous Edit and Imputation For Household Data with Structural Zeros," Seminar talk at Duke University, Department of Statistical Science. January 2018.
12. "Multiple Imputation of Missing Values in Household Data with Structural Zeros," Department of Statistical Science seminar series talk at

Duke University, Durham, NC. February 2017.

TEACHING TRAINING	Duke Certificate in College Teaching Program	2019

SOFTWARE   NestedCategBayesImpute: R package for 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.)

MENTORING

Ph.D. Preliminary Oral Exam Committee
Victor Amaya-Carvajal (Mathematics)   2021

Masters Thesis Committee
Bo Liu (Statistical Science)   2021

Undergraduate Thesis Committee
Ethan Shen (Statistical Science)   2021

UNIVERSITY SERVICE

MSS Portfolio Presentation Committee Member   2021
Department of Statistical Science, Duke University

Admissions Committee Co-Chair   2020 - present
MIDS Program, Social Science Research Institute, Duke University

Student Mentor for incoming Ph.D. students   2018
Department of Statistical Science, Duke University

ASA DataFest@Duke Co-organizer and Instructor   2017 – 2019
Department of Statistical Science, Duke University

PROFESSIONAL SERVICE   Journal Reviews: Demographic Research, Journal of Official Statistics.

PROFESSIONAL AFFILIATIONS

American Statistical Association	2017 – present
Society for Political Methodology	2018 – 2019

PROFESSIONAL EXPERIENCE

Summer Research Fellow   Summer 2017
U.S. Food and Drug Administration

Analyst   2012 – 2013
KPMG Professional Services, Nigeria

Analyst   2011
Aterios Capital Limited, Lagos, Nigeria

AWARDS   Presidential Special Scholarship for Innovation & Dev.   2013 – 2015
                By: Federal Government of Nigeria
                Full funding for masters degree

                University of Lagos Endowment Scholarship Program   2009 – 2010
                By: University of Lagos, Nigeria
                Cash award for first class students