

HOPE ONYINYE AKAEZE

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EDUCATION

2020 Doctor of Philosophy, Measurement and Quantitative Methods

Dissertation: Incorporating Differential Speed in Cognitive Diagnostic Models with
Polytomous Attributes

Advisor: Dr. Kimberly S. Kelly.

Institution: Michigan State University.

2011 M.Sc. Applied Statistics

Area of Specialization: Applied Statistics.

Advisor: Dr. Yuehua Cui.

Institution: Michigan State University.

2007 B.Sc. Statistics

Area of Specialization: Statistics.

Advisor: Dr. Polycarp E. Chigbu.

Institution: University of Nigeria, Nsukka (UNN), Enugu State, Nigeria.

PROFESSIONAL EXPERIENCE

08/2020 – present: Academic Specialist, Office for Public Engagement and Scholarship

03/2020 – 08/2020: Research Assistant, Office for Public Engagement and Scholarship

05/2018 – 08/2018: Research Assistant, Office of Medical Education Research and Development
(OMERAD), Michigan State University.

01/2017 – 05/2017: Teaching Assistant, Department of Counseling, Educational Psychology and
Special Education, Michigan State University.

01/2016 – 05/2020: Research Assistant, Center for Statistical Training and Consulting, Michigan
State University.

08/2013 – 12/2015: Teaching Assistant, Department of Counseling, Educational Psychology and
Special Education, Michigan State University

01/2013 – 05/2013: Adjunct Faculty, Department of Mathematics and Statistics, Davenport
University, Grand Rapids, Michigan.

05/2011 – 12/2011: Teaching Assistant, Department of Statistics and Probability, Michigan State University

02/2011 – 03/2012: Research Aide, Global Observatory for Ecosystem Services, Michigan State University.

10/2008 – 02/2009: Graduate Assistant, Department of Statistics, University of Nigeria, Nsukka, Enugu State, Nigeria, for National Youth Service (NYSC).

04/2008 – 09/2008: Graduate Assistant, Department of Mathematics and Computer Sciences, Benue State University, Benue State, for National Youth Service (NYSC).

RESEARCH ACTIVITIES AND PUBLICATIONS

Peer-Reviewed Journal Publications

Akazeze, H. O., Lawrence, F. R., & Wu, J. H. C. (2022). Resolving Dimensionality in a Child Assessment Tool: An Application of the Multilevel Bifactor Model. *Educational and Psychological Measurement*.

Kaldaras, L., **Akazeze, H. O.**, & Krajcik, J. (2021). A methodology for determining and validating latent factor dimensionality of complex multi-factor science constructs measuring knowledge-in-use. *Educational Assessment*, 26(4), 241-263.

Kwiatkowski, C. C., **Akazeze, H. O.**, Ndlebe, I., Goodwin, N., Eagle, A. L., Moon, K., ... & Robison, A. J. (2021). Quantitative standardization of resident mouse behavior for studies of aggression and social defeat. *Neuropsychopharmacology*, 46(9), 1584-1593.

Kaldaras, L., **Akazeze, H. O.**, & Krajcik, J. (2021). Developing and validating Next Generation Science Standards-aligned learning progression to track three-dimensional learning of electrical interactions in high school physical science. *Journal of Research in Science Teaching*, 58(4), 589-618.

Custer, B. D., & **Akazeze, H. O.** (2019). A Typology of State Financial Aid Grant Programs Using Latent Class Analysis. *Research in Higher Education*, 1-31.

Chargo, N. J., Robison, C. I., **Akazeze, H. O.**, Baker, S. L., Toscano, M. J., Makagon, M. M., & Karcher, D. M. (2018). Keel bone differences in laying hens housed in enriched colony cages. *Poultry science*, 98(2), 1031-1036.

Raykov, T., Marcoulides, G. A., & **Akazeze, H. O.** (2016). Comparing Between-and Within-Group Variances in a Two-Level Study: A Latent Variable Modeling Approach to Evaluating Their Relationship. *Educational and Psychological Measurement*.

Peer-Reviewed Conference Papers

Akazeze, H. O., Lawrence, F. R., & Wu, J. H. C. (2022, April). Resolving Dimensionality in a Child Assessment Tool: An Application of the Multilevel Bifactor Model. Accepted for paper presentation at the American Educational Research Association Annual Meeting, San Diego, CA.

Akazeze, H. O., Jackson-Elmoore, C., & Lawrence, F. (2016, October). *Using the proportional odds model to evaluate state legislators' use of information sources in the U.S. policy process*. Presented (oral and poster) at the Women in Statistics and Data Science, hosted by the American Statistical Association, Charlotte, NC.

Chang, C., Jackson-Elmoore, C., Li, T., **Akazeze, H. O.**, & Lawrence, F. (2016, June). *Information source usage by American state legislators*. Presented at the 6th Annual General Conference of the European Political Science Association, Brussels, Belgium.

Jackson-Elmoore, C., **Akazeze, H. O.**, & Lawrence, F. R. (2016, June). *The relative importance of information sources to sub-national policymakers*. Paper presented at HKU-USC-IPPA Conference on Public Policy: Coping with Policy Complexity in the Globalized World, Hong Kong, China. Abstract retrieved from <http://www.socsc.hku.hk/cpphk/accepted-abstracts>

Papers under Review

Kaldaras, Leonora, **Akazeze, H. O.**, Krajcik, Joseph. "Developing and Validating an NGSS-Aligned Construct Map for Chemical Bonding from the Energy and Force Perspective". *Journal of Research in Science Teaching*.

Akazeze, H. O., Wu, J. H., Lawrence, F. R. & Weber, E. P. "Validation of the COR Advantage 1.5 Assessment Tool for Preschool Children: A Multilevel Bifactor Modeling Approach". *Educational Assessment, Evaluation and Accountability*.

Wu, J. H., **Akazeze, H. O.**, & Van Egeren, L. Tracking child development in preschool settings: The case of COR Advantage. *Dimensions of Early Childhood*.

Papers under Development

Akazeze, H. O., Chang, C. “Deflated Variance Inflation Factor: A New Approach for Collinearity Detection in Multiple Regression”.

Wu, J. H. & **Akazeze, H. O.**, & Van Egeren, L. “Effects of a State Pre-school Program on the Kindergarten Readiness and Attendance of At-Risk 4-year-olds”.

Van Egeren, L., Wu, J. H., Yang, N., Prince, B., Stoddard, D. & **Akazeze, H. O.** “Out-of-school-time program effects on standardized test scores during early adolescence: A multi-level growth modeling approach”

Chang, C., Van Horn, M. L., & **Akazeze, H. O.** “The Cluster Effect on Robustness of the Parameter Estimation in Multilevel Regression Mixture Models: A Monte Carlo Study”

Jungen, C., Huebner, M., & **Akazeze, H. O.** “Analysis of sympathetic innervation and myocardial substrate in patients with ischemic cardiomyopathy”

Technical Reports

Wu, J. H., Weber, E. P., Herbowicz, T., Van Egeren, L. A., & **Akazeze, H. O.** Great Start Readiness Program (GSRP) State Evaluation 2019-20 Annual Report

Wu, J. H., **Akazeze, H. O.**, & Shereda, A. (2021) Michigan public preschools improve kindergarten readiness: Findings from the Michigan Great Start Readiness Program (GSRP). GSRP state evaluation fact sheet. East Lansing, MI: Michigan State University.

Wu, J. H., Weber, E. P., Van Egeren, L. A., & **Akazeze, H. O.** Great Start Readiness Program (GSRP) State Evaluation 2019-20 Annual Report

Wu, J. H., Weber, E. P., Van Egeren, L. A., & **Akazeze, H. O.** Great Start Readiness Program (GSRP) State Evaluation 2018-19 Annual Report

Funded Grants

Co-Investigator (PI: Dillon, Laura) Center for Inclusive Computing Grant. October 1, 2021 – September 30, 2023. \$60,000.

PROFESSIONAL/ACADEMIC SERVICES

Editorial Advisory – Glick, D., Cohen, A., & Chang, C. (Eds). (2020). *Early warning systems and targeted interventions for student success in online courses*.

Student Advising (committee member) – Hui, Bronson (Doctoral dissertation, 2021). “A construct validation study of implicit and time sensitive vocabulary measures”. Advisor: Dr. Aline Godfroid.

RESEARCH INTERESTS

- Multilevel models
- Instrument construction in Education
- Meta-analysis
- Bayesian data analysis
- Power Analysis
- Quantile Regression
- Experimental Design
- Structural Equation Modeling
- Psychometric theory
- Multivariate data analysis
- Cognitive diagnostic modeling
- Response time modeling
- Item Response Theory
- Multidimensional IRT
- Categorical data analysis
- Longitudinal data analysis
- Latent variable modeling
- General/Generalized linear modeling