Deji Suolang

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Summary

Ph.D.-level Survey Methodologist and Data Scientist with extensive experience designing, administering, and analyzing cross-sectional and longitudinal surveys. Skilled in regression, missing data imputation, causal inference, latent variable analysis, and structural equation modeling. Research focuses on integrating self-reports and wearable data to improve measurement quality and correct bias in nonprobability samples. Proficient in applying machine learning and LLMs to analyze unstructured data and uncover drivers of perceptions and behavior. Proven track record of collaborating with multidisciplinary teams, overseeing the full research process, and translating complex results into actionable insights for technical and non-technical stakeholders. Committed to rigorous, innovative research that drives data-informed decision-making. Seeking a full-time research scientist role following graduation (expected December 2025).

Education

University of Michigan, Ann Arbor, MI
Ph.D. in Survey and Data Science   *2021-Present*
M.S. in Survey and Data Science   *2018-2020*
Thesis: Leveraging Wearable Sensor Data to Enhance Survey Self-Reports:
An Imputation-Based Data Integration Approach (Advisor: Dr. Brady T. West)

Nanjing University, Nanjing, China
B.A. in Sociology (with Distinction)   *2014-2018*

Utrecht University, Utrecht, the Netherlands
Exchange Program in Social and Behavioral Sciences   *2017*

Experience

University of Michigan, Institute for Social Research, Survey Research Center, Ann Arbor, MI
Graduate Student Research Assistant   *2021–Present*
Research Associate   *2018–2020*
- Designed and implemented analytical strategies to assess and adjust for selection bias, measurement error, and nonresponse in nationally representative cross-sectional and longitudinal surveys, using statistical methods such as weighting, poststratification, multiple imputation, and propensity score techniques.
- Evaluated survey design strategies for USDA- and NSF-sponsored projects by analyzing response patterns, simulating adaptive interventions, and assessing new data collection methods; authored technical reports with methodological findings and recommendations on cost–quality tradeoffs and survey modernization.

American Institutes for Research (AIR), Arlington, VA   *Summer 2024*
NAEP Doctoral Researcher Intern, Psychometric and Statistical Methods
- Developed novel missing data imputation strategies tailored for item nonresponse in large-scale education surveys with latent cognitive constructs; enhanced psychometric measurement and statistical inference for federally reported outcomes.
- Created reproducible analytic guidelines for NCES on the use of imputed data; leveraged LLMs to analyze digital process data, uncover response patterns, and inform future survey design and target group.

Johns Hopkins Medicine, Baltimore, MD   *2020–2021*
Research Assistant, Survey Statistics and Methodology
- Designed and improved surveys and vignette-based experiments on healthcare attitudes and decision-making for NIH-funded studies; developed protocols for sampling, recruitment, interviewing, and field administration for diverse target populations.
- Analyzed survey and administrative data using regression modeling, machine learning, and causal inference to examine group differences and temporal trends in healthcare utilization and outcomes; authored publications in high-impact journals, translating findings into actionable insights for multidisciplinary teams.

Selected Projects

Statistical Methods for FoodAPS Data   *2023–Present*
USDA-funded, Supervisors: Dr. Brady T. West and Dr. Yajuan Si

Missing Data Methods in Large-Scale Assessments	*2024*

NCES-funded, Supervisor: Dr. Paul Bailey

Modernizing NSF-NCSES Data: Smartphone Survey and Adaptive Design	*2021–2022*

NCSES-funded, Supervisors: Dr. James R. Wagner and Dr. Brady T. West

Investigating Patient Care Disparities with Data-Driven Approaches	*2020–2021*

NIH-funded, Supervisor: Dr. Roland R. Faigle

Selected Publications

Suolang, D., & West, B. (2025). Extending Imputation-Based Data Integration to Nonprobability Surveys: Challenges in Selection Bias. *(In Preparation)*.

Suolang, D., Yang, J., Miller, L., Rodhouse, R., Page, T., Si, Y., & West, B. (2025). Weighting Adjustment and Multiple Imputation for Addressing Nonresponse in a Multi-Day Diary Survey. *Journal of Survey Statistics and Methodology* (In Revision).

Wagner, J., West, B., Kim, B., **Suolang, D.**, Engstrom, C., & Sinibaldi, J. (2024). Using a Stopping Rule to Optimize Cost–Quality Tradeoffs in a Large, Mixed-Mode Survey: A Simulation Study. *Journal of Official Statistics*, 41(1), 329–364.

Suolang, D., Chen, B. J., Wang, N. Y., Gottesman, R. F., & Faigle, R. (2021a). Geographic and Regional Variability in Racial and Ethnic Disparities in Stroke Thrombolysis in the United States. *Stroke*, 52(12).

Suolang, D., Chen, B. J., Wang, N. Y., Gottesman, R. F., & Faigle, R. (2021b). Temporal Trends in Stroke Thrombolysis in the U.S. by Race and Ethnicity, 2009–2018. *JAMA*, 326(17), 1741–1743.

Selected Conference Presentations

Suolang, D., & West, B., Assessing the Generalizability of Imputation-Based Integration of Wearable Sensor Data and Survey Self-Reports: A Simulation Study. *ESRA*, Utrecht, the Netherlands, July 2025.

Suolang, D., & West, B., Leveraging Wearable Sensor Data to Enhance Survey Self-Reports: A Mass Imputation Approach. *AAPOR*, St. Louis, MO, May 2025.

Suolang, D., Bailey, P., Rutkowski, L., Handling Missing Contextual Data in Large-Scale Assessments: A Multiple Imputation Strategy. *NCME*, Denver, CO, April 2025.

Wagner, J., West, B., Kim, B., **Suolang, D.**, Engstrom, C., & Sinibaldi, J., How Different Modeling Choices Impact the Performance of Stopping Rules in a Longitudinal Study. *AAPOR*, Philadelphia, PA, May 2023.

Suolang, D., Effects of Front-Loaded and Escalating Incentives on Response Rates and Response Quality in Election Surveys. *AAPOR*, Los Angeles, CA (remote), May 2021.

Suolang, D., West, B., Wagner, J., Almirall, D., Toward the Optimization of Responsive and Adaptive Survey Design. *MSSISS*, Ann Arbor, MI, February 2020.

Skills

Survey Methodology and Design: Questionnaire Development and Evaluation; Cognitive Testing; Survey Sampling; Quasi-Experiment Design; Bias Correction for Nonprobability Samples; Total Survey Error Assessment, Mixed-Mode Survey Design.

Statistical Analysis and Inference: Complex Survey Data Analysis; Regression Modeling; Causal Inference with Randomized and Non-Randomized Designs; Missing Data Imputation; Weighting and Poststratification; Propensity Score Matching; Bayesian Modeling (Stan); Machine Learning for Prediction and Classification.

Computing and Data Infrastructure: R (8 yrs); Stata (8 yrs); Python (4 yrs); SAS (3 yrs); SQL (2 yrs); Git; API Integration; High-Performance Computing (Unix); Survey Programming (Qualtrics, SurveyMonkey); LLM Applications (GPT, BERT).

Communication and Collaboration: Data Storytelling; Technical and Non-Technical Presentations; Stakeholder Reporting and Engagement; Research-to-Decision Translation; Research Documentation and Reproducible Workflows (R Markdown, Jupyter); Data Visualization (ggplot2, Tableau, R Shiny).

Awards

Winner, AAPOR Seymour Sudman Student Paper Award	*2025*
Best Presentation Award, MSSISS	*2025*
Daniel Katz Dissertation Fellowship	*2024*
$25,000 grant as part of ISR Next Generation Award	
Best Methods Award, Poster Competition, BigSurv20 Conference	*2020*
Best Poster Award, MSSISS	*2020*