Analyzing NAEP and TIMSS Data Using R:
2021 EdSurvey Large-Scale Data Analysis Training Series

Application Instructions

OVERVIEW

Data from large-scale educational assessment programs such as NAEP and TIMSS are valuable for education researchers seeking to study various issues related to education and to inform policy. Due to the scope and complexity of large-scale assessment data, however, researchers normally have to use several software tools to: 1) access the data, 2) perform data manipulation, and 3) analyze the data by taking into account its complexity and special features. Mindful of this problem, NCES has been developing an R package called EdSurvey that is tailored for the analysis of large-scale assessment data. The primary purpose of this workshop is to: (1) introduce participants to the unique design features of large-scale NCES educational assessments, (2) introduce participants to the currently available functionality of EdSurvey, and (3) teach participants how to analyze NAEP and TIMSS data with appropriate procedures using the R package, which is available for free download. The knowledge and analytic approach learned from this course can be applied to analyzing other large-scale national and international data with plausible values.

EDSURVEY TRAINING SERIES

The 2021 EdSurvey Large-Scale Data Analysis Training Series will take place during four virtual sessions on **each Wednesday of October 2021 from 12pm – 2:30pm ET.**

The October series will introduce the unique design features of NAEP and TIMSS data to researchers and provide guidance in data analysis strategies that they require, including the selection and use of appropriate plausible values, sampling weights, and variance estimation procedures (i.e., jackknife methodology). The course will provide participants with hands-on practice training in analyzing public-use NAEP and TIMSS data files using the R package EdSurvey, which was developed for analyzing national and international large-scale assessment data with complex psychometric and sampling designs. At the end of the October series, participants will:

- Be familiar with the psychometric design and complex sampling structure of large-scale NCES national assessment data including NAEP and TIMSS assessment data;
- Understand the methodological aspects of the databases and their implications for analysis; and
- Know how to use the R EdSurvey package, including how to:

- o   Process the data and perform suitable data manipulation; and
- o   Conduct common statistical analyses with the data, including descriptive statistics, cross-tabulation, and regressions.

The knowledge and analytic approach learned from this course can be applied to analyzing other large-scale national and international data with plausible values.

This course is designed for individuals in government, universities, the private sector, and nonprofit organizations who are interested in learning how to analyze large-scale assessment data, such as NAEP and TIMSS data.

TERMS OF ATTENDANCE

There is no fee to attend the workshop. Attendance is mandatory. Accepted applicants are expected to be on time and join all four virtual sessions on October 6th, 13th, 20th, and 27th. Please note the following, and consider your schedule when applying:

- If you are more than 15 minutes late to a session you will be dropped.
- Missing the first or any session will exclude you from attending subsequent sessions.

QUALIFICATIONS

Applicants should have basic knowledge of statistical techniques including statistical inference and multiple regression analysis. Having working knowledge of Item Response Theory and sampling theory is preferred. Participants are expected to have certain familiarity with R software (e.g., took an entry-level training on R programming, and can use R for basic programming such as simple data cleaning or running a regression).

TIMELINE

Application Period: Opens September 7 and closes September 26 at 11:59 pm ET.

Space is limited. Notifications to accepted applicants will be sent no later than September 29. **Upon notice of acceptance to the training you will need to respond within 24 hours with confirmation of your ability to attend all four training days.**

APPLICATION SUBMISSION

To submit an application, please click on the "Start Application" button.

The information and materials you will need to provide are described below. An asterisk (*) indicates that the information is required.

	Field(s)	Description
*	First and last name	
	Middle initial	
*	Company or institution	Provide the company name where you work or institution name if enrolled in school.
*	Job title	Please include the title of your current position (e.g., Student, Researcher).

	Field(s)	Description
*	E-mail address	Use the e-mail where you wish to receive notifications about the EdSurvey Large-Scale Data Analysis Training Program.
*	Software experience	Please rate your level of software experience: First row will be R, and applicants can mark their level of programming experience using the descriptions below. Second row will be "Other (e.g., STATA, SAS, Python)", and applicants can mark their level of programming experience using the descriptions below. **Beginner** - Can run provided code. Has difficulty adapting code or fixing unexpected errors. **Intermediate** - Can write your own code. May have difficulty fixing errors and is time consuming. **Advanced** - Can write and troubleshoot your own code. Comfortable with new packages.
	Race/ethnicity	You may choose all the response options that apply. The options are American Indian/Alaska Native, Asian, Black, Hispanic, White, and Other.
	Gender	
	Resume	Your current resume / CV.
*	Statement of Interest	Upload a statement of interest describing: • Your purpose for applying to the training; • What you hope to get out of the training; and • Your level of experience with your primary software. For planning purposes, please also include the name of the city, state, and country (e.g., Arlington VA, United States; Paris France) from which you will be joining the training. Requirements: PDF or MS Word format. 300 words maximum.

EVALUATION

Applications will be evaluated on the following criteria:

- The potential for both applicants and NAEP/TIMSS to benefit from applicants' participation; and
- Applicants' knowledge and skills in data analysis and programing in R.

If you have questions about the data training workshop or difficulty using the application site, please contact us at NAEP_RD@air.org.