How Are Survey Response Rates Changing? Findings From NSSE

Shimon Sarraf, NSSE Asst. Director for Survey Operations & Project Services, ssarraf@iu.edu

Abstract

How much have survey response rates changed at colleges and universities over the last decade? Using a National Survey of Student Engagement (NSSE) longitudinal dataset (2010 to 2018) based on approximately 1,000 institutions, this study investigates how much response rates have changed over the years, the degree of variability in response rates within any given year, and what factors influence these outcomes, such as school undergraduate enrollment and the use of survey incentives. While reviewing this poster presentation, one will also gain an appreciation for one statistical method well suited for understanding change over time—latent growth curve modeling.

Study Background

Survey response rates have been in decline in the US across different settings for several decades, including but not limited to academic research, government work, and college assessment projects (Baruch, 1999; Czajka & Beyler, 2016; Lin, Hewitt, & Videras, 2017). Detailed, large-scale national studies of higher education survey response rates are rare or non-existent though. NSSE, one of the largest college assessment projects in the US, has not been immune to declining response rate trends. Between 2000 and 2013 average institution response rates declined from 42% to about 30% followed by relative stability. This recent stability, however, belies significant variability in institutions' response rate trends.

Research Questions

This study seeks to answer three questions:

1) What is the average rate of change in response rate over the past decade?
2) Do certain types of institutional characteristics or actions predict rates of change for response rates?
3) How much do response rates within a single year vary and are there institutional characteristics that explain the differences?

Methods

Sample: The sample included 1,062 four-year US colleges and universities that participated in at least three NSSE administrations between 2010 and 2018.

Data: Annual response rates for each institution served as dependent variables (combining first-year and senior populations). Covariates included institutional control, total enrollment, the campus percentage of female, full-time, African American, Latino, and senior students, as well as survey incentive and learning management system usage to boost response rates.

Missing Data: This study employed *Amelia II* (Honaker, J., King, G., & Blackwell, M., 2018), a multiple imputation package within *R*, to estimate missing values in order to minimize listwise deletion and potential bias.

Analytical Model: Using *lavaan* (Rosseel, 2012), a *R* structural equation modeling package, the study estimated a single conditional, non-linear latent growth curve model using diagonal weighted least squares. RMSEA and TLI equal .03 and .98, indicating good model fit.

Results

RQ 1: What is the average rate of change in response rate over the past decade?

- As shown in Figure 1, the 59 sample public and private institutions that participated in every NSSE administration between 2010 and 2018 had variable growth trajectories. After overall initial declines, some institutions continued to decline while others plateaued or increased.

- Model results indicate rates declined, on average, about 3.5 percentage points between 2010 and 2011 followed by a deceleration of about .3 percentage points in each following year, meaning a 3.2 point decrease between 2011 and 2012, 2.9 points between 2012 and 2013, etc.).

- Model results also indicate significant variation in individual school growth rates and a negative relationship between a school's initial response rate in 2010 and their growth rates (those with higher initial rates saw a faster rate of decline than those with lower initial rates).

Figure 1.

NSSE Response Rates by Enrollment Size and Public-Private Status (2010 to 2018)
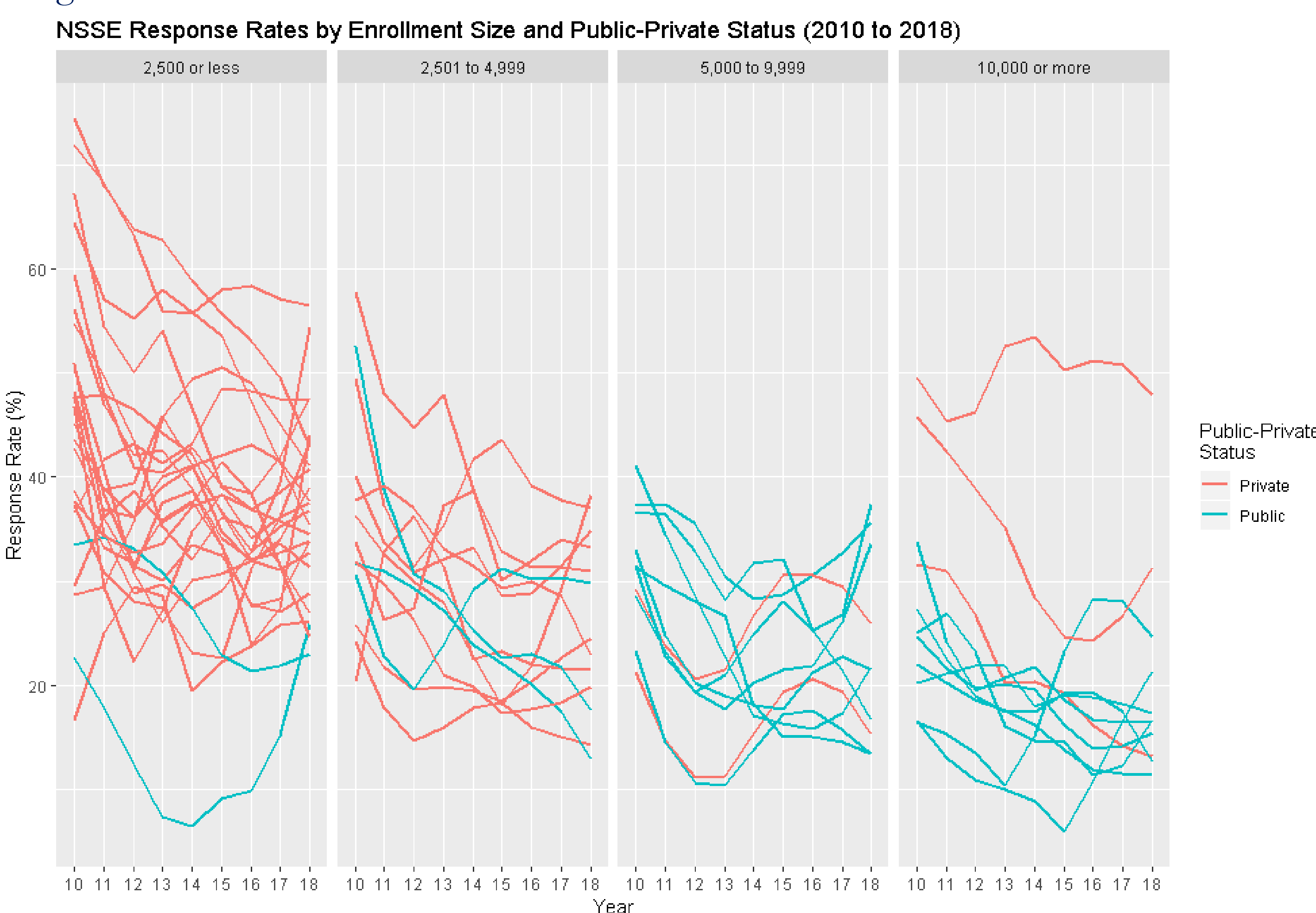
RQ 2: Do certain types of institutional characteristics or actions predict rates of change for response rates?

- Of all the institutional characteristics tested (see Data to left for details), only one was found to be a statistically significant predictor for school growth trajectories.

- A one standard deviation increase (about 17% points) in the proportion of African-American students was expected to increase the rate of change by .4 percentage points. In other words the overall decline in rate of change was 3.1% points for this group rather than 3.5% between 2010 and 2011.

- Institutions that use a survey incentive had between 3% to 5% point higher response rates, depending on the year (except for 2012).

- On average, no change in response rate was found for posting survey links to learning management systems except during the 2017 administration where a 4% percentage point increase was found.

RQ 3: How much do response rates within a single year vary and are there institutional characteristics that explain the differences?

- Per Figure 2 showing 5th, 25th, 75th, and 95th percentile values, variation in NSSE response rates each year is significant (model confirms this, too).

- Significant model results for 2018 administration: Public status (-6% pts); 1 std. dev. increase for Enrollment (-3% pts), % Full-time (2% pts.), % Female (2% pts), % African American (-2% pts), % Latino (-2% pts)

Figure 2.

NSSE Response Rate Distribution by Year and Enrollment Size Category (2010 to 2018)
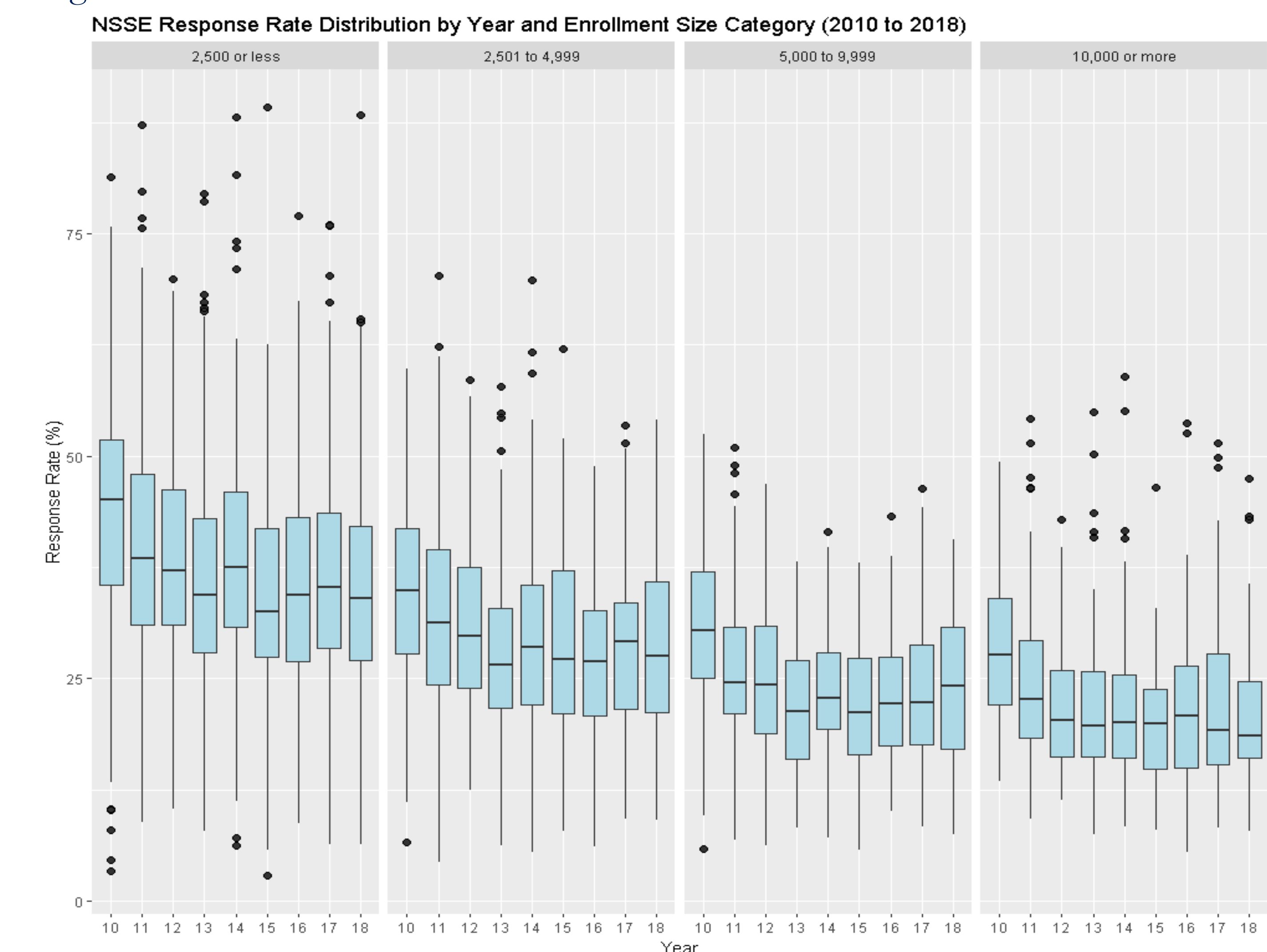
Note: Number of institutions each year within size categories range from 255 to 311, 96 to 139, 81 to 118, and 71 to 122, for the smallest to the largest enrollment groups, respectively.

Conclusions

- Study results indicate that, on average, response rates have declined over the past decade for individual NSSE participants though this trend has been decelerating. There is also significant variation across individual institutions' growth trajectories.

- This study did not identify strong predictors of institutional response rate growth trajectories, but many study variables did explain differences between school response rates in any given year.

References

- Baruch, Y. (1999). Response rates in academic studies—a comparative analysis. *Human Relations, 52*, 421-434.
- Czajka, J.L., & Beyler, A. (2016). Declining response rates in federal surveys: Trends and implications (Background Paper). Mathematica Policy Research, Washington, D.C.
- Honaker, J., King, G., & Blackwell, M. (2011). *AMELIA II: A program for missing data.* Journal of Statistical Software, 45(7), 1-47.
- Lin, W. F., Hewit, G. J. and Videras, J. (2017). "I'm meltiiiiing…": The decline of response rates and the impact of nonresponse bias on the results of national surveys at small colleges. *New Directions for Institutional Research,* 2017: 51-62. doi: 10.1002/ir.20212.
- Rosseel, Y. (2012). *lavaan: An R package for structural equation modeling.* Journal of statistical software, 48(2), 1-36.