

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 (2016 to 2023) based on approximately 800 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 undergraduate enrollment size 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 2023 average institution response rates declined from 42% to about 26%. However, this overall decline belies significant variability in individual institutions' response rate trends.

Research Questions

This study seeks to answer three questions:

- 1) What is the average rate of change in response rate between 2016 to 2023?
- 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 784 four-year US colleges and universities that participated in at least three NSSE administrations between 2016 and 2023.

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 avoid listwise deletion and potential bias.

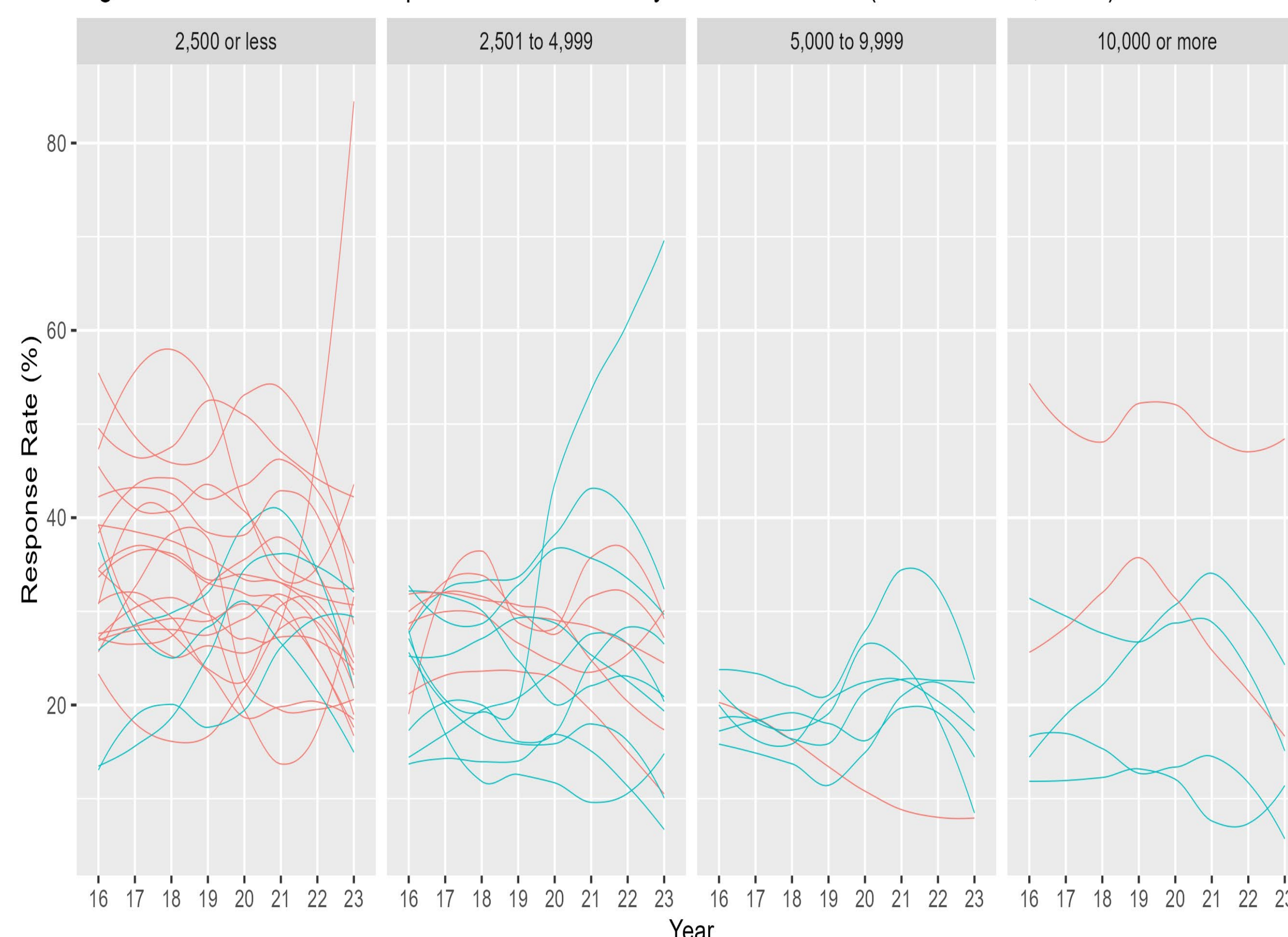
Analytical Model: Using *lavaan* (Rosseel, 2012), a R structural equation modeling package, the study estimated a single conditional, non-linear latent growth curve model using maximum likelihood. SRMR equals .03, indicating good model fit.

Results

RQ 1: What is the average rate of change in response rates between 2016 to 2023?

- As shown in Figure 1, the 52 public and private institutions that participated in every NSSE administration between 2016 and 2023 had very disparate growth trajectories.
- Model results indicate rates declined, on average each year, about 0.5 percentage points between 2016 and 2023.
- Model results also indicate significant variation in individual school growth rates and a negative relationship between a school's initial response rate in 2016 and their growth rates (those with higher initial rates saw a faster rate of decline than those with lower initial rates).

Figure 1. NSSE School Response Rate Trends by Enrollment Size (2016 to 2023, n=52)



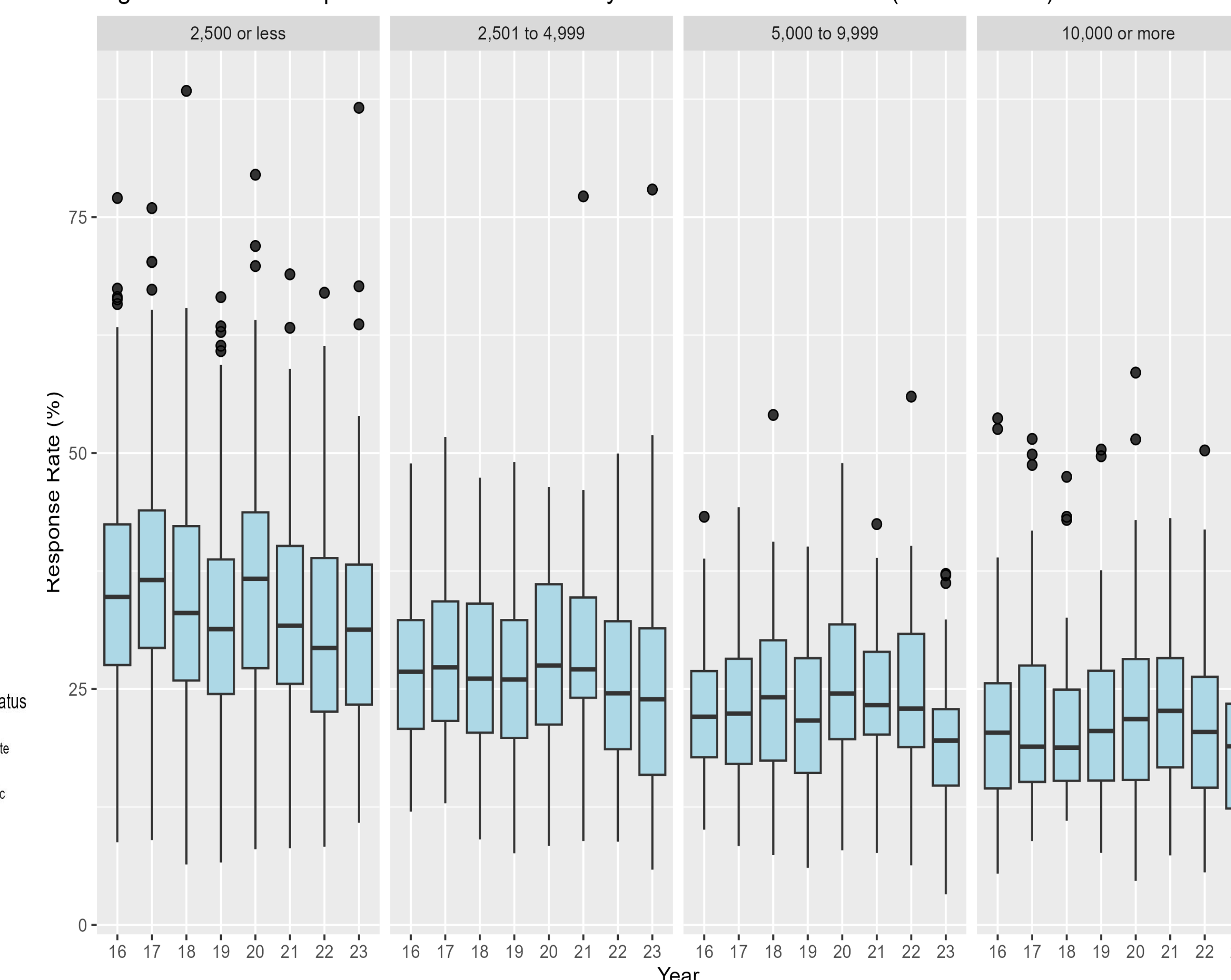
RQ 2: Do certain types of institutional characteristics or actions predict rates of change for response rates?

- Of all the institutional characteristics tested (see Data to left for details), only two were found to be a statistically significant predictors for school growth trajectories.
- A one standard deviation increase (about 12% points) in the proportion of full-time students decreased the annual rate of change by 0.14% points, meaning growth trajectories declined 0.64% points annually between 2016 and 2023. Public institution (vs Private) had 0.34% point greater growth trajectory so annual decline was about 0.15% points.
- Institutions that used a survey incentive had between 3% to 5% point higher response rates, depending on the year.
- The model estimated between 1.1% and 2.7% point positive effect for posting survey links to learning management systems.

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 2016 administration: Public status (-8% pts); 1 std. dev. increase for Enrollment (-2% pts), % Full-time (1.5% pts), % Female (1.5% pts), % African American (-2% pts), % Latino (-2% pts)

Figure 2. NSSE Response Rate Distribution by Enrollment Size & Year (2016 to 2023)



Conclusions

- Study results indicate that, on average, response rates have declined slightly for individual NSSE participants each year. There is also tremendous variation across individual institutions' growth trajectories, many of which have a non-linear form.
- This study identified two predictors of institutional response rate growth trajectories (public status and % of full-time students), while most other covariates helped to 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., Hewitt, 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.