

Multi-Year Analysis of NSSE Data: Tips and Strategies

Handouts available for download at:

www.nsse.iub.edu/institute/workshops/2008/suny_b/sunyB_materials.zip

**National Survey
of Student Engagement**



Multi-Year Analysis of NSSE Data: Tips and Strategies

NSSE Webinar
October 21, 2008
3pm EDT

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**National Survey
of Student Engagement**



Overview

 Introduction

 Five Multi-Year Analysis “Tasks”

1. Identifying Multi-Year Questions
2. Methods for Multi-Year Analysis
3. Data Quality
4. Changes in NSSE Over Time
5. Merging Multi-Year Data

 Multi-Year Results



Task 1:

**Identify and
Focus on Specific
Questions**




Identifying Multi-Year Questions

- 🌀 Confirming stability and reliability
 - 🌀 *How stable was our data from one year to the next?*
- 🌀 Measuring change due to campus initiatives
 - 🌀 *Given the implementation of a specific campus initiative, how much did engagement change before and after?*
- 🌀 Identifying trends over time
 - 🌀 *What trends in the data are apparent in given engagement measures over time?*

NSSEville State University – Research Question

“Undergraduate Student Research Program” (2006-07) gives resources to students and faculty for research projects outside of class.

 **Question: Did research with faculty increase between 2006 and 2008? If so, did changes vary by gender?**



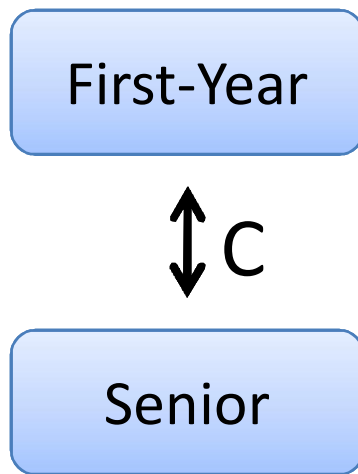
Task 2:

**Select and Employ
Appropriate
Methods of Analysis**

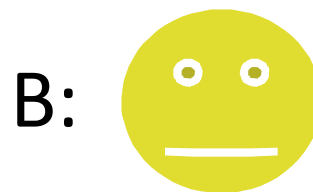
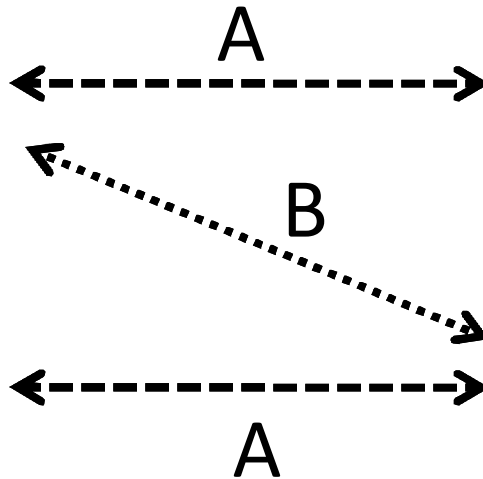
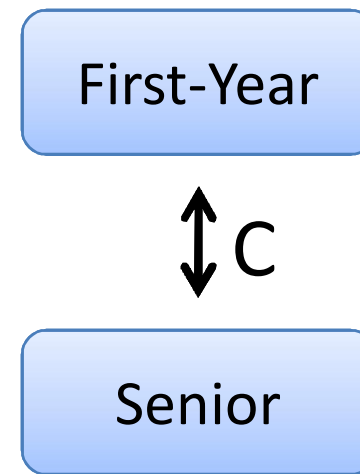


Methods for Multi-Year Analysis

NSSE 2004



NSSE 2008



Methods for Multi-Year Analysis

🌀 Statistical Difference

🌀 *t*-tests

🌀 ANOVA

🌀 Needs at least *three* years of data

🌀 Can use statistical controls

🌀 Regression

🌀 Can use statistical controls

🌀 Practical Difference

🌀 Effect Size (see our new [Effect-Size Analysis!](#))

🌀 Percentage Change



NSSEville State University - Methods

NSSE 2006

First-Year

Senior

NSSE 2008

First-Year

Senior



- 🌀 t -tests to determine statistical significance
- 🌀 Effect size to determine practical significance



Task 3:

**Attend to Data
Quality for Each
Year in the Analysis**



Data Quality


- 🌀 Response rate, non-respondent bias
- 🌀 Respondent counts
 - 🌀 Sampling Error (frequencies)
(depends on sample and population sizes)
 - 🌀 Standard Error (means)
(depends on variance and sample size)
- 🌀 Missing data


Data Quality


- 🌀 Start with the *Respondent Characteristics* in your **Institutional Report**
 - 🌀 Check your response rates
 - 🌀 Check student characteristics
 - 🌀 Check your sampling error
 - 🌀 Preferred sampling error: +/- 3% to 5%
- 🌀 Check the *NSSE Multi-Year Reporting Logic Over Time* [Handout](#)

NSSEville State University – Data Quality


2006


 Response Rate: 32%
(30% FY/34% SR)


 Sampling Error:
4.1% FY/4.4% SR

 81% FY Female,
74% SR Female

2008

 Response Rate: 35%
(36% FY/34% SR)

 Sampling Error:
3.5% FY/3.5% SR

 69% FY Female,
68% SR Female

Task 4:

**Take into Account
Changes in NSSE
Items and Reports
Across Years**



Changes in NSSE Over Time

- 🌀 Big changes in 2004!
- 🌀 *NSSE Multi-Year Variable Tracking Sheet*
 - 🌀 Question changes
 - 🌀 Response value changes
- 🌀 Benchmark considerations
 - 🌀 See our new *NSSE Multi-Year Data Analysis Guide* and our new *Multi-Year Benchmark [Report!](#)*

Changes in NSSE Over Time

- 🌀 Use the *NSSE Multi-Year Variable Tracking Sheet* [Codebook](#) to interpret the Excel spreadsheet ([.xls](#))
- 🌀 Important variables to *always* consider:
 - 🌀 **classran**: Institution reported class rank (1 = First-Year, 4 = Senior)
 - 🌀 **inelig**: Identifies eligibility (1 = Eligible)
 - 🌀 Sample type
 - 🌀 **Smpl01** (2001-2003): 1 & 2 are random
 - 🌀 **Smpl05** (2004+): 1-3 are random
 - 🌀 Weight (**stuw2** for 2001-2003, **weight1** for 2004+)
 - 🌀 Any other controlling, independent, or dependent variables

NSSEville State University – Data Quality

SORT_07	N_07	Var_07	Q_07	07to06 Q comp	07to08 Q comp	RV_07	07to06 RV comp	07to08 RV comp	BM_07	BM comp_07 to06	BM comp_07 to08
45	7d	RESRCH04	Work on a research project with a faculty member outside of course or program requirements	1	1	Have Not decided; Do Not plan to do; Plan to do; Done	1	1	SFI	1	1

- For my analyses, I want to “keep” the variables classran, inelig, smpl05, weight1, gender, and RESRCH04



Task 5:

Merge Multiple Years of Data



Merging Multi-Year Data

- Account for any changes in variable names
- Don't forget to create a variable to account for the data's year!
- Merge options
 - SPSS pull-down menus
 - Data -> Merge Files -> Add Cases
 - Write your own syntax

Merging Multi-Year Data with SPSS

- 🌀 Save a copy of each year of your data with only the variables you want to “keep”
- 🌀 In each year of your data create the same variable **Year** with a different value representing each year
 - 🌀 0 = 2001, 1 = 2004, 3 = 2007, 4 = 2008, etc.
- 🌀 Open your “base year” and add the next year
 - 🌀 Data -> Merge Files -> Add Cases
 - 🌀 Repeat for each additional year

Merging Multi-Year NSSEville State University Data

See *Using SPSS to Merge Multiple Years of Data* [handout](#)

```
GET FILE='C:\temp\NSSEville 2006.sav' /KEEP classran inelig smpl05 weight1 gender RESRCH04.
COMPUTE Year = 0 .
VARIABLE LABELS Year 'The year the data was collected' .
VALUE LABELS Year
  0 '2006' .
EXECUTE .
SAVE OUTFILE='C:\temp\2006.sav'.
```

```
GET FILE='C:\temp\NSSEville 2008.sav' /KEEP classran inelig smpl05 weight1 gender RESRCH04.
COMPUTE Year = 1 .
VARIABLE LABELS Year 'The year the data was collected' .
VALUE LABELS Year
  1 '2008' .
EXECUTE .
SAVE OUTFILE='C:\temp\2008.sav'.
```

```
GET FILE='C:\temp\2006.sav'.
ADD FILES /FILE=*
/FILE='C:\temp\2008.sav'.
EXECUTE.
SAVE OUTFILE='C:\temp\NSSEville 2006 2008.sav'.
```

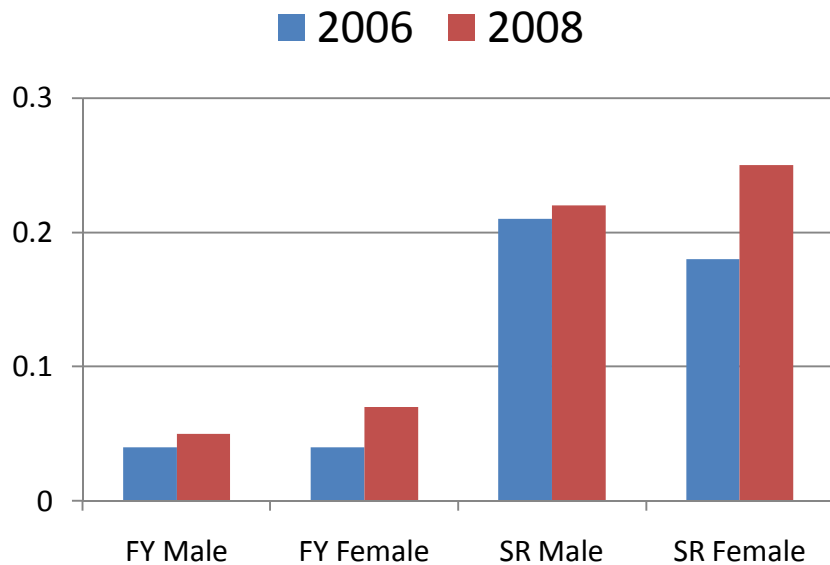
After running this syntax, I now have an SPSS dataset called “NSSEville 2006 2008” with the six variables I wanted to use in my analyses and a new variable that identifies the year of the data.

NSSEville Results

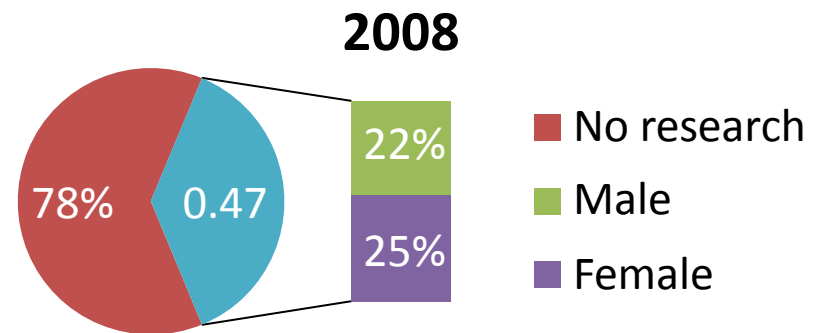
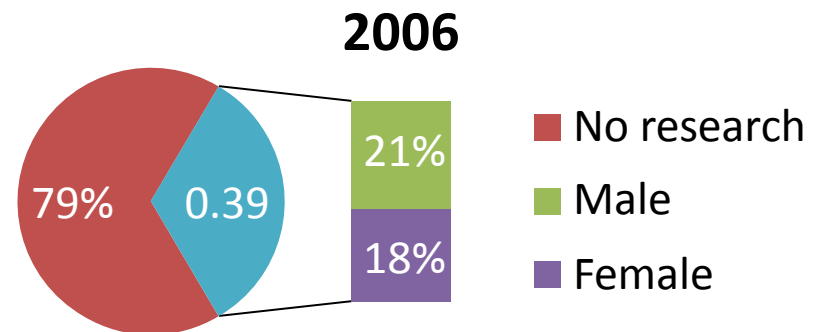
**Worked on a research project with a faculty member
outside of course or program requirements**

	N	Percent "done"	Statistical Difference?	Effect Size
2006 F-Y Male	69	4%	NO	
2008 F-Y Male	133	5%		
2006 F-Y Female	306	4%	YES**	.13 (small)
2008 F-Y Female	309	7%		
2006 SR Male	82	21%	NO	
2008 SR Male	143	22%		
2006 SR Female	238	18%	YES***	.17 (small)
2008 SR Female	325	25%		

NSSEville Results



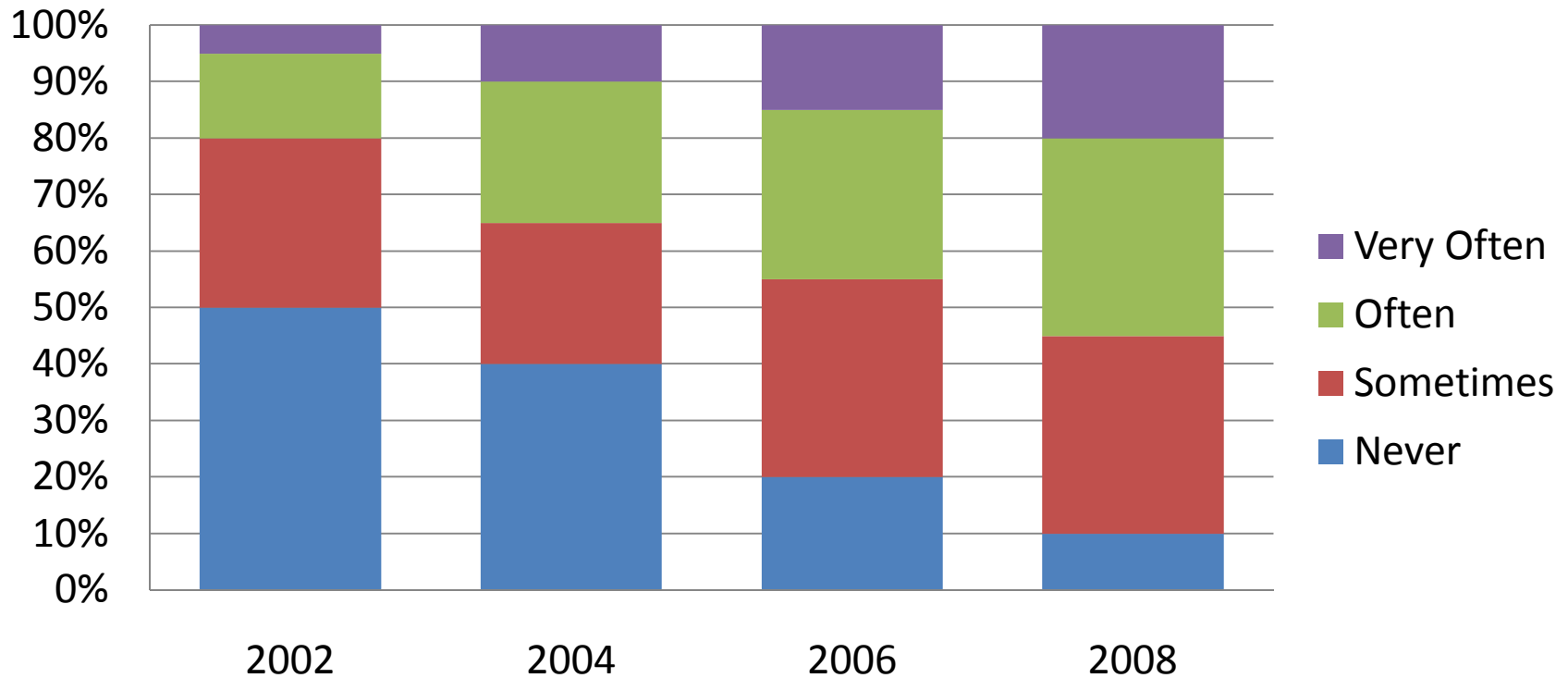
Percent of Senior Students Doing Research with Faculty by Gender



Worked on a research project with a faculty member outside of course or program requirements

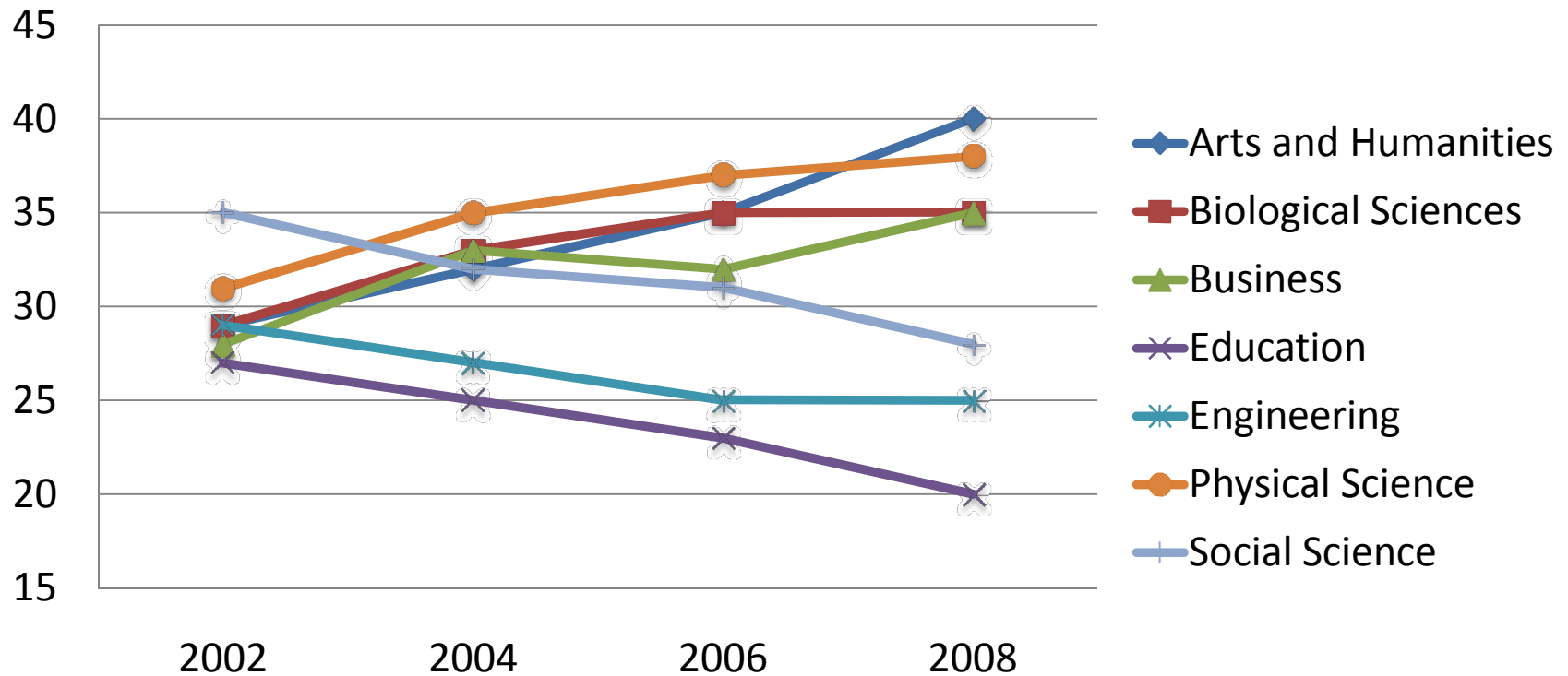
Multi-Year Results

Percentage of students that tutored or taught other students (paid or voluntary)

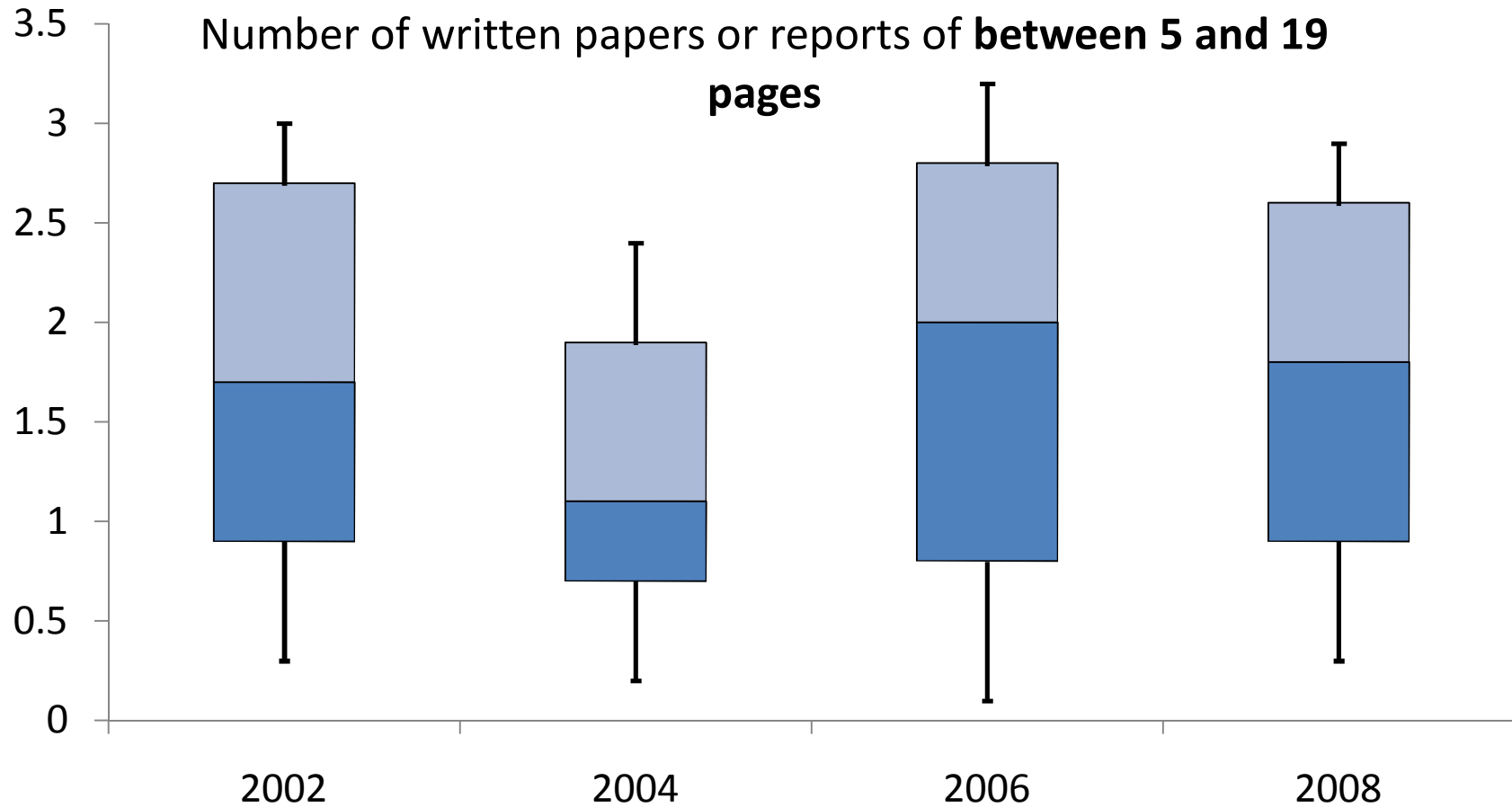


Multi-Year Results

Percentage of excellent ratings of the quality of academic advising



Multi-Year Results



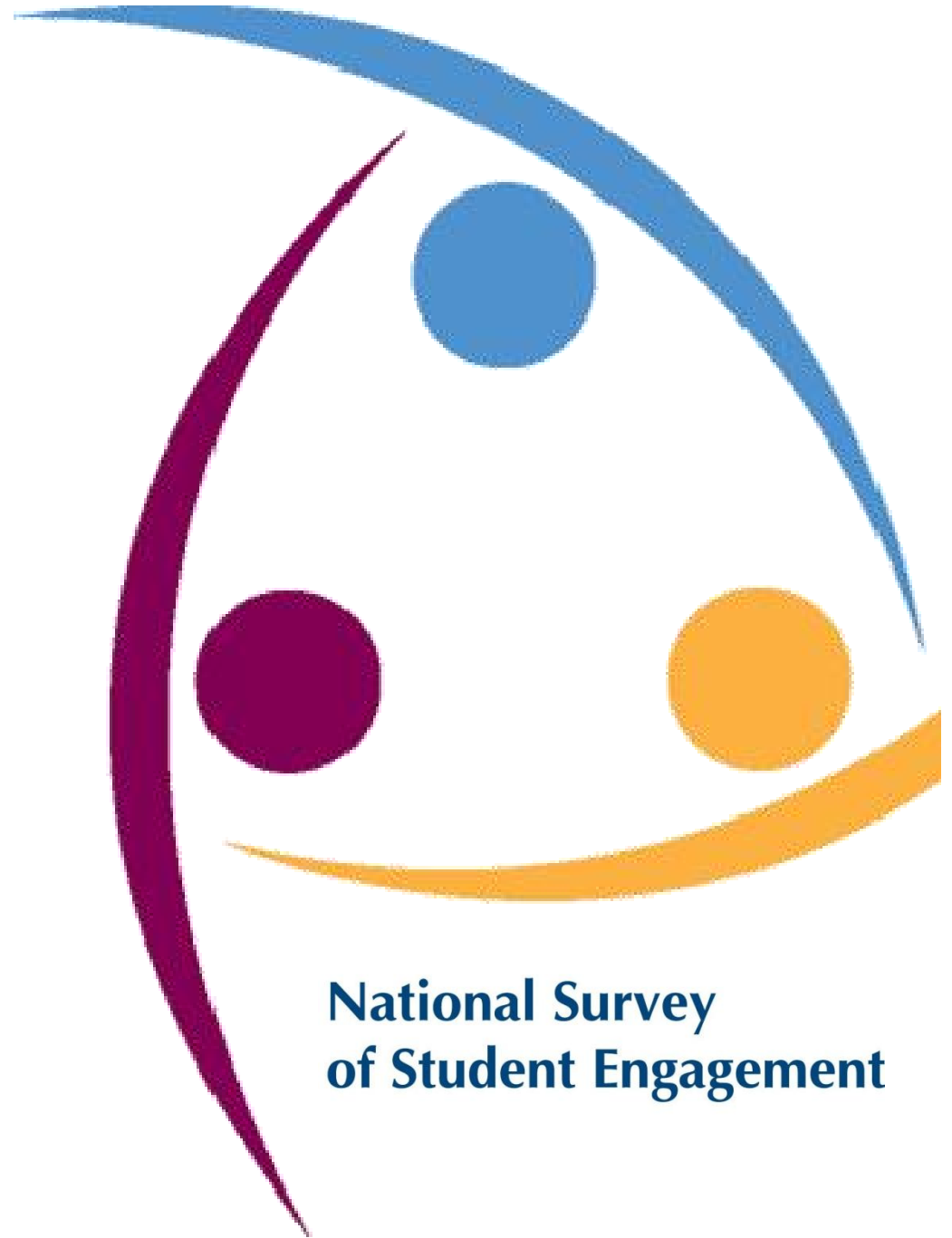
Questions?

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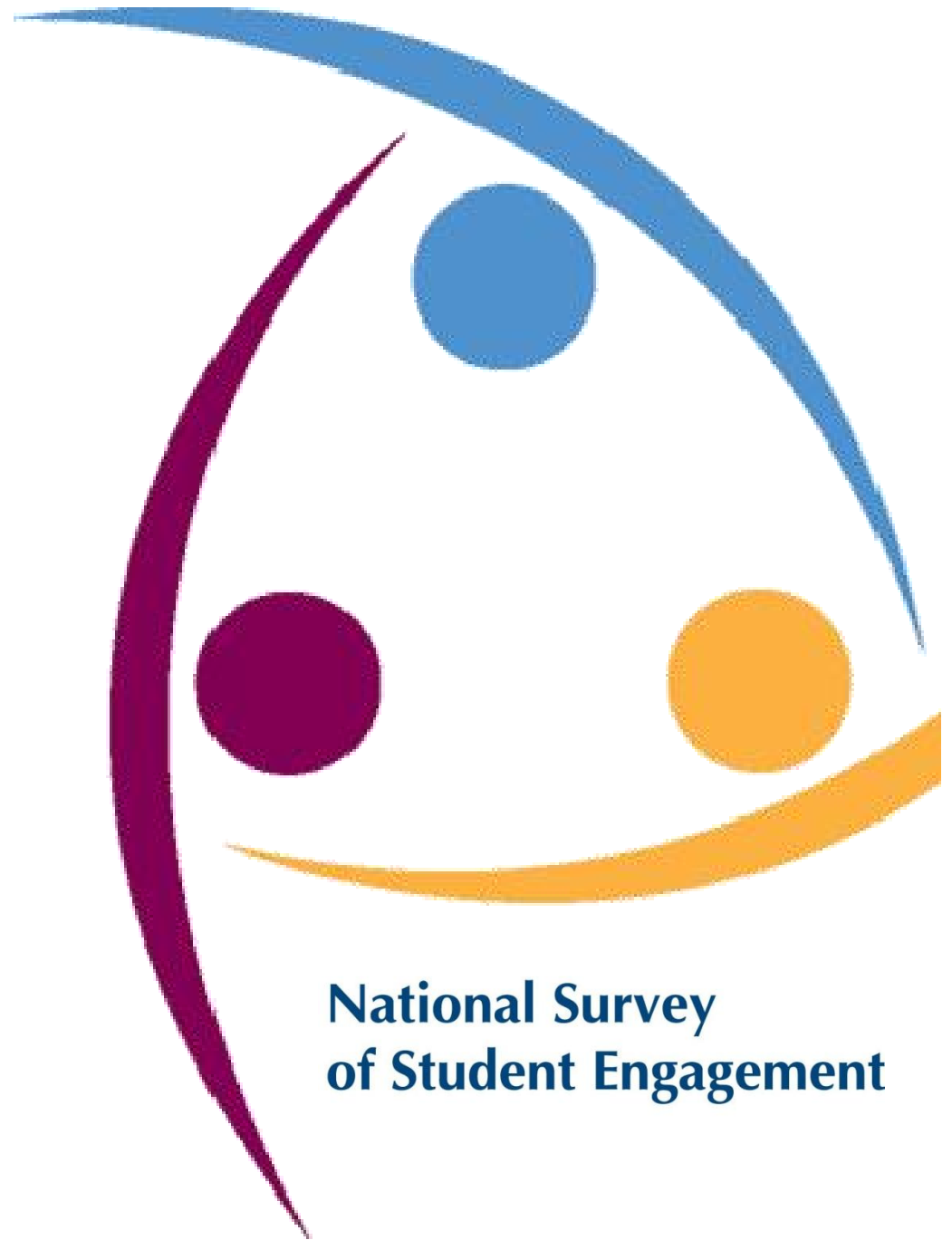
THANK YOU

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