Investigating Social Desirability Bias in Student Self-Report Surveys

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Issue of Social Desirability Bias (SDB)

- Idea that respondents do not answer survey questions truthfully because they are trying to provide socially appropriate responses
  - Traditionally only a major concern for surveys with sensitive topics, such as sexual behaviors or drug use
- Many scales have been developed to measure the tendency to respond in a socially desirable manner
- If instrument is free from SDB, scores should not be related to scores on a measure of SDB
SDB in Higher Education Research

- More recently, SDB is a concern for student responses in a variety of self-reported topics.
- Significant relationships between SDB and:
  - Perceptions of institutional values (Ferrari & Cowan, 2004)
  - Goal orientation (Ferrari et al., 2009)
  - Value commitment (Ferrari et al., 2009)
  - Major satisfaction (Nauta, 2007)
  - Self-reported gains (Bowman & Hill, in press)
SDB in Higher Education Research

- Some research fails to find evidence for presence of SBD in student self-report surveys
- No significant relationship between SBD and:
  - Imposter tendencies (Ferrari, 2005)
  - Administration mode (Hancock & Flowers, 2001)
    - Paper vs. web or anonymous vs. non-anonymous
  - Self-reported GPA (Kelly, 2003)
  - Time use efficiency (Kelly, 2003)
  - Self-complexity (Luo et al., 2009)
  - Athletic identity (Nasco & Webb, 2006)
SDB in Higher Education Research

- Literature provides conflicting results for SBD in higher education, specifically with student self-report instruments
  - Some find evidence for bias, others fail to find evidence
- Important to consider whether SDB is having an impact on student responses to the National Survey of Student Engagement (NSSE)
NSSE Background

- NSSE is a widely used measure in higher education
  - 761 institutions are participating in 2011
  - 1,493 have participated since 2000
  - Very large data set: 393,630 students completed NSSE in 2010

- Assesses variety of behaviors related to student engagement with first-year and senior undergraduate students
NSSE Background

- Five “Benchmarks” of Effective Educational Practice
  - Level of Academic Challenge
  - Active & Collaborative Learning
  - Student-Faculty Interaction
  - Enriching Educational Experiences
  - Supportive Campus Environment

- Deep Learning subscales
  - Higher-Order Learning
  - Reflective Learning
  - Integrative Learning

- Gains subscales
  - Practical Competence
  - Personal & Social Development
  - General Education
Current Study

• Student engagement behaviors would not traditionally be considered a “sensitive” topic.

• However, students might be aware that higher levels of engagement are desired by their institutions and want to appear to be “good” students.

• Research Question: Are students’ responses on NSSE influenced by the tendency to respond in a socially desirable manner?
Methodology: Participants

• Spring 2010 NSSE online administration
• 2,352 students at 6 participating institutions were selected to receive a short social desirability scale (Ray, 1984) in addition to the NSSE core survey
• Institutions represented variety of NSSE participants (for Carnegie classification, size, and region)
• 38.4% first-year and 61.6% senior
• 43.9% male and 86.6% full-time enrollment status
• 63.6% Caucasian, 11.1% African American, 7.4% Asian/Pacific Islander, 5.6% foreign, 2.4% Hispanic, .3% American Indian, .3% multi-racial, and 9.4% unknown
Methodology: Measures

- Social desirability bias (Ray, 1984)
  - 8-item scale, response options of “Yes,” “Not sure,” or “No”
  - Higher scores mean more tendency to answer in socially desirable manner
  - Ray (1984) reports internal consistency of $\alpha = .77$, for this sample $\alpha = .696$
Methodology: Measures

- Benchmarks:
  - Level of Academic Challenge, 11 items, $\alpha = .718$
  - Active & Collaborative Learning, 7 items, $\alpha = .687$
  - Student-Faculty Interaction, 6 items, $\alpha = .745$
  - Enriching Educational Experiences, 12 items, $\alpha = .634$
  - Supportive Campus Environment, 6 items, $\alpha = .771$
Methodology: Measures

- **Deep Learning subscales**
  - Higher-Order Learning, 4 items, $\alpha = .843$
  - Reflective Learning, 3 items, $\alpha = .821$
  - Integrative Learning, 5 items, $\alpha = .723$

- **Gains subscales**
  - Practical Competence, 5 items, $\alpha = .836$
  - Personal & Social Development, 7 items, $\alpha = .869$
  - General Education, 4 items, $\alpha = .847$
Methodology: Measures

- Two additional NSSE items
  - Self-reported grades, with response options of “A,” “A-,” “B+,” “B,” “B-,” “C+,” “C,” and “C- or lower”
  - Overall institutional satisfaction on 4-point scale ranging from “Excellent” to “Poor”
  - Higher scores indicate higher grades/levels of satisfaction
Methodology: Analysis

- Bivariate correlations between SD and NSSE benchmarks, subscales, and individual items
- Regression analyses to explore whether SD is significant predictor of NSSE benchmarks, subscales, and individual items when controlling for other demographic variables
  - Separate analyses for FY and SR students
  - Bonferroni correction used, α set to .002 (.05/26)
  - Weighted by gender, enrollment status, and institution size
## Results: Correlations

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Analyses weighted by gender, enrollment status, and institution size

*p<.002
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Results: Regression

- It is known from previous research with NSSE that many demographic variables are related to scores on benchmarks and subscales.
- Regressions used to explore whether SD was a significant predictor of benchmarks and subscales when controlling for:
  - Gender, enrollment status, first generation status, transfer status, athlete status, living on campus, Greek status, international status, ethnicity, self-reported grades, and overall institutional satisfaction.
  - Control variables entered as Step 1, SD as Step 2.
# Results: Step 2 Regression Summary

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Discussion

- Bivariate correlations found weak but significant relationships between SD and:
  - Level of Academic Challenge and Reflective Learning for first-year students
  - Supportive Campus Environment, Reflective Learning, Gains in Personal & Social Development, and Gains in General Education for seniors
- The magnitude is very small (Cohen, 1992), explaining only .8 to 2.0% of the variance
Discussion

- After using regression to control for demographic variables, SD was only a significant predictor of:
  - Supportive Campus Environment and Gains in Personal & Social Development for senior students
- Other significant correlations no longer significant when included in regression model
- Weak beta coefficients and very small changes in $R^2$, contributing only .7 and 1.1% of explained variance
Discussion

- Reflective Learning items rely more on reporting frequency of cognitive activities (as opposed to more outward observable behaviors)
  - Different types of behaviors may be more influenced by SD
- First-year students may feel social obligation to report that “college is hard”
  - Have received this message from high school teachers, during orientation, etc.
- Senior students may feel more social obligation to appear to have gained skills and have positive feelings about their campus
  - Is desired by their institutions
  - May also want to justify the cost of attending college
Discussion

- Majority of the correlations are not significant
- Majority of Step 2 regression coefficients are not significant
- Very small effect sizes (in terms of explained variance) for the few that are significant
- Social desirability bias is having very little, if any, practical impact on responses to NSSE
Limitations

- May not represent ALL college students
  - Only have data for those students at institutions participating in NSSE, who responded to both NSSE core survey and additional social desirability scale
- Data from only 6 institutions did not allow for examinations of influences of institutional characteristics (i.e. Carnegie classification, public vs. private, etc.)
- Acceptable but lower than desirable Cronbach’s alphas for some measures
Future Research

- Further investigate data for differences in SDB among various student characteristics
  - Gender, enrollment status, on-campus, transfer status, ethnicity, etc.

- Examine potential influence of SDB in other types of student self-report data
  - Course evaluations, social activities, etc.
Questions? Feedback?
References


Updated NSSE to Launch in 2013
nsse.iub.edu/ nsse2013

NSSE 2.0: Item testing and pilots 2011-2012

- Refinements of existing measures, including benchmarks
- New measures
- Improved clarity and applicability of survey language, including terms related to online instruction
- Updated terminology, primarily related to technology