

Semester Stress: Time of Semester Effects on Data Quality

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Introduction

- Social psychologists often use and even rely on college student participation pools.
- Might the time of the semester in which data are collected impact the quality of data? The present study sought to determine this.
- We also examined whether collecting data online or in the lab and during the fall or spring semester predicted data quality.

Hypotheses

- Data collected near the end of the semester (i.e., the last 3 weeks) will exhibit lower data quality than data collected near the beginning of the semester (i.e., the first 3 weeks).
- Data quality will be worse for online studies than for studies conducted in the lab, particularly at the end of the semester.
- Big 5 personality indicators (measured in 11 of the 52 studies, $n = 2,536$) may predict data quality and when students participate in research (Hillhouse & Blackhart, 2020).

Method

- Data from 52 studies (14,276 participants; 9,144 females, 4,057 males, 37 other gender identity, 1,038 gender unknown; $M_{age} = 21.2$, $SD = 5.78$) conducted within our research lab during fall and/or spring academic semesters between 2007 through Feb. 7, 2020 using the undergraduate psychology participant pool were examined.
- All data included a date stamp.
- Data quality assessed by examining:
 - Length of answers on open-ended questions (# of words).
 - Response bias (# of times participants gave the same response consecutively within a questionnaire).
 - Internal consistency reliability and variability in responding for 6 commonly used questionnaires (BFI, RSES, SSES, SCS, SIAS, SPS).
- ANCOVAs conducted with Big 5 personality indicators entered as covariates examining whether data quality impacted by data collected at beginning ($n = 1,699$) or end ($n = 4,684$) of the semester, in lab ($n = 5,317$) or online ($n = 8,959$), and during fall ($n = 8,310$) or spring ($n = 5,966$) semesters.

Conclusions

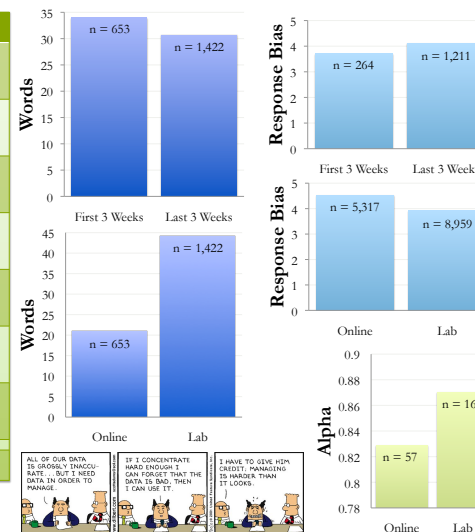
- Results suggest that data quality may be slightly worse near the end of the semester.
- Results also showed greater response bias in online vs. lab studies.
- As we found small personality differences in participants who choose to participate near the beginning (higher conscientiousness, lower agreeableness, lower openness, all $ps < .05$) than at the end of a semester, it may be wise to collect data from participants throughout the semester.
- Researchers should include attention check items in their surveys and assess for various forms of response bias to assess data quality.
- **Limitation:**
 - Analyses were conducted on data collected from a single social psychology research lab at a single university. As a result, data from other research labs at other universities should be included in future analyses.

Results

	Words	Response Bias	Cronbach's α	Variability
Time of Semester (Beg. vs. End of Semester)	$F_{(1,2067)} = 8.39$, $p = .004^a$, $d = .20$	$F_{(1,6375)} = .14$, $p = .708^b$	$F_{(1,220)} = .20$, $p = .656$	$F_{(1,225)} = .55$, $p = .46$
Study Setting (Lab vs. Online)	$F_{(1,2067)} = 417.56$, $p < .001$, $d = 1.48$	$F_{(1,6375)} = 85.1$, $p < .001$, $d = .32$	$F_{(1,220)} = 8.34$, $p = .004$, $d = .47$	$F_{(1,225)} = .09$, $p = .768$
Semester (Fall vs. Spring)	$F_{(1,2067)} = 3.29$, $p = .07$	$F_{(1,6375)} = 19.03$, $p < .001^a$, $d = .20$		
Time of Semester * Study Setting	$F_{(1,2067)} = 4.59$, $p = .032^a$	$F_{(1,6375)} = 2.88$, $p = .09$	$F_{(1,220)} = 3.21$, $p = .074$	$F_{(1,225)} = 1.78$, $p = .184$
Time of Semester * Semester	$F_{(1,2067)} = 4.01$, $p = .045^a$	$F_{(1,6375)} = 3.88$, $p = .049^a$		
Study Setting * Semester	$F_{(1,2067)} = 1.70$, $p = .192$	$F_{(1,6375)} = 21.07$, $p < .001^a$, $\omega^2 = .003$		
Time of Semester * Study Setting * Semester	$F_{(1,2067)} = 4.27$, $p = .039^a$	$F_{(1,6375)} = .85$, $p = .356$		
Mean (SD)	26.79 (18.68)	4.71 (5.26)	.839 (.093)	8.18 (3.69)

^aNo longer statistically significant when controlling for conscientiousness, agreeableness, and openness.

^bStatistically significant when controlling for Big 5, $F(1, 1468) = 4.56$, $p = .033$, $\omega^2 = .002$.



Data quality may be worse at the end of the semester & in online studies.

Acknowledgments

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