

Jumping on the Bandwagon or Jumping Ship? Testing Alternative Theories of Vote Share Overestimation

On-Line Appendix

Introduction

This appendix complements our submission, “Jumping on the Bandwagon or Jumping Ship? Testing Alternative Theories of Vote Share Overestimation.” In it we explain a third set of empirical tests intended to distinguish among four potential explanations of overestimation of winner vote share in post election polling. Briefly, these are:

1. **Social desirability:** Respondents recall how they voted but deliberately misreport their electoral preference, embarrassed to admit voting for the losing side. We test two specific hypotheses related to social desirability, described in the manuscript.
2. **Non-response bias:** The survey sample overrepresents citizens who voted for the winning side because those who voted for the losing side or abstained are less likely to participate in a post-election poll. We test two specific hypotheses related to non-response bias, described in the manuscript.
3. **Memory lapse:** Survey respondents, unable to recall how they voted, misreport their electoral preference.
4. **Late opinion shift:** Large numbers of voters change their minds too late for pre-election polls do not capture the shift, which is registered in the post-election survey.

1996 American National Election Study

The 1996 United States presidential contest pitted Democratic incumbent Bill Clinton against Republican challenger Bob Dole and third-party candidate Ross Perot. This race seems to

provide for a fair test of our *Social Desirability* and *Non-Response Bias* hypotheses. It was a “normal” election characterized by winner bias of typical magnitude and the absence of contingencies (foreign wars, severe economic crises, truly competitive third-party candidates, etc.) that might inflate or depress putative overreporting. Clinton won the election handily, garnering 49.2% of the popular vote against Dole’s 40.7% and Perot’s 8.4%.

The 1996 ANES interviewed 1,714 registered voters from September 3 through November 4 (suspending data collection on November 5, Election Day), of which 1,534 respondents were re-interviewed after the election, from November 6 through December 31. Thus, 180 pre-election respondents did not participate in the post-election interview, making for a re-interview rate of 89.5%. The post-election survey estimated winner Bill Clinton’s vote share at 52.9% of the vote to the winning candidate, Bill Clinton, an overestimation of 3.7 percentage points. (The pre-election survey gave Clinton a 58.5% intended vote preference, a point we address below).

Tests and results

As with the 2009 California Special Election data, we employ the Classification Error Comparison Method to assess explanations for vote share overestimation in the 1996 National Election Survey. The pre-post panel design of the ANES presented a challenge absent from the cross-sectional pre- and post-election samples in the California data. Potential “consistency bias” (respondents’ tendency to remember and give the same answers they gave in previous waves) could artificially deflate post-election vote overreporting for the winner, stacking the deck against the overreporting hypothesis. So, we emulated pre- and post-election cross-sections by randomly dividing 1996 NES respondents into two halves, modeling t_1 vote intention on one half and using t_1 model coefficients to predict t_2 vote choice on the other half. We repeated this process 1,000 times to ensure that our results do not depend on which observations were selected into each sample half.

The t_1 model predictors of a vote for Clinton are gender, age, African American ethnicity, Hispanic ethnicity, self-identification with the working class, the Clinton thermometer score, the Dole thermometer score, and retrospective pocketbook economic evaluations. Model fit for t_1 is high: the Pseudo- R^2 averages .80 over the 1,000 iterations. Taking the median coefficient values and associated 95% confidence bounds over the 1,000 simulations (not presented here), African American ethnicity, the thermometer scores, and retrospective economic evaluations prove significant predictors of intended votes for Clinton.

[Figure A about here]

Figure A is a superposition of two histograms representing the (conditional) false negative classification error rates for the pre-election, t_1 sample (the dark gray bars) and the post-election, t_2 sample (white bars). The probability mass for the t_2 sample is to the right of that for the t_1 sample, but the overlap between the two (shown in light gray) is high. The numbers confirm visual inspection of the histograms: the t_1 median is 5.6% and the 95% quasi-bootstrap confidence bounds are (3.6%, 8.0%). These figures for t_2 are 7.6%, for a nominal difference of 2.0 percentage points, and (3.7%, 11.0%). The upper bound of the t_1 sample is seven tenths of a percentage point higher than the t_2 median. Thus, on the basis of these data, we cannot conclude that classification error was greater at t_2 than t_1 . Evidence from the 1996 NES, then, militates in favor of *Non-Response Bias Hypothesis I* over *Social Desirability Hypothesis I*.

The ANES pre-post panel design allows us to employ the second prong of our analytic strategy to test *Non-Response Bias Hypothesis II* and *Social Desirability Hypothesis II*. Recapitulating, higher re-interview rates among pre-election Clinton supporters than among supporters of other candidates bespeak non-response bias; equal re-interview rates evidence overreporting. At first blush, comparing re-interviewing rates provides no evidence of non-response bias: Clinton supporters participated in the post-election follow-up interview at a

rate barely half a percentage point higher (90.7%) than those who expressed intent to vote for another candidate (90.2%).

However, this “raw,” unconditional comparison is misleading. It fails to account for other reasons why a pre-election respondent may not take the post-election survey. The considerable body of research on non-response and, particularly, panel attrition identifies high socioeconomic status (income, education, etc.), age, and interest in politics as predictors of panel retention. In addition to these respondents’ generally greater feeling of connection to the political system, their stable economic situation makes them easier to locate for re-interviews (see, e.g., Groves and Couper 1998, Groves et al. 2002). In contrast, citizens with lower socioeconomic status and who belong to historically disadvantaged ethnic groups are less likely to participate in follow-up surveys, in part because they feel alienated from politics.

Omitting such relevant variables could—and does—bias downward (to 0, in fact) the effect of support for Clinton on the probability of taking the post-election follow-up survey. For example, suppose African Americans are likelier to vote for Clinton than other ethnic groups but less likely to participate in a post-election follow-up interview. In lumping all ethnic groups together into an omnibus comparison, the potentially positive effect of support for Clinton on survey response is canceled by the opposite effect of African American ethnicity. Comparing response probabilities within ethnic groups (and within other subgroups of respondents)—e.g., comparing African American Clinton supporters to African American supporters of other candidates—may reveal an effect otherwise obscured by the raw comparison.

So, we develop and estimate a logit model that conditions post-survey response on potential *suppressor variables*¹ as well as on stated intention to vote for the winning candidate.

¹A *suppressor variable*, X_2 , is a conditioning variable such that the “zero-order” correlation between Y and X_1 is 0 ($r_{Y,X_1} = 0$), but the partial correlation between Y and X_1 , conditioned on X_2 , is positive ($r_{Y,X_1.X_2} > 0$). This occurs when X_2 is positively correlated with X_1 ($r_{X_1,X_2} > 0$) but negatively correlated

These are: African American and Hispanic ethnicity, age, education, family income, sex, whether the respondent voted or not in the previous presidential election (in 1992), interest in politics (measured on a three-point scale ranging from “not much interested” to “very much interested”), party identification (measured on a seven-point scale ranging from “strong Democrat” to “strong Republican”), self-placement on a seven-point ideological scale (ranging from “extremely liberal” to “extremely conservative”), and retrospective pocketbook economic evaluations (measured on a five-point scale from “much worse” to “much better”). Table A presents the results of this model:

[Table A about here]

Consistent with previous studies, age increases the probability of survey response, while African-Americans and Hispanics are less likely to respond. Most important here, controlling for other causes of panel attrition uncovers a dramatic effect for pre-election Clinton support on post-election survey participation ($\beta = .866, p = .005$). Predicted probabilities give us a clearer idea of this effect’s true size: holding all other variables constant at their means, a pre-election Clinton supporter had a .943 chance of taking the post-election survey, but a non-Clinton supporter had only a .875 probability. The difference is significant, as revealed by the complete lack of overlap between the respective 95% confidence intervals (.835, .915 and .924, .963).

Substantively, the portrait of post-election respondents that emerges is more nuanced than the oversimplified story in which “winners” respond to surveys more than “losers.” It is not that Clinton supporters in general took the post-election survey proportionally more than supporters of other candidates. Rather, African American Clinton supporters took the survey at higher rates than African Americans who supported other candidates; older Clinton supporters took the survey at higher rates than older supporters of other candidates;

with Y ($r_{X_1,Y} < 0$), or when X_2 is negatively correlated with X_1 ($r_{X_1,X_2} < 0$) but positively correlated with Y ($r_{X_1,Y} > 0$).

and so on. These within-category comparisons add up to systematic overrepresentation of Clinton supporters in the post-election sample among each of the subgroups controlled for in our regression—and to overestimation of Clinton’s vote share. Our analytic strategy’s second prong, then, also tilts the scales toward *Non-Response Bias Hypothesis II* over *Social Desirability Hypothesis II*.

To assess the *Late Opinion Shift* and *Memory Lapse* hypotheses, we follow a procedure similar to that we use for the California Special Election study. We regress pre-election intended vote preference on a day counter and the same set of covariates used in the t_1 model above (sex, age, African American and Hispanic ethnicity, working class identity, the Clinton and Dole thermometer scores, and pocketbook economic evaluations), and the post-election reported vote preference on a day counter and the t_2 measures of these covariates. The slope for the pre-election day counter, shown in Figure B, is negative ($\beta_{pre} = -.004, p = .511$), counter to the *Late Opinion Shift* hypothesis. On the other hand, the slope for the post-election day counter is positive ($\beta_{post} = .008, p = .450$), consistent with the *Memory Lapse Hypothesis*. This is shown in Figure C. In both cases, however, the p-values are so high that we are reluctant to conclude on the basis of these data that there were significant trends in support for Clinton over time—whether increases or decreases, and whether before or after the election. Given the long survey periods (63 days prior to the election, 58 after), the lack of systematic opinion shift is surprising. It may be simply that observations are spread over too many days and point estimates, too imprecise, to detect trends.

[Figure B about here]

[Figure C about here]

If (so far as we know) support for Clinton remained constant in pre-election polling, how can we explain the 5.6-point decline (from 58.5% to 52.9%) in reported support for Clinton between the t_1 and t_2 surveys? The negative trend estimate for t_1 respondents, though not

significant at conventional levels, is suggestive. Predicted probabilities of an intended vote for Clinton (holding other variables constant) are .605 at the beginning of pre-election polling and .537 the day before the election, roughly corresponding to pre- and post-election survey estimates of Clinton's vote share. In fact, the ANES data register a 5.5% net shift of votes away from Clinton between the pre- and post-election survey periods: 9.5% of respondents who initially supported Clinton switched preferences to another candidate, but only 4.0% did the opposite. If anything, then, opinion shift explains Clinton's waning fortunes between t_1 and t_2 rather than post-election survey winner bias.

Full Table 5

This appendix also includes an expanded version of Table 5, reported in the manuscript. In this appendix, it is labeled Table B, below. This version of the table presents the coefficients for annual fixed effects for models 2 and 3.

[Table B about here]

Figure A: Histogram of Classification Error Rates for ANES 1996 Simulated Pre- and Post-Election Cross-sections.

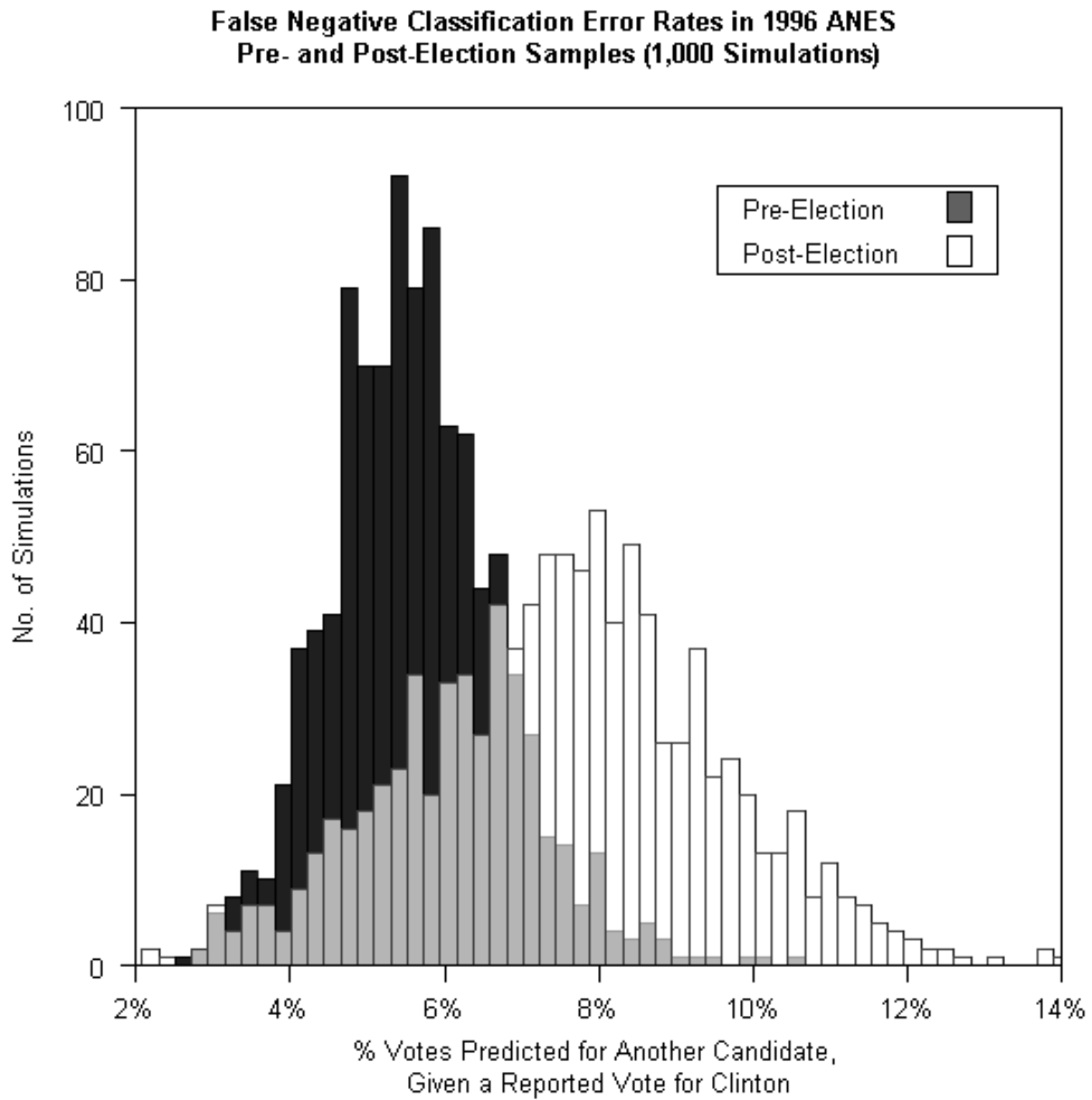


Figure B: Trend in Pre-Election Support for Clinton (Daily Point Estimates with Predicted Probabilities and 95% CI)

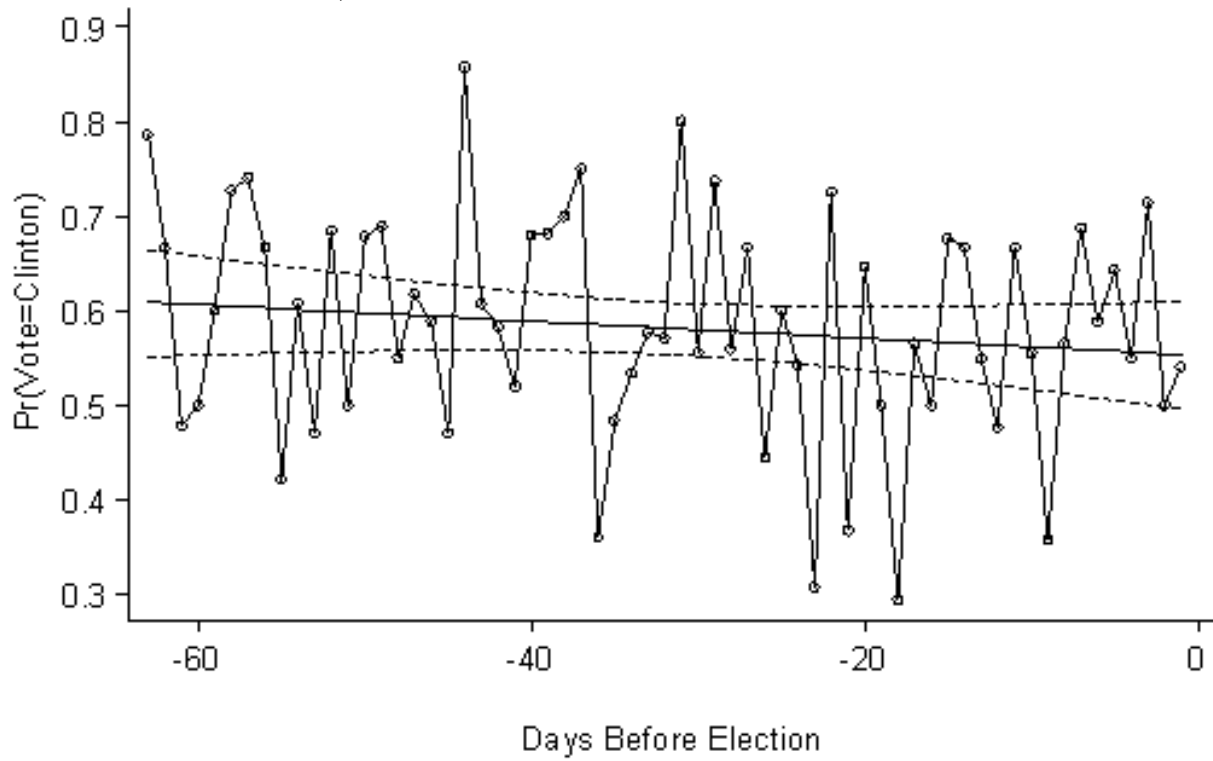


Figure C: Trend in Post-Election Support for Clinton (Raw Estimates with Curve of Predicted Probabilities)

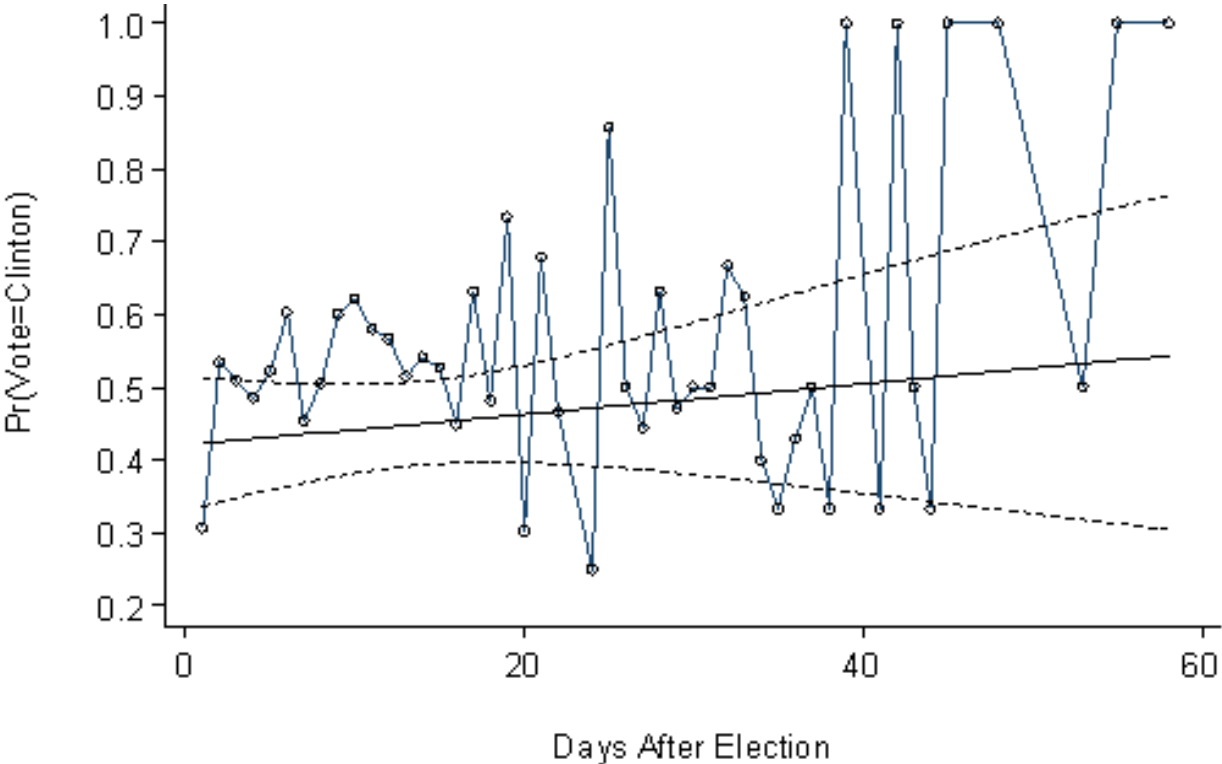


Table A: Logistic Regression of ANES 1996 Post-Election Survey Response Probability on Pre-Election Vote Preference and Other Covariates.

	β	
	(s.e.)	<i>p</i> -value
Pre-election vote preference (1 = Clinton, 0 = Other)	0.87** (0.31)	0.005
African American (1 = Yes, 0 = No)	-1.23*** (0.29)	0.000
Hispanic (1 = Yes, 0 = No)	-0.81** (0.29)	0.006
Age	0.220** (0.07)	0.002
Education (Years of school completed)	0.087† (0.06)	0.058
Annual family income (in \$10,000s)	0.00 (0.03)	0.938
Gender (1 = Male, 0 = Female)	-0.11 (0.19)	0.589
Voted in 1992 (1 = Yes, 0 = No)	0.21 (0.26)	0.416
Interest in politics (1 = Not much, 3 = Very interested)	-0.09 (0.15)	0.530
Party identification (1 = Strong Democrat, 7 = Strong Republican)	0.07 (0.07)	0.327
Ideology (1 = Extremely Liberal, 7 = Extremely Conservative)	0.0 (0.07)	0.995
Retrospective pocketbook (1 = Much worse, 5 = Much better)	-0.17‡ (0.11)	0.139
Intercept	0.36 (0.89)	0.692
<i>N</i>	1,299	
$\chi^2_{[12\ df]}$	51.42***	
<i>Pseudo R</i> ²	0.062	

Significance levels: *** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$

Table B: Logistic Regression of ANES Cumulative File Post-Election Survey Response Probability on Pre-Election Vote Preference and Other Covariates; Table 5 from manuscript.

	Model 1	Model 2	Model 3
	β	β	β
	(s.e.)	(s.e.)	(s.e.)
Pre-election vote preference (1=Winner, 0=Other)	0.25*** (0.05)	0.26** (0.05)	0.23*** (0.06)
African American (1=Yes, 0=No)			-0.15 (0.09)
Other non-white (1=Yes, 0=No)			-0.43*** (0.29)
Age			0.00 (0.00)
High school or less (1=Yes, 0=No)			0.10 (0.09)
Some college (1=Yes, 0=No)			0.25* (0.11)
College or advanced degree (1=Yes, 0=No)			0.43** (0.12)
Income			-0.05 (0.02)
Gender (1=Male, 0=Female)			-0.09 (0.05)
Interest in politics (1=Not much, 3=Very interested)			0.16 (0.04)***
Party identification (1=Strong Dem., 7=Strong Rep.)			0.03* (0.01)
1964		-0.35** (0.13)	-0.39** (0.14)
1968		-1.02*** (0.11)	-1.05*** (0.12)
1972		-1.24*** (0.10)	-1.30*** (0.10)
1980		-1.04*** (0.11)	-1.03*** (0.13)
1992		-0.65*** (0.11)	-0.72*** (0.12)
1996		-0.99*** (0.19)	-1.00*** (0.12)
2008		-0.58*** (0.11)	-0.83*** (0.14)
Intercept	2.06*** (0.03)	2.83*** (0.89)	2.43*** (0.17)
<i>N</i>	16,726	16,726	14,358
Model χ^2	23.94***	267.92***	310.22***
<i>Pseudo R</i> ²	0.002	0.025	0.034

Significance levels: *** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$