Running Head: MEASURING POLITICAL KNOWLEDGE

Political Knowledge Test Performance as a Function of Venue, Time Pressure, and Performance Norms

Keywords: Quantitative- Experiment, Political Knowledge & Sophistication, Political Psychology, Methodology

Abstract

Valid political knowledge measures are key to comprehending public opinion data. Recent shifts toward collecting data online, although efficient, may introduce biases that effect substantive conclusions. This experiment builds upon previous research that found when open-ended factual knowledge questions were asked, scores were higher when the test was administered online than when administered in pencil and paper form in a classroom. The focus of this experiment is to identify potential explanations for this effect. Plausible explanations include differential time pressure and norm induced motivation to cheat. The sample was composed of 1600 participants from a nationally representative sample collected by TESS. The design was a 2 (online, phone) X 2 (low/high time pressure) X 2 (high/low norms fully crossed and balanced independent groups design). Understanding artifacts introduced in public opinion data based on collection procedures better informs the decision to use these methods and improves measurement for this influential construct.

Political Knowledge Test Performance as a Function of Venue, Time Pressure, and Performance Norms

Political knowledge serves as a valuable construct for political scientists, political psychologists, political sociologists, and political communication scholars (Delli Carpini & Keeter, 1996; Gilens, 2001; Miller & Krosnick, 2000; Nie, Junn, & Stehlik-Barry, 1996). Consequently, to advance the empirical mission of these and other disciplines it is necessary to measure it both with high validity and with high reliability. Because features of the measurement context may act to thwart these goals (e.g., Dow, 2009; Mondak, 2001; Prior & Lupia, 2008; Sturgis, Allum, & Smith, 2008), awareness of such contextual pitfalls can motivate the development of methodological innovations that serve to enhance the quality of measures of this construct.

Recently, Shulman, Boster, and Carpenter (2011) found that the venue in which the measure was obtained and the format of the measuring instrument combined non-additively to affect political knowledge test scores. Specifically, they report that college students scored higher on a test of political knowledge when taking the test online than when taking it in a monitored classroom. They also report that students taking a version of the test that required recall (open-ended items) scored lower than those students taking the test in a format that required recognition (true-false or multiple choice items). These two main effects were overridden by a substantial non-additive effect. Whereas there was no evidence of a venue difference for the recognition formats, those in the open-ended condition scored substantially higher when taking the test online than when taking the test in a monitored classroom. Although it is tempting to attribute this result to those in the unmonitored online condition cheating more than those in the monitored classroom

condition, Shulman et al. (2011) note that the outcome might have been do to alternative or additional, factors.

This paper reports the results of an experiment designed to expand and extend Shulman et al. (2011) in three ways. First, because a monitored classroom setting lacks the flexibility needed to employ large and nationally representative samples, it has limited utility as a venue for studying the antecedents and consequents of political knowledge. Hence, this experiment contrasted two frequently employed venues, a telephone interview and an online survey,

Second, to examine the generalizability of the results a large nationally representative sample was obtained. An additional benefit of this type of sample is that it provides sufficient variance in age to allow a unique population hypothesis to be examined. That is, comparing age groups allows a test of whether or not any venue effect is unique to those of college age. Prior research has demonstrated that young adults (aged 18 – 24 years old) are less politically knowledgeable than their middle-aged and older counterparts (Delli Carpini, 2000; Jennings, 1996; Pew Research Center for the People & the Press, 2011). Of concern is whether participant age leads to differential performance based on test venue. As Shulman et al. (2011) posit, because younger participants are more adept at using online resources, they might be more likely to use the Internet as a resource when answering difficult test questions. This concern reduces the validity and reliability of their responses in the online venue.

Third, additional measures pertinent to the cheating hypothesis were obtained. Working under the assumption that it takes more time to answer questions upon which help is received, the time taken to answer each of the political knowledge items was

assessed. Additionally, working under the assumption that a few prolific cheaters may have produced the effect, respondents were asked directly after taking the test whether they had received help. Given that responses were both held in confidence and that there was no penalty for cheating, there is little reason to believe that respondents would be unable to answer this question, unwilling to answer it, or both.

In addition to expanding and extending Shulman et al. (2011), differential instructions were employed to vary two factors with potential to explain the effect. The first factor involves inducing descriptive and injunctive norms for performance and the importance of performing well on a political knowledge test (Bosari & Carey, 2003). If respondents believe that others generally do well on these tests, believe that it is important that they perform well, and have the opportunity, then they have motivation to seek help answering items for which they do not know the correct answer. Consequently, political knowledge scores in a high knowledge/high importance norm condition are expected to exceed, on average, those in a low knowledge/low importance condition based on social norm pressures (Bosari & Carey 2003; Cialdini, 2007; Gerber & Rogers, 2009; Glynn, Huge, & Lunney, 2009; Kallgren, Reno, & Cialdini,1991).

The second factor involves varying time pressure. For example, those taking an online test may avail themselves of the advantage of the additional time and comfort this venue affords. In contrast, for several reasons a classroom setting may induce time pressure and deflate scores. For instance, there is a relatively short time to which a classroom is assigned to any given group, and some participants might have been anxious to leave. Consequently, they might rush through the test so that those witnessing their peers finish early might then become self-conscious about how long they were taking to

complete the test, and, consequently, not avail themselves of the time they might have needed to recall the answers to some of the items. Thus, in the Shulman et al. (2011) experiment time pressure was a potential confound for the venue induction, and might have accounted for some or all of the observed effect.

For reasons mentioned previously the experiment reported subsequently did not contrast the online and classroom venues. Hence, it was necessary to use a means of varying time pressure independent of venue. The procedure employed involved instructing respondents either that it was necessary that they respond rapidly or encouraging them to take their time. If time pressure does affect political knowledge test scores, then, on average, the scores for respondents in the low time pressure condition would be expected to exceed those for respondents in the high time pressure condition. Evidence indicates that time pressure affects educational test scores in this manner (e.g., Kellogg, Hopko, & Ashcraft, 1999); indeed, that merely perceiving there to be time pressure affects performance on decision making tasks (e.g., DeDonno & Demaree, 2008) presumably due to stress (e.g., Wolf & Smith, 1995), distraction or cognitive busyness (e.g., Gilbert, 1991), or both.

Method

Subjects

A sample of 1,661 residents of the United States (49.4% male) participated in this experiment. The mean age of the sample was 50.75 years (SD=16.63), 74.4% were White, 9.3% African-American, 9.5% Hispanic, 3.3% other, and 3.5% described themselves as of mixed race. Data were collected through the Time-sharing Experiments for the Social Sciences (TESS), respondents being recruited to participate by virtue of

their membership in the Knowledge Networks participant pool, or being solicited randomly via telephone. All respondents were prescreened to ensure that they were eligible to vote in United States elections.

Design

A 2 (venue: telephone survey v. online survey) X 2 (norm: high knowledge and importance norm v. low knowledge and importance norm) X 2 (time pressure: high time pressure v. low time pressure) independent groups experiment was designed to estimate the effects of venue, norms, and time pressure on political knowledge test performance. Respondents were assigned randomly both to norm and time pressure treatments.

Two scripts were created to induce different normative expectations. Both descriptive and injunctive norms were varied by informing respondents that citizens tend to score either very high or very low on the test (descriptive norm), and that performance on the test is either very important for a functioning democracy or not very important for a functioning democracy (injunctive norm, see Appendix A).

Two experimental scripts were employed to vary time pressure. They directed respondents either to complete the task as fast as possible or to take as much time as needed to perform the task effectively (see Appendix A).

Instrumentation

A five-item political knowledge test adapted from Delli Carpini and Keeter (1993) was employed to assess political knowledge. The foreign affairs question and current event question were amended to reflect more timely knowledge. Each item was scored as either incorrect (0) or correct (1). These items are presented Appendix B.

In addition to measuring performance the time taken to complete the political knowledge test was assessed. Extreme answers on each of these items were omitted. For example, negative times were reported in some cases. Eighteen secs. was required as a lower limit, and 900 seconds was set as an upper limit.

One item was included immediately after the political knowledge test to estimate the extent of cheating. It asked participants, "When you were answering these questions did you get help from any other source, person or otherwise?"

Finally, numerous demographic indicators were obtained, including a measure of age which allowed a test of the unique population hypothesis. Age was grouped into seven categories: 18-24 (6.6%), 25-34 (13.7%), 35-44 (15.4%), 45-54 (19.6%), 55-64 (22.6%), 65-74 (14.9%), and 75 and older (7.3%).

Results

A confirmatory factor analysis (CFA) performed on the five political knowledge items indicated that the data were consistent with the hypothesis that the five items are alternative indicators of the same underlying construct (*RMSE* = .02).[1] Thus, responses to the five indicators were summed to create an index. The distribution of this index approximated closely the uniform distribution (i.e., rectangular distribution). Scores ranged from zero correct to five correct with a mean of 2.36 (47.2%) and a standard deviation of 1.72. Reliability was estimated as α = .75.

The CFA also indicated that the measures of time taken to respond to each of the five political knowledge items were consistent with the hypothesis that they are alternative indicators of the same underlying construct (*RMSE* = .03).[2] Hence, the mean of these responses was computed to form an index. The distribution of this index was

skewed positively and leptokurtic. The mean was 26.28 with a standard deviation of 26.40. Reliability was estimated as $\alpha = .69$; standardized item $\alpha = .72$.

A total of 109 people (6.6%) admitted to receiving outside help, and an additional 19 people (1.1%) refused to answer the question. Including these refusals as affirmations, 7.7% of the sample admitted to having help with the answers. These responses varied as a function of venue, $X^2(1, N = 1661) = 63.17$, $p < .001$, $r = .20$, $OR = 5.89$, with 12.8% admitting to receiving help in the online condition and 2.4% admitting to receiving help in the telephone condition. They also varied as a function of time pressure, $X^2(1, N = 1661) = 5.77$, $p = .02$, $r = .06$, $OR = 1.56$, with 9.4% in the low time pressure condition admitting to receiving help and 6.2% in the high time pressure condition admitting to receiving help. No evidence of an effect of the norm induction was observed. A subsequent log linear analysis indicated that a model including the effects of venue and time pressure fit the data well, $X^2(2, N = 1661) = 1.98$, $p = .38$.[3]

The distribution of the age measure exhibited a very slight negative skew and was platykurtic. The youngest respondent reported being 18, the oldest 109. The mean was 50.75 (4.12 for the seven category measure) with a standard deviation of 16.63 (1.66 for the seven category measure). The median, 4.0, fell into the 45-54 category and the mode, 5.0, fell into the 55-64 category.

Time

There was evidence that admitting to receiving help was associated with the amount of time taken to answer the five political knowledge items ($r = .33$, $t(1636) = 14.14$, $p < .001$) with those admitting to receiving help taking longer to answer the questions on average ($M = 57.11$, $s = 59.60$ secs. per item) than those who did not admit

to receiving help (M = 23.82, s = 19.74 secs. per item). There was insufficient evidence, however, to conclude that age was associated substantially with the time taken to complete the five political knowledge items (r = .04, *ns*). Therefore, in order to estimate the effect of admitting to receiving help and the effects of the inductions more accurately, admitting to receiving help was included as a covariate in a subsequent analysis of covariance (ANCOVA).

Moreover, there was evidence that the effect of both admitting to receiving help and age were differentially associated with the time taken to respond to the political knowledge items in the online and telephone conditions. Specifically, in the online condition both age (r = .11, p = .001) and admitting to receiving help (r = .34, p < .001) were associated positively with the time taken to answer the political knowledge items; whereas, in the telephone condition there was no evidence of association (both correlations < |.07|, *ns*). These correlational differences were substantial and were unlikely to occur if there was no difference in the population (z = 2.96, p < .01; z = 5.80, p < .001, respectively). These estimates did not differ as a function of the norm or time pressure inductions. Consequently, subsequent analyses of variance also estimate effects separately for the online and telephone conditions.

The results of a three-way ANCOVA in which venue, norm, and time pressure served as fixed experimental factors and whether or not one reported receiving help was treated as a covariate, produced evidence of main effects for the venue induction, the time pressure induction, and the covariate. Moreover, there was evidence of a norm X time pressure non-additive effect.

Specifically, it generally took respondents in the online condition longer to answer the five items (M = 31.89, M_{adj}= 30.52) than those in the telephone condition (M = 20.65, M_{adj} = 22.18), $F(1, 1629) = 45.69$, $p < .001$, d = -.43. On average, it took longer for those in the low time pressure condition to answer the items (M = 29.08, M_{adj}= 28.56) than it did for those in the high time pressure condition (M = 23.76, M_{adj}= 24.14), $F(1, 1629) = 13.22$, $p < .001$, d = -.20. The group of respondents admitting to having received help took longer to answer the five items (M = 57.11) than did those not admitting to having received help (M = 23.82), $F(1, 1629) = 162.10$, $p < .001$, d = .66. Finally, there tended to be a slightly stronger time pressure effect when the induced norm was low knowledge and low importance (low time pressure M = 30.67, high time pressure M = 23.49, d = -.25) than when it was high knowledge and high importance (low time pressure M = 26.44, high time pressure M = 24.80, d = -.13).

A two-way ANCOVA was performed for those respondents in the online condition. There was evidence of effects of admitting to receiving help, age, and time pressure. Furthermore, there was evidence that the time pressure and norm inductions combined non-additively to affect the time taken to complete the political knowledge test items.

Specifically, those admitting to receiving help took longer to complete the test (M = 63.35) than did those who did not admit receiving help (M = 25.59), $F(1,814)= 110.82$, $p < .001$, d = .68. The older the respondent the longer the time taken to answer the items, $F(1, 814) = 12.69$, $p < .001$, r = .11. Those in the high time pressure condition took less time to task completion (M = 28.44, M_{adj} = 29.32) than those in the low time pressure condition (M = 35.83, M_{adj} = 34.63), $F(1, 814) = 5.52$, $p < .05$, d = -.21. Finally, when

time pressure was low and the normative information induced low task importance and low knowledge, respondents took more time (M = 38.87) than in the other three conditions ($M \approx 30.00$), $F(1, 814) = 3.99$, $p < .05$. Put another way, the time pressure effect was larger when the low importance, low knowledge norm was induced (d = -.29) than when the high importance, high knowledge norm was induced (d = -.11).[4]

The same analysis performed for those interviewed by telephone resulted in only a main effect for time pressure. Specifically, those in the high time pressure condition (M = 18.93) completed the task more rapidly than those in the low time pressure condition (M = 22.51), $F(1,812) = 19.86$, $p < .001$, d = -.31. The cell means used in these analyses can be found in Table 1.

Political Knowledge

There was evidence that both admitting to receiving help and age were associated with political knowledge test performance (r = .07, $p < .01$ and r = .23, $p < .001$, respectively). There was insufficient evidence, however, to indicate that either admitting to receiving help or age combined non-additively with any of the experimental inductions to affect political knowledge scores. Therefore, in order to estimate their effects and the effects of the inductions more accurately, these two variables were included as covariates in a subsequent ANCOVA.

Although there was little association between the time taken to answer the political knowledge and political knowledge scores (r = .002, *ns*), there was evidence that this lack of association masked the fact that time and venue combined non-additively to affect political knowledge test performance. Specifically, in the online condition the correlation between time to answer and test performance was modest and positive (r =

.10, $p < .01$, $n = 820$); whereas, in the telephone condition the correlation was substantial and negative ($r = -.31$, $p < .001$, $n = 818$). The difference of .41 in these two correlations is substantial and unlikely to have occurred if no difference existed in the population ($z = 8.50$, $p < .001$). Consequently, supplemental analyses estimate effects separately for the online and telephone conditions.

A three-way ANCOVA was performed in which venue, norm, and time pressure served as fixed experimental factors and both age and whether one reported receiving help were treated as covariates. Analyses indicated evidence of a main effect for the time pressure induction. Moreover, there was evidence of effects of both covariates.

Specifically, those in the high time pressure condition scored lower on the political knowledge test ($M = 2.28$, 45.6% correct) than those in the low time pressure condition ($M = 2.45$, 49.1% correct), $F(1,1651) = 4.51$, $p < .05$, $d = -.12$. Furthermore, those who admitted receiving help scored higher on the political knowledge test ($M = 2.80$, 56%) than those who did not admit receiving help ($M = 2.33$, 46.6%), $F(1, 1651) = 11.67$, $p < .01$, $d = .15$. Finally, as age increased political knowledge test scores increased proportionally, $F(1, 1651) = 96.51$, $p < .001$, $r = .23$.

A two-way ANCOVA with time pressure and norm treated as fixed effects and age, time, and whether or not one admitted to receiving help serving as covariates was performed for those in the online condition. There was evidence of effects of admitting to receiving help and age. Specifically, those who admitted to receiving help scored higher on the political knowledge test ($M = 2.81$, 56.3%) than did those who did not admit to receiving help ($M = 2.26$, 45.2%), $F(1, 813) = 8.15$, $p < .01$, $d = .21$. Additionally, as the age of the respondent increased performance increased proportionally, $F(1, 813) = 20.61$,

$p <$. 001, r= .18. Notably, there was no evidence of effects for the time pressure or norm induction, the time covariate, and there was no evidence of any non-additive effects.

This analysis was also performed for those respondents in the telephone condition. Once again there was a proportional age effect, $F(1, 811) = 75.64$, $p < .001$, $r = .29$, with older respondents outperforming their younger counterparts. Moreover, as the time taken to complete the task increased, test performance decreased proportionally, $F(1, 811) = 99.27$, $p < .001$, $r = -.31$. Finally, those in the high time pressure condition scored lower on average on the political knowledge test ($M = 2.20$, 43.94%) than did those in the low time pressure condition ($M = 2.60$, 52%), $F(1, 811) = 14.35$, $p < .001$, $d = -.16$. There was no evidence of other effects, additive or non-additive. All cell means can be found in Table 1.

Discussion

The purpose of this investigation was to examine whether methodological decisions geared at obtaining a more representative sample also function to affect the data in systematic ways. In particular, this experimented raised the concern of whether political knowledge tests hosted online or over the telephone affect the quality of responses. The data presented above are consistent with the notion that respondents do cheat on political knowledge tests, cheating being construed as receiving help answering the items. Given responses to the self-report item soliciting this information, an estimate of either 6.6% or 7.7% (if a non response is taken to be an affirmation) of this sample admitted to receiving help answering an item(s). Likely these percentages are underestimates, respondents being reluctant to report what is likely regarded as non-normative behavior even when there are no penalties for so doing (Wiekens & Stapel,

2008). Nevertheless, they are consistent with the conjecture that the Shulman et al. (2011) results are attributable to a small percentage of respondents engaging in cheating.

But, the frequency of receiving help was not uniform. Instead it varied with both venue and time pressure. Specifically, those in the online condition were more likely to report receiving help than those in the telephone condition, and those in the low time pressure condition were more likely to report receiving help than those in the high time pressure condition. In a telephone interview there is implicit social pressure to provide an answer in a relatively short time; whereas, in the absence of such social pressure and with less monitoring, the online condition provides considerably more latitude for respondents to seek answers from external sources. Moreover, the time pressure instructions had the effect of attenuating or expanding this opportunity. Hence, both the venue and time pressure effects suggest that when the survey context provides the opportunity to receive help answering items, some small, but non trivial, proportion of the respondents will avail themselves of the opportunity.

And, doing so has important consequences. Those who reported receiving help took longer to answer items in the online condition; no evidence of this effect was observed in the telephone condition. Subsequently, those reporting receiving help had more correct answers on the political knowledge test in the online condition. Again, there was no evidence of such an effect in the telephone condition.

No evidence of a differential age effect, i.e., that age and venue combined non-additively to affect political knowledge test scores, emerged. Nonetheless, age effects were observed. In the online condition the older the participant the longer it took to answer the items. More important, across both venues the older the participants the

higher their political knowledge scores. The reasons for this effect, e.g., cohort differences, experience, etc., were not probed in this experiment, however this finding is a well-documented in the literature (e.g., Delli Carpini & Keeter, 1996; Jennings, 1996)

The time pressure effects tended to be restricted to the telephone venue. In the telephone condition those respondents in the high time pressure condition spent less time answering items than those in the low time pressure condition. Furthermore, in the telephone condition the high time pressure condition respondents scored lower on average on the political knowledge test than did their low time pressure counterparts, no effect of time pressure on political knowledge test performance being observed in the online condition.

The norm induction had little observable impact on the criterion variables. The parameters of the experiment render checking the effectiveness of this induction difficult. Thus, rather than dismissing this factor as lacking causal force, it is prudent to withhold judgment until a demonstrably effective set of instructions can be developed, and its effect on political knowledge assessed.

Overall, this investigation raises troubling concerns regarding online surveys of political knowledge. The data are consistent with other national surveys that assess citizens' political knowledge. In this study, participants answered 47.2% of the questions correctly. In a recent political knowledge survey carried out by the PEW research center (2011), a nationally representative sample answered 52.9% of questions correctly (N = 1168). When taking into consideration the conventional 95% confidence interval around both estimates, these percentages are comparable. The fact that this experiment yielded

knowledge estimates similar to other large survey organizations emboldens our claim that data collection features affect the data in substantive ways.

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Footnotes

[1] Nevertheless, mean differences among items were observed, $F(4, 6640)=173.45$, $p<.001$. Almost 2/3 (64%) of the sample reported that Kennedy was President during the Bay of Pigs invasion, 50% of the sample recalled correctly the national unemployment rate, 49% could name a nation which had just received a bailout from the European Union, 45% recalled correctly the length of a Senator's term of office, but only 29% could name the Chief Justice of the Supreme Court.

[2] Again, mean item differences were observed, $F(4, 6548)=67.26$, $p<.001$. It took longer for *S*s to identify the Chief Justice of the United States ($M=34.24$ secs.) and to name a nation which had just received a bailout from the European Union ($M=31.41$ secs.), than it did for them to respond to the item concerning the President during the Bay of Pigs invasion ($M=24.31$ secs.) and the unemployment item ($M=24.12$ secs.), and it took longer for them to respond to these items than it did to the item soliciting the length of a Senator's term in office ($M=17.32$ secs.).

[3] The same effects are observed if those not responding to the item are treated as missing data.

[4] This pattern of effects raises the possibility that some effects were mediated. For example, perhaps time pressure drives persons to seek help which, in turn, improves test performance. Mediational models such as this one were examined, but no evidence consistent with one was found.

Appendix A

HIGH EXPECTATIONS/HIGH TIME PRESSURE

For our government to work well citizens need to be informed about politics. They need to know a lot about history, current events, and the way government works, and the results of political knowledge tests show that Americans do know a lot about these things. This fact is, no doubt, an important part of our success as a nation, and has contributed in important ways to our effective democracy.

The next set of five questions taps your political knowledge.

Political surveys of this sort often include many questions, so that it becomes necessary that respondents answer the questions quickly. Because of this fact, we ask that you respond to the following set of five questions as rapidly as possible.

LOW EXPECTATIONS/LOW TIME PRESSURE

For our government to work well citizens need to be informed about politics; however, people can be informed in a variety of ways. Americans do not know much about history, current events, and the way government works. The reason that we know this is because most Americans do not get many questions right when they take political knowledge tests. On the other hand, Americans still manage to participate actively and effectively at the local, state, and national levels. They still vote, work for political campaigns, and are generally involved in their communities. These activities all contribute in important ways to our effective democracy.

The next set of five questions taps your political knowledge.

Performance on political surveys of this sort may suffer because respondents feel pressured or rushed to answer quickly. Because of this fact, we ask that you take you time when responding to the following set of five questions.

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For our government to work well citizens need to be informed about politics. They need to know a lot about history, current events, and the way government works, and the results of political knowledge tests show that Americans do know a lot about these things. This fact is, no doubt, an important part of our success as a nation, and has contributed in important ways to our effective democracy.

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The next set of five questions taps your political knowledge.

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IN ALL ONLINE CONDITIONS FOLLOWING THE INSTRUCTIONS

Please note we will not count off for spelling, just do the best you can.

Appendix B

1) What European country recently received a major bailout from the European Union?
2) Who is the Chief Justice of the Supreme Court?
3) What is the current national unemployment rate as reported by the government?
4) How long is a U.S. Senator's term in office?
5) What U.S. President was in office during the Bay of Pigs invasion?

Table 1

Political Knowledge Test Scores and Test-Taking Time by Experimental Condition.

	Venue							
Condition	Online				Telephone			
Civic Norm	Low		High		Low		High	
Pressure	Slow	Fast	Slow	Fast	Slow	Fast	Slow	Fast
Time to Complete Test (seconds)	39.15 (44.17)	28.31 (29.70)	32.16 (28.17)	28.59 (33.44)	22.25 (9.81)	17.93 (10.67)	22.70 (12.30)	19.87 (12.20)
Political Knowledge Test Score	2.40 (1.79)	2.26 (1.77)	2.43 (1.78)	2.26 (1.81)	2.40 (1.75)	2.30 (1.56)	2.65 (1.63)	2.25 (1.69)

Note: The unit of measurement for the time variable is seconds, and the cell numbers represent the average number of seconds taken to complete the test. For the political knowledge variable, the cell numbers represent the average number of questions answered correctly. Scores in the parentheses are standard deviation. None of these scores were corrected for measurement error.