SISTER DISTRICT ACTION NETWORK

Postcards to voters:
How much handwriting matters?

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Abstract: This investigation measured the efficacy of completely handwritten and partially handwritten pro-choice postcards sent to modeled pro-choice Arizona voters ahead of the 2022 primary. A randomly selected subset of 60,000 voters who met criteria (Democratic-leaning, mid-low turnout propensity, modeled pro-choice, Arizona registered voters) were randomly assigned to received a completely handwritten postcard detailing the 15 week abortion ban passed by the GOP-controlled state government, a partially handwritten postcard with the same message, or no communication. The analysis did not reveal statistically significant effects, likely due to being statistically underpowered, but trends indicate that the completely handwritten postcards performed better in terms of voter turnout than both partially handwritten postcards (by 0.52%) and no communication (by 0.39%). At the same time, trends indicated that the partially handwritten postcard was less effective than no communication in this sample. Further, there was a marginally statistically significant interaction between the two postcard conditions and pro-choice issue scores in the treatment-on-treated analysis, such that at higher levels of issue support (closer to 100), the partially handwritten postcard was more effective, and at lower levels of issue support (closer to 70), the completely handwritten postcard was more effective. While these results are not statistically significant, the trends suggest that the fully handwritten postcards were associated with a small, positive boost to voter turnout, as expected, but that partially written postcards with the same message did not share this positive effect. Initial indications suggest that completely handwriting postcards is key to their efficacy.

Takeaways:

- People who received completely handwritten postcards voted at the highest rate, followed by people in the control group, and then people in the partially handwritten postcard group, though these results were not statistically significant.
    - In the regression, which controls for other covariates that affect voting behavior, both the completely and partially handwritten postcard conditions had higher turnout than controls, but neither was statistically significant in either set of models (ps = 0.170 and 0.365 and ps = 0.734 and 0.897, respectively).
- Postcards did not work differently for people with different predicted turnout scores.
    - It appears that voters at all levels of predicted turnout in this sample reacted about the same way to the postcards (all ps > 0.6).
- Postcards did appear to work differently based on how much people were modeled to care about abortion rights, but this result was only marginally statistically significant in the treatment-on-treated (ToT) model.
    - People who were projected to care more about abortion were more likely to respond positively to the partially handwritten postcard, and people who were at

the lower end of the score range (70-100) were more likely to respond positively to the completely handwritten postcard (p = 0.104).

- The results generally suggest that people who received totally handwritten postcards saw a small boost to turnout, but people who received partially handwritten postcards generally did not. These results need to be taken with caution because they did not rise to the level of statistical significance, and the effects seen in this sample are small. The study requires replication to confirm, but inital results suggest that partially handwritten postcards are not as effective as completely handwritten postcards.
- Turnout in the primary was lower than expected, and the magnitude of the effect was smaller than expected. It is possible that the non-competitive nature of the statewide Democratic primaries (for Governor and for US Senate) contributed to a lower rate of turnout for offices downballot.
- Inclusion criteria was fairly narrow, focusing on pro-choice, left-leaning, mid-low predicted primary election turnout Arizona voters. This means the results are not widely generalizable.
- The study is statistically underpowered, so findings should be interpreted with caution and the results should be replicated in a larger sample for more conclusive interpretations.

I. Background and Research Question

This work was conducted to determine if volunteer postcards to voters are as effective when they are only partially handwritten as compared to when they are entirely handwritten. It has been suggested that the efficacy of volunteer postcarding comes from the handwritten elements imparting personal acknowledgement. But studies about partially handwritten letters, like those conducted by Vote Forward, suggest that partially handwritten materials may also impart this personal acknowledgement. As added benefits, printed messages can be longer than handwritten messages, they are faster for volunteers to process, and they are easier for recipients to read. This study chiefly sought to determine if volunteer postcards to voters are more effective when completely handwritten.

Secondarily, this study also served as a continued exploration into the efficacy of values-matched messaging, where messages about specific issues are targeted to voters who are predicted to care about those specific issues. In this study, inclusion criteria required that targets had a modeled pro-choice issue support score from TargetSmart of 70-100, and the postcard message focused on pro-choice issues (a state level abortion ban). We found this tactic to be effective in the 2021 general election.

To our knowledge, this is the first head to head study that compares completely handwritten and partially handwritten postcards to voters. This work was conducted by Sister District Action Network (SDAN) with assistance from Sister District volunteers.

II. Study Design

This study was a randomized controlled trial (RCT) designed by SDAN. The study targeted a randomly chosen subset of 60,000 registered Arizona voters who met the inclusion criteria

detailed below. Once voters met inclusion criteria, they were block randomized by predicted midterm turnout propensity score to ensure equal distribution of voter propensity in all 3 conditions. Voters were proportionally enrolled in the study based on the size of the block (e.g., a block of turnout propensity scores that included twice as many people as a different block would include twice as many targets enrolled into the sample as the smaller block). This resulted in 30,000 voters in the control condition and 15,000 voters in each of the two postcard treatment conditions for a total n of 60,000.

In the control condition, targets received no communication. In the postcard conditions, targets received a postcard with the same image, the same script, and the same highlighting and marks of emphasis. In the completely handwritten condition, all elements of the postcard were handwritten. In the partially handwritten condition, only the address, the greeting, and the volunteer name were handwritten, but the main message was printed.

SDAN provided training and detailed instructions and a script to volunteer leaders, who in turn trained their volunteer teams and quality checked their postcards to ensure compliance. Volunteers completed the postcards and sent them in bulk to an in-state partner in Arizona for in-state mailing around July 18-19, 2022. We estimate that they were delivered to homes from July 20-22, 2022. After the election, data was matched back to TargetSmart's voter file to determine if voters targeted in this study voted in the 2022 Arizona primary election.

A total of 1,034 voters did not match back to the voter file and a number of postcards were either unassigned or not mailed, so this analysis includes both a treatment-on-treated (ToT) analysis that excludes all of these individuals (3,535) and an intent-to-treat (ITT) analysis that includes all individuals who were originally enrolled in the sample, including those who did not match back to the voter file.

Inclusion criteria - The target universe for this study was registered Arizona voters who 1) are considered 'Biden surge' voters (people who voted in the 2020 general election but did not vote in the 2016 general election, and may or may not have voted in the 2018 general election); 2) have modeled support score 70+ on pro-choice; 3) have 80+ scores on partisanship; 4) were born before or on October 1, 1998 (since October 10, 2016 was the final deadline to register for the 2016 general election in Arizona and TargetSmart records birthdays as only month and year without day).

III. Results

Main Model.

The main model focuses on whether or not the target voted in the 2022 Arizona primary based on the condition they were enrolled in. Logistic regression was used to assess differences between conditions with respect to voting (yes, no), after controlling for age, partisanship, turnout, pro-choice issues score, the dummy variables for race (Black, Asian, Hispanic, Native American, Uncoded), and the dummy variables for gender (male, unknown). As mentioned above, both ToT and ITT results are presented.

Table 1: ToT Effects by condition

Voted?	Control	Handwritten postcard	Partially handwritten postcard
No	23,735	10,868	11,077
Yes	5,623	2,639	2,601
Total	29,358	13,507	13,678
Turnout rate	19.15%	19.54%	19.02%
Rate over controls		0.39%	-0.13%

The main model reveals no statistically significant main effects of condition (ps ≥ 0.170), which is likely due to lack of statistical power at this sample size. However, the regression results do trend in the expected direction, with postcards outperforming controls when covariates are controlled for.

Table 2: Main model with voting outcome (ToT) - Estimated odds ratios (robust standard errors), 95% confidence intervals, and p-values for the relationship between positive response, randomized condition, and other predictor variables.

Variable	Odds Ratio (Std. Err.)	Z score	95% Conf. Interval	p-value
Condition (Ref=controls)				
Handwritten	1.041711 (0.0310094)	1.37	0.982672-1.104296	0.170
Partially handwritten	1.010186 (0.0300929)	0.34	0.952894-1.070923	0.734
Age				
	1.023973 (0.0007528)	32.22	1.022498-1.025449	<0.001*
Gender (Ref=Female)				
Male	1.157149 (0.0328713)	5.14	1.094483-1.223403	<0.001
Unknown	0.7818915 (0.0299274)	-6.43	0.725381-0.842804	<0.001
Race (Ref=white)				
Black	0.8117647 (0.0714803)	-2.37	0.683089-0.964680	0.018*
Asian	1.005057 (0.1354606)	0.04	0.771732-1.308925	0.970
Hispanic	0.9584669 (0.0295191)	-1.38	0.902322-1.018105	0.168

Native American Uncoded	0.9326881 (0.0880545) 1.10387 (0.0566259)	-0.74 1.93	0.775131-1.122271 0.998282-1.220626	0.460 0.054 †
Partisanship				
	1.038776 (0.0041628)	9.49	1.030649-1.046967	<0.001*
Turnout				
	1.044998 (0.0006833)	67.31	1.043659-1.046338	<0.001*
Pro-choice support				
	1.007638 (0.0024716)	3.10	1.002805-1.012494	0.002*

N = 56,543, χ^2 (13) = 10822.43, p <0.001, pseudo R^2 = 0.1956; * = significant at the 0.05 level, † = significant at the 0.1 level

In a recoded model that directly compares the two treatment conditions, the effect was not statistically significant but trended in the expected direction, with completely handwritten postcards estimated at a higher efficacy (z = 0.88, p =0.377, Odds Ratio = 1.031207, 95% CI =0 .9632558-1.103951).

The main model was also run using the entire dataset for the ITT effects. Both the treatment effects and the regression results are largely the same, but estimates are attenuated compared to the ToT analysis.

Table 3: ITT Effects by condition

Voted?	**Control**	**Handwritten postcard**	**Partially handwritten postcard**
No	24,354	12,125	12,193
Yes	5,646	2,875	2,807
Total	30,000	15,000	15,000
Turnout rate	18.82%	19.16%	18.71%
Rate over controls		0.34%	-0.11%

Table 4: Main model with voting outcome (ITT) - Estimated odds ratios (robust standard errors), 95% confidence intervals, and p-values for the relationship between positive response, randomized condition, and other predictor variables.

Variable	Odds Ratio (Std. Err.)	Z score	95% Conf. Interval	p-value
Condition (Ref=controls)				
Handwritten	1.02629 (0.0294256)	0.91	0.970207-1.085614	0.365
Partially handwritten	1.00375 (0.0288976)	0.13	0.948680-1.062017	0.897
Age				
	1.022602 (0.0007265)	31.46	1.021179-1.024027	<0.001*
Gender (Ref=Female)				
Male	1.159027 (0.0319459)	5.35	1.098075-1.223362	<0.001
Unknown	0.7817971 (0.029128)	-6.61	0.726742-0.841023	<0.001
Race (Ref=white)				
Black	0.8298993 (0.0711974)	-2.17	0.701456-0.981862	0.030*
Asian	1.040474 (0.1362396)	0.30	0.804961-1.344893	0.762
Hispanic	0.9786469 (0.0293192)	-0.72	0.922837-1.037832	0.471
Native American	0.9795811 (0.086777)	-0.23	0.823448-1.165319	0.816
Uncoded	1.109885 (0.0553864)	2.09	1.006469 -1.223926	0.037*
Partisanship				
	1.039095 (0.0040674)	9.80	1.031153-1.047097	<0.001*
Turnout				
	1.043721 (0.0006573)	67.95	1.042434-1.045011	<0.001*
Pro-choice support				
	1.008419 (0.0023997)	3.52	1.003726-1.013133	<0.001*

N = 60,000, χ^2 (13) = 10929.19, p <0.001, pseudo R^2 = 0.1880; * = significant at the 0.05 level, † = significant at the 0.1 level

Moderation models.

We tested two possible moderation effects: moderation of the effect of condition based on predicted turnout propensity, and moderation of the effect of condition based on predicted pro-choice support score. The same model was used as in the main model, except these models

also included an interaction term between the two variables being tested in the moderation model (turnout x condition and pro-coice x condition, respectively).

ITT: There were no statistically significant interaction effects of turnout x condition, nor did they trend towards marginal significance (ps > 0.36), indicating no significant moderating effect of predicted turnout on the efficacy of condition.

There were also no significant interaction effects between pro-choice issues scores and condition (ps >0.30)

ToT: There were no statistically significant interaction effects of turnout x condition, nor did they trend towards marginal significance (ps > 0.44), indicating no significant moderating effect of predicted turnout on the efficacy of condition.

There was, however, a marginally significant interaction effect between pro-choice issue scores and condition in the ToT model.

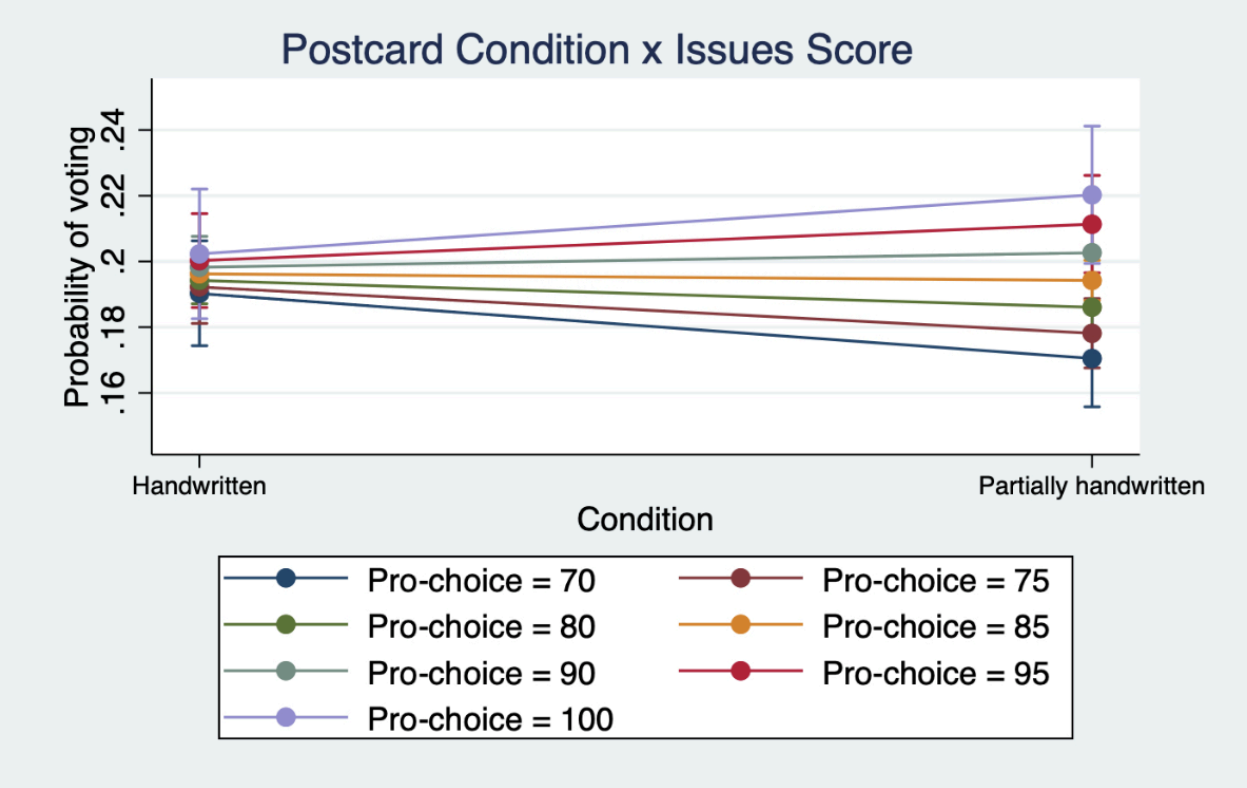
Table 5: Issue score moderation model with voting outcome (ToT) - Estimated odds ratios (robust standard errors), 95% confidence intervals, and p-values for the relationship between positive response, randomized condition, and other predictor variables.

Variable	Odds Ratio (Std. Err.)	Z score	95% Conf. Interval	p-value
Condition (Ref=Handwritten)				
Controls Partially handwritten	0.7103418 (0.3224877) 0.4102211 (0.2177099)	-0.75 -1.68	0.291764-1.729433 0.144969-1.160813	0.451 0.093 †
Condition x Pro-choice support				
Controls Partially handwritten	1.003608 (0.005439) 1.010345 (0.0064002)	0.66 1.62	0.993004-1.014325 0.997879-1.022968	0.506 0.104 †
Age				
	1.023976 (0.0007529)	32.22	1.022501-1.025452	<0.001*
Gender (Ref=Female)				
Male Unknown	1.156875 (0.032866) 0.781797 (0.0299258)	5.13 -6.43	1.094219-1.223118 0.725290-0.8427068	<0.001 <0.001
Race (Ref=white)				
Black	0.8121487 (0.0715262)	-2.36	0.683392-0.9651642	0.018*

Asian Hispanic Native American Uncoded	1.006408 (0.13561) 0.9587138 (0.0295274) 0.9336823 (0.0881624) 1.103739 (0.0566182)	0.05 -1.37 -0.73 1.92	0.7728181-1.310601 0.9025532-1.018369 0.7759342-1.123501 0.9981653-1.220479	0.962 0.168 0.467 0.054 †
Partisanship				
	1.038811 (0.0041633)	9.50	1.030682-1.047003	<0.001*
Turnout				
	1.045003 (0.0006834)	67.32	1.043665-1.046343	<0.001*
Pro-choice support				
	1.003241 (0.0046314)	0.70	0.994205-1.012359	0.483

N = 56,543, χ^2 (15) = 10825.20, p <0.001, pseudo R^2 = 0.1956; * = significant at the 0.05 level, † = significant at the 0.1 level

Graphing this interaction indicates that efficacy of partially handwritten postcards varied based on recipient issue scores much moreso than the efficacy of completely handwritten postcards. Further, the partially handwritten postcards appear to be more effective for people with higher issue scores and the completely handwritten postcards appear to be more effective for people with lower issue scores. It should be noted that issue scores were limited to 70-100, so everyone in the sample had a relatively high modeled pro-choice issue support score.



Costs.

Costs in the completely handwritten program (estimated with ToT effects) were approximately $8,780 ($0.65 per postcard/stamp x 13,507 postcards) before overhead. This condition garnered approximately 52 additional votes compared to the control condition, so pre-overhead cost per vote is $169. This means the VPK, or votes per $1,000 spent, for this tactic was 5.9.

Cost per vote and votes per $1,000 spent cannot be calculated for the partially handwritten condition as there was higher voter turnout in the control group compared to the partially handwritten treatment group.

VIII Conclusions, Limitations, and Future Research

The conclusions in this study are hard to parse since the study is underpowered. However, the results suggest that, as expected, completely handwritten postcards boosted turnout more than doing nothing. But partially handwritten postcards did not perform similarly to completely handwritten postcards, with this condition having the lowest turnout in the sample. This initial suggestive result indicates that there is something important about the handwriting on volunteer-written postcards to voters, and that partial handwriting may not carry the same quality for recipients. Interestingly, there was a marginally significant interaction between issues score and the treatment conditions in the ToT analyses such that the partially handwritten postcards performed better with people at the top of the issues support score band in the study (70-100),

but completely handwritten postcards performed better with people at the lower end of this score band. This same effect was not found in the ITT analyses.

There are also some limitations to this study. Primaries are quieter election contests than general elections, with voters receiving fewer election messages and materials. However, the statewide contests for Governor and US Senate did not have competitive primaries, which may have attenuated turnout in this election for Arizona voters. The study also focuses on a very specific group of people: Biden surge voters who are pro-choice, Democratic-leaning, and live in Arizona. This indicates that these results should not be widely generalized, but rather serve as an initial data point.

Future studies that focus on a comparison between completely and partially handwritten postcards should consider using larger ns in more competitive elections that elicit higher voter turnout. They may also explore different issues with more generalizable populations.

Appendix

Postcard script:
(volunteers included highlighting and marks of emphasis for visual interest)

> "Hi <<first name>>,
>
> With abortion challeged at the Federal level, the GOP-controlled AZ state legislature passed a 15 week abortion ban. *State legislatures* are the final frontier for repro rights.
>
> Be a voter Aug. 2 (primary election) AND Nov. 8 (general election)!
> *azsos.gov/elections*
>
> <Vol name>"

Postcard image:

