

Twitterbot says "Vote!"

Sam Firke

Nerd Nite Ann Arbor – November 19th, 2015

(unscientific) Engagement polling

Raise your hand if you...

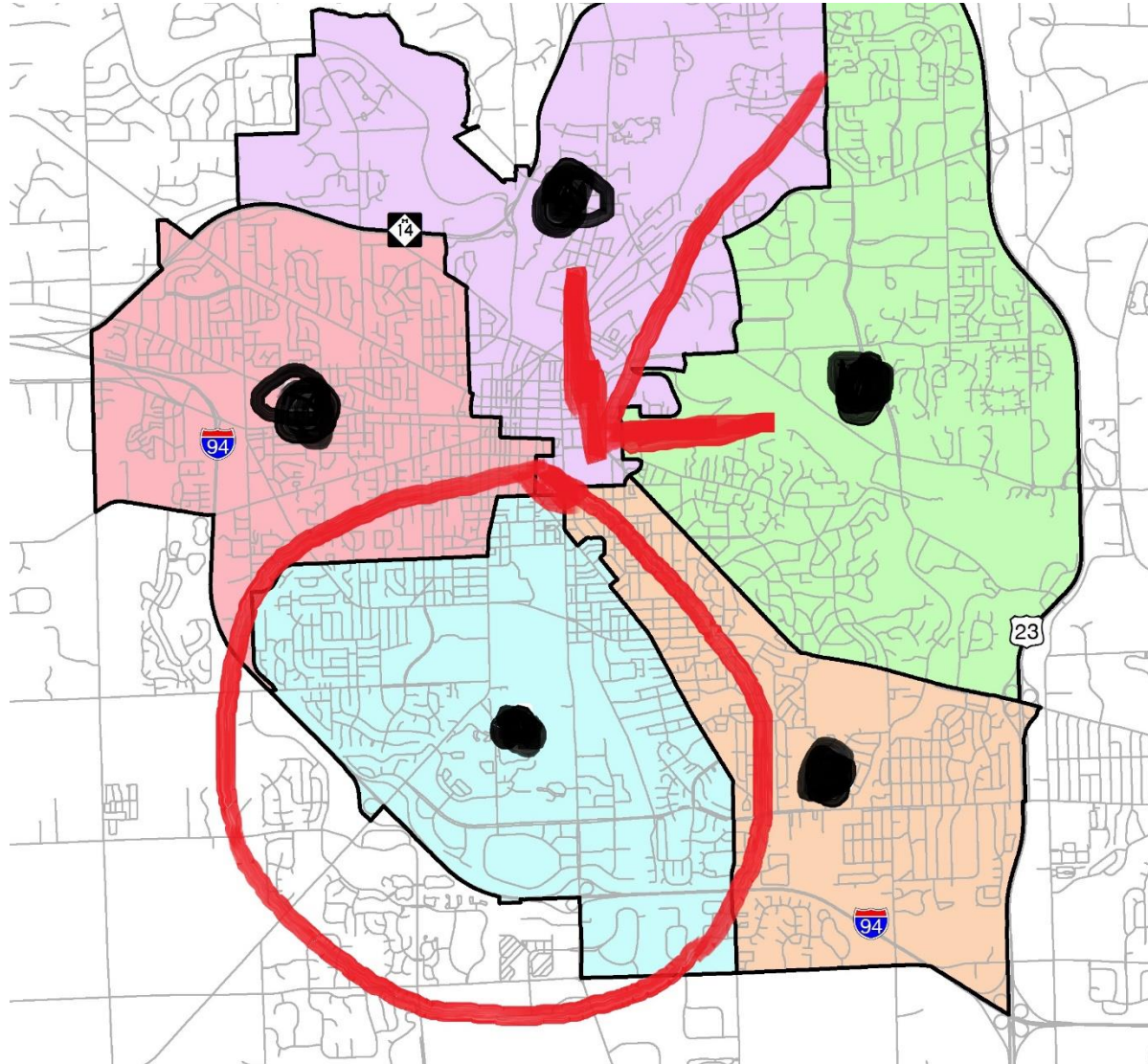
- 1. Are registered to vote in Ann Arbor**
- 2. Can name either of your city council representatives**
- 3. Can name *both* of your city council representatives**
- 4. Voted in a city council election this year (August or November)**

And a quick quiz

POP QUIZ

How many wards make up Ann Arbor?

Name this ward:



Which of these people do not currently serve on Ann Arbor's City Council?

1



2



3



4



5



6

7

8

9

10

<https://localwiki.org/ann-arbor/> ; photos courtesy of the Ann Arbor Chronicle

http://journalstar.com/news/local/perlman-throws-flag-on-ron-brown-s-omaha-city-council/article_486450e1-105c-5d52-a109-660c0987a4c0.html

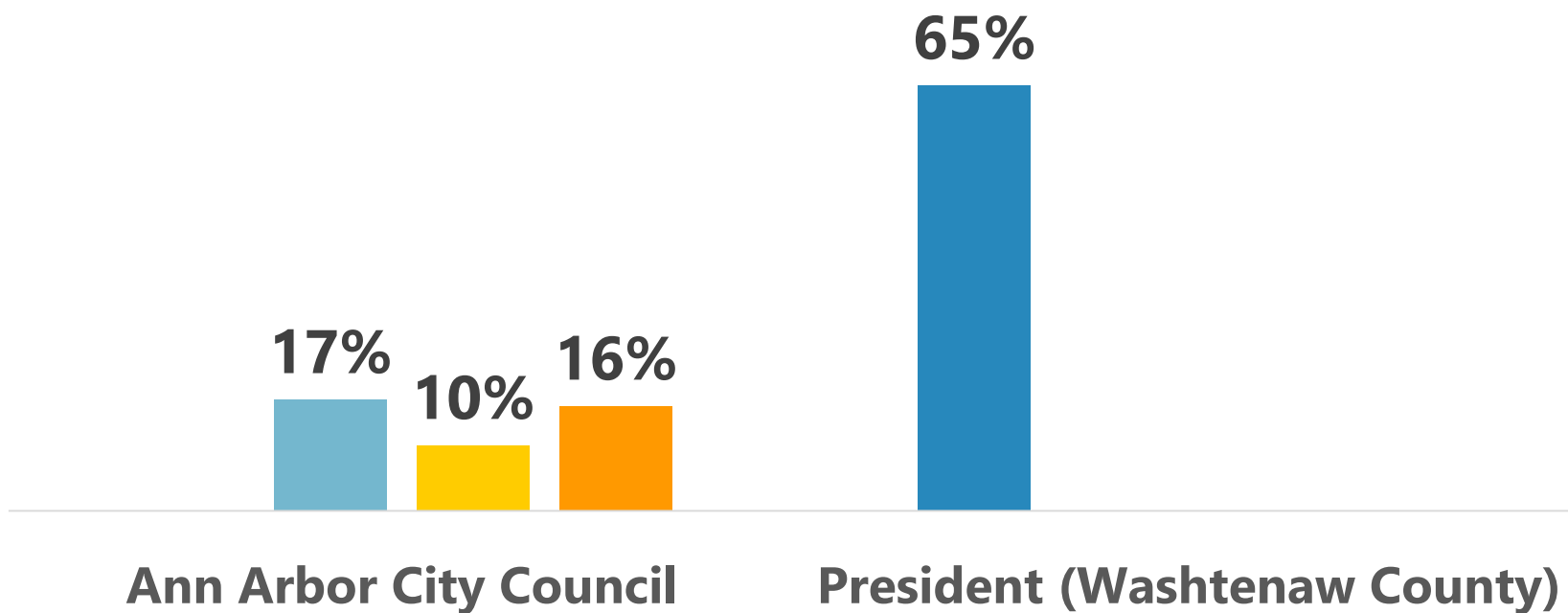
<http://www.greeleytribune.com/news/local/6417905-113/greeley-drilling-site-company#>

<http://www.a2gov.org/departments/city-council/Pages/Home.aspx>

THE PROBLEM

Turnout for off-peak elections is ... not good

Voter Turnout in Ann Arbor: 2014 - 2015



■ Nov '12 ■ Aug '14 ■ Aug '15 ■ Nov '15

Why so lousy?

- 1. Importance of August Democratic primary**
- 2. Odd year elections**
- 3. Campaign targeting**

Targeting: an example

Ward 4 Democratic Primary, August 2017

Past turnout: 1,916 (2013), 1,799 (2015)

Projected “good” turnout for 2017 \approx 2,200

Target outreach to: top \sim 2,500 most likely voters

...and ignore the other 12,000 active registered voters.

THE EXPERIMENT

Why voter outreach via Twitterbot?

- 1. Free**
- 2. Twitter data & interactions are public**
- 3. Learn something fun**

Relevant properties of Twitter

On Twitter, anyone can engage with anyone else.

The bot can begin a tweet with @<username> to “mention” a voter in a message.



Ann Arbor Votes @AnnArborVotes · Jul 30

@EmilySippola are you an Ann Arbor voter? Remember to vote in the upcoming city council election on Tuesday August 4th!



Finding our audience

Voter data:

1. Public
2. Registration & recent voting activity
3. Related information (age, location, etc.)

There are ~90k registered voters in Ann Arbor (minus about 20% for inactive or obsolete registrations).

Matching voter names to Twitter usernames

Webscraping:

- 1. Search Twitter for voter's name**
- 2. Crawl resulting usernames to see if any list their location as "Ann Arbor"**
- 3. Store matched username along with information about its activity**

Matching voter names to Twitter usernames

"Mark Schlissel"



DrMarkSchlissel
MarkSchlissel
mschliss1
mark_schlissel
marksschlissel



Ann Arbor, Michigan
<i>Missing</i>
<i>Missing</i>
<i>Missing</i>
<i>Missing</i>

Scraping a Twitter profile

Home About



TWEETS 325 FOLLOWING 133 FOLLOWERS 92 LIKES 509

Sam Firke

@samfirke

Data analysis with #rstats, Ann Arbor and Michigan politics (esp. #a2council).

Opinions tweeted are my own.

Ann Arbor, MI

20 Photos and videos



Tweets Tweets & replies Photos & videos

Pinned Tweet



Sam Firke @samfirke · Nov 12

I'm talking at @nerdnite:
@AnnArborVotes bot on
Thurs 11/19, 7pm at LIV
A2



Source code behind a Twitter profile

```
93     <span class="text">Home</span>
94   </a>
95 </li>
96 <li id="global-nav-about" class="about" data-global-action="about">
97   <a class="js-tooltip js-dynamic-tooltip" data-placement="bottom" href="/about" target="_b!
98     <span class="text">About</span>
99   </a>
100 </li>
101 </ul>
102 <div class="pull-right">
103   <div role="search">
104     <form class="t1-form form-search js-search-form" action="/search" id="global-nav-search">
105       <label class="visuallyhidden" for="search-query">Search query</label>
106       <input class="search-input" type="text" id="search-query" placeholder="Search Twitter" nar
107       <span class="search-icon js-search-action">
108         <button type="submit" class="Icon Icon--search nav-search">
109           <span class="visuallyhidden">Search Twitter</span>
110         </button>
111       </span>
112
```

Webscraping: SelectorGadget



TWEETS 325 FOLLOWING 133 FOLLOWERS 92 LIKES 509

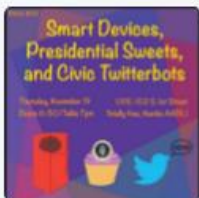
Sam Firke

@samfirke

Data analysis with #rstats, Ann Arbor and Michigan politics (esp. #a2council). Opinions tweeted are my own.

Ann Arbor, MI

20 Photos and videos



Tweets Tweets & replies Photos & videos

Pinned Tweet



Sam Firke @samfirke · Nov 12

I'm talking at @nerdnitea2 about @AnnArborVotes bot and voter Thurs 11/19, 7pm at LIVE, 102 S A2

.ProfileHeaderCard-locationText

Corresponding source code

```
1000 <div class="ProfileHeaderCard-location">
1001   <span class="Icon Icon--geo Icon--medium"></span>
1002   <span class="ProfileHeaderCard-locationText u-dir" dir="ltr">
1003     Ann Arbor, MI
1004   </span>
1005 </div>
```

Webscraping: the R code that uses this selector

Extract user's location from their profile page source code:

```
library(rvest)
user_location_raw <- webpage_source %>%
  html_nodes(".ProfileHeaderCard-locationText") %>%
  html_text()
```

Wash, rinse, repeat

For the August 2015 primary:

- **Tried to match 52,035 voter names in wards 3-5**
- **Found 2,091 matches (4% hit rate).**

Time to tweet!

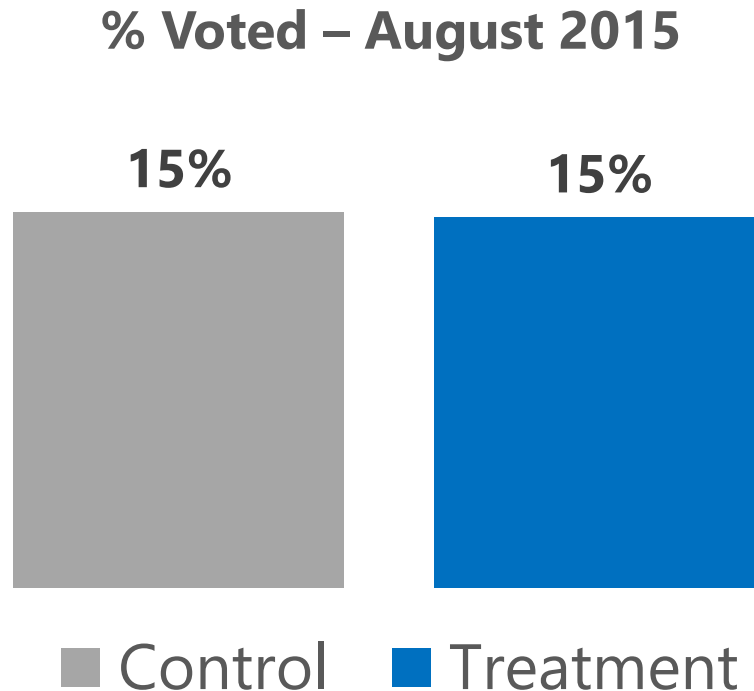
Tweeting

- **Tweeting is easier than scraping**
- **Treatment and control groups: science!**
- **Different messages and staggered tweet timing to lessen perception of spamming**

THE RESULTS

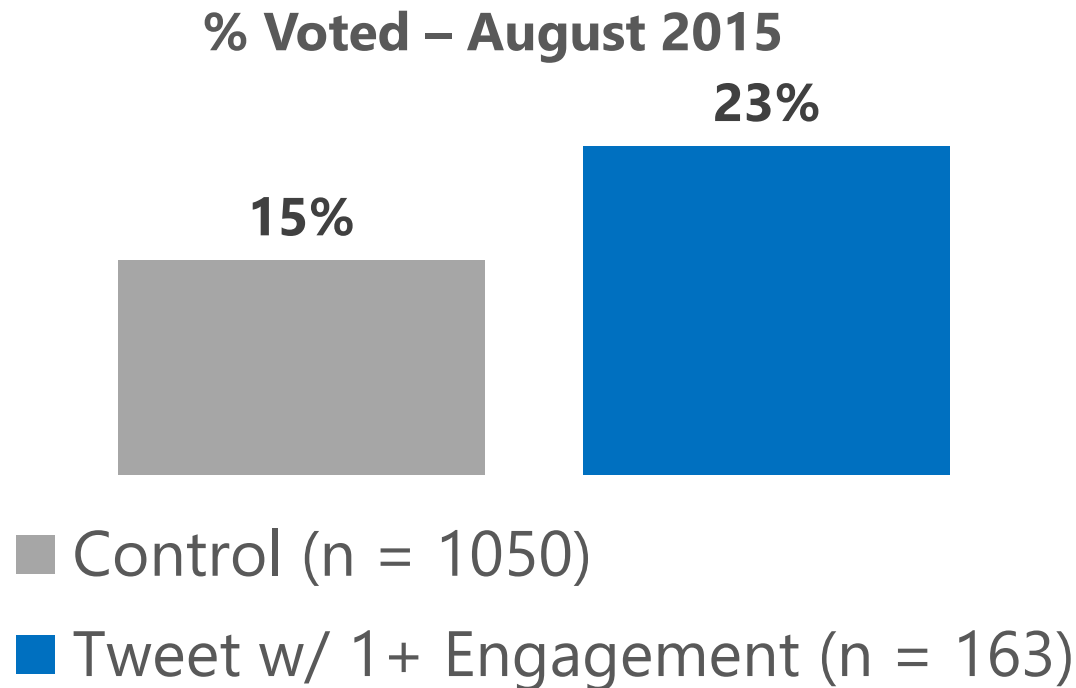
Finding #1: control vs. treatment

No overall difference between control and treatment groups:



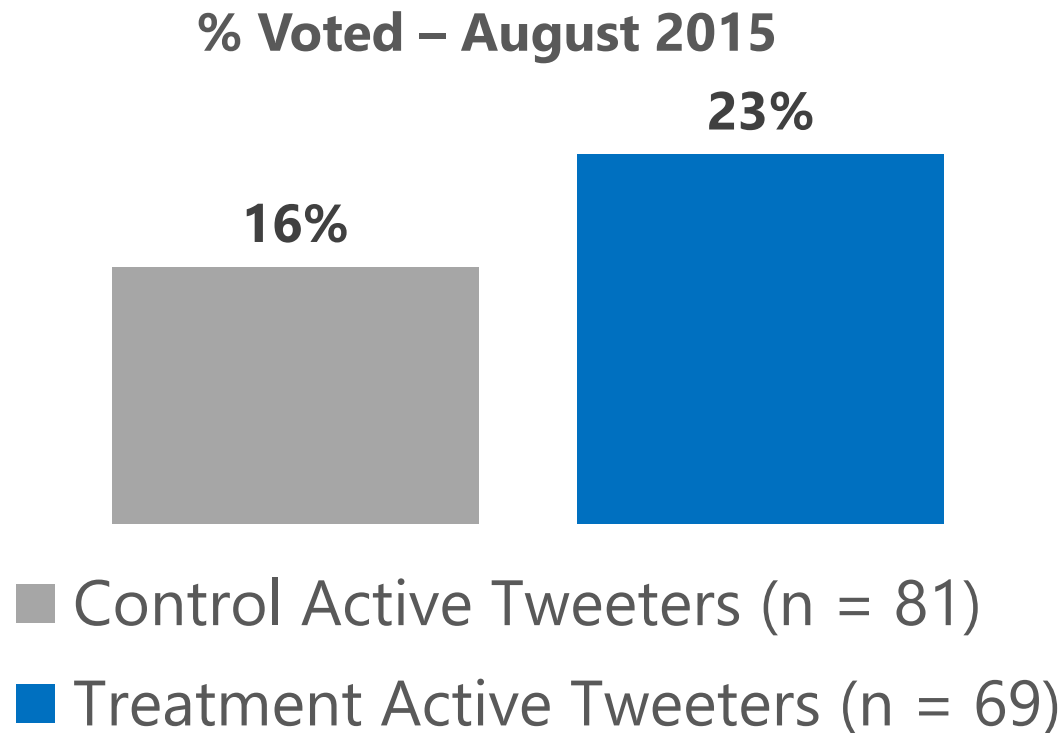
Finding #2: Those who clicked on the tweet

Voters who were sent a tweet with at least one engagement voted at a higher rate than control:



Finding #3: Everyday tweeters

Highly-active Twitter users may have a greater response to the treatment:



NOT STATISTICALLY SIGNIFICANT.

Engagement metrics

Tweeted at 1,041 voters, yielding:

- **8,500** tweet views
- **267** engagements
- **11** favorites
- **9** replies
- **6** retweets

Best response: retweet with 519 views and 17 engagements

Other outcomes



SocialGoodBot

Restricted from performing write actions

App requesting read and write permissions for bots doing social good

- **Bot suspended prior to November Ward 2 election**
- **I learned & had fun**
- **More ideas for social use of voter data...**