



Strata SC 2014

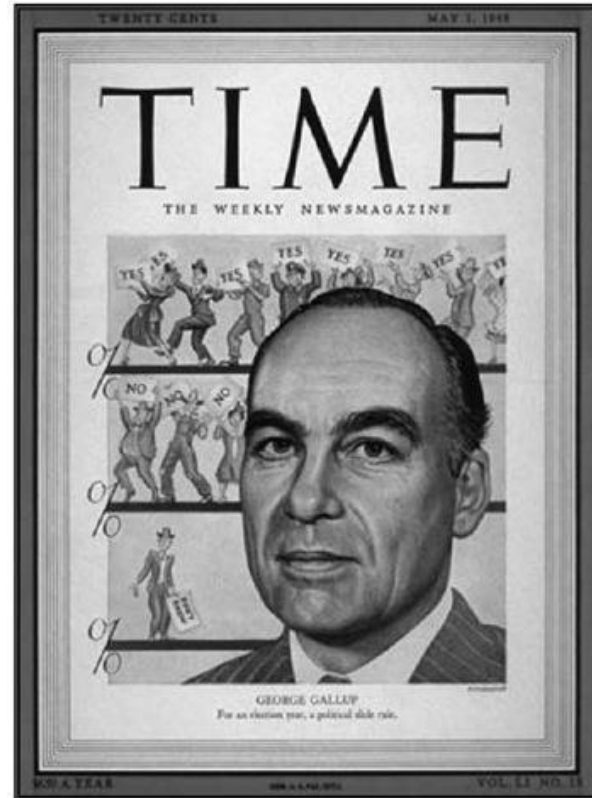
Sending Millions of Surveys Around
the World on Mobile Phones

Max Richman

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@richmanmax

*Let's kick it
old school*



1) Surveys!



Source: NY Times, Courtesy of Alcatel-Lucent USA

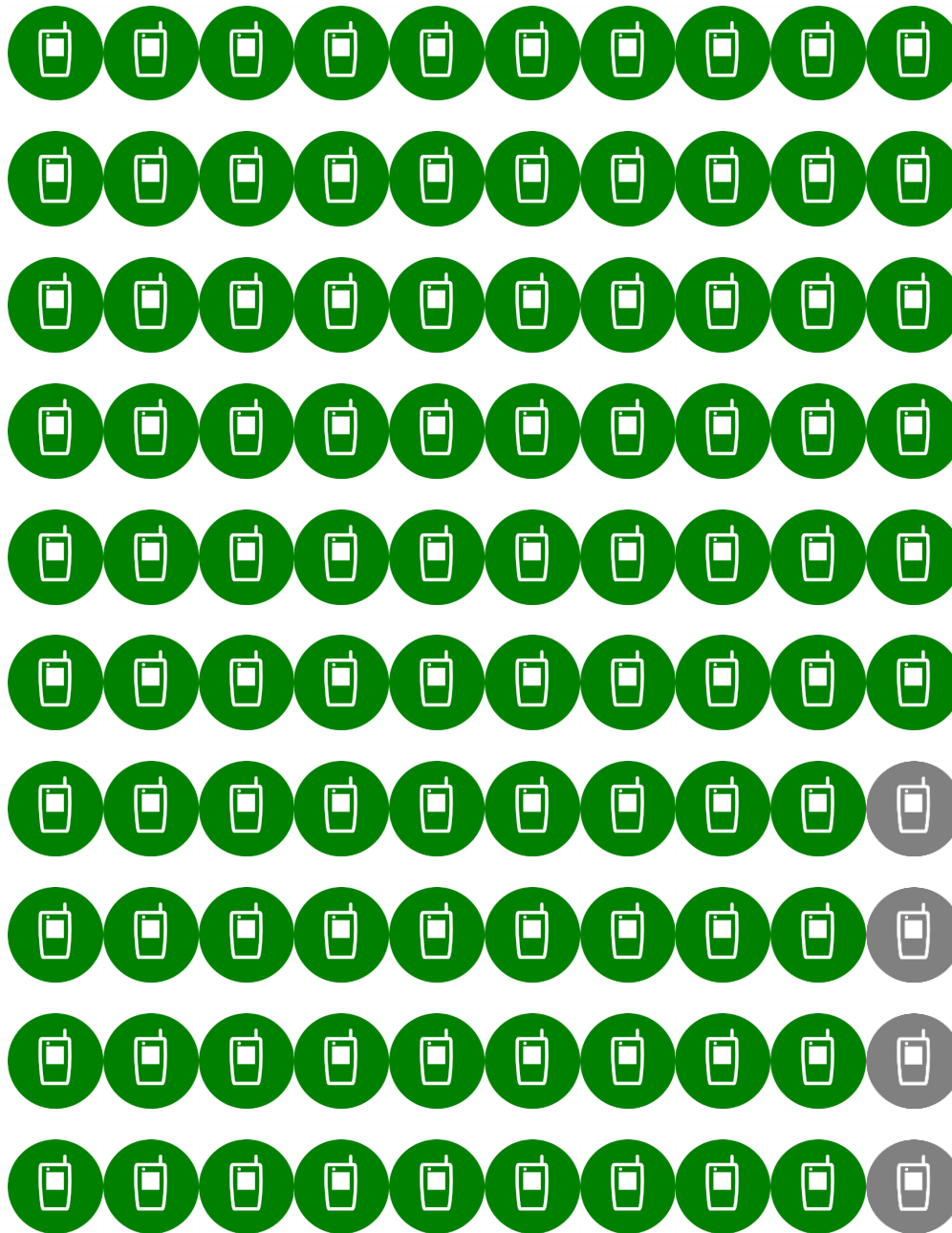
2) Dial pads!

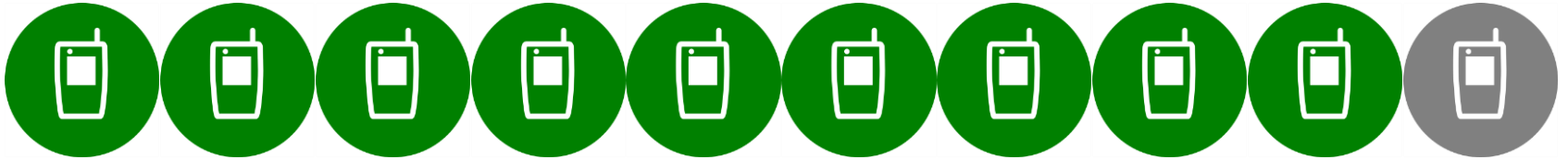


*3) Short
Message
Service!*

GR8,
ez,
chp,
& deeply
deeply
personal







3 min

Some numbers.

Highly scientific estimate of:

- [People worldwide](#)
- [Mobile subscriptions worldwide](#)
- [SMS sent since 2010](#)

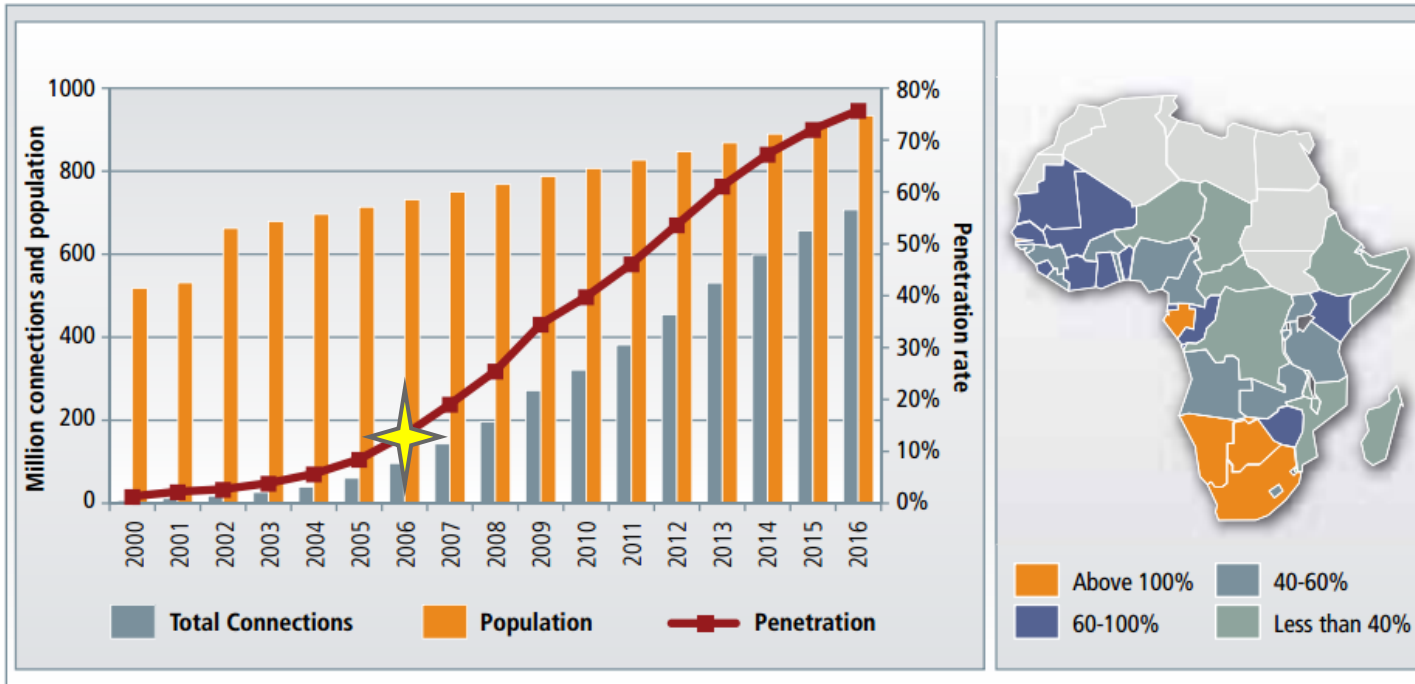


Whew, that's a lot.

Why should we be talking?

- Highest GDP growth
- Major brands are racing to be first
- Stark lack of 'offline' data
- More phones than toilets

Figure 1: Mobile connections, population and penetration in SSA since 2000; and map of mobile penetration, 2012



Source: Wireless Intelligence

 2014 Internet Penetration Estimate

Image: GSMA SSAMO 2012

How are surveys conducted
around the world?



TRIPARTITE
CORE
GROUP
(TCG)





(ASEAN, Government of the Union of Myanmar, United Nations)

TRIPARTITE
CORE
GROUP
(TCG)





Image: Wikipedia

This is the official form for all the people at this address.
It is quick and easy, and your answers are protected by law.

Use a blue or black pen.

Start here

The Census must count every person living in the United States on April 1, 2010.

Before you answer Question 1, count the people living in this house, apartment, or mobile home using our guidelines.

- Count all people, including babies, who live and sleep here most of the time.

The Census Bureau also conducts counts in institutions and other places, so:

- Do not count anyone living away either at college or in the Armed Forces.
- Do not count anyone in a nursing home, jail, prison, detention facility, etc., on April 1, 2010.
- Leave these people off your form, even if they will return to live here after they leave college, the nursing home, the military, jail, etc. Otherwise, they may be counted twice.

The Census must also include people without a permanent place to stay, so:

- If someone who has no permanent place to stay is staying here on April 1, 2010, count that person. Otherwise, he or she may be missed in the census.

1. How many people were living or staying in this house, apartment, or mobile home on April 1, 2010?

Number of people =

2. Were there any additional people staying here April 1, 2010 that you did not include in Question 1? Mark all that apply.

- Children, such as newborn babies or foster children
- Relatives, such as adult children, cousins, or in-laws
- Nonrelatives, such as roommates or live-in baby sitters
- People staying here temporarily
- No additional people

3. Is this house, apartment, or mobile home — Mark ONE box.

- Owned by you or someone in this household with a mortgage or loan? *Include home equity loans.*
- Owned by you or someone in this household free and clear (without a mortgage or loan)?
- Rented?
- Occupied without payment of rent?

4. What is your telephone number? We may call if we don't understand an answer.

Area Code + Number
 - -

OMB No. 0607-0919-C; Approval Expires 12/31/2011.

Form **D-1** (12-5-2008)

U S C E N S U S B U R E A U

5. Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.

What is Person 1's name? *Print name below.*

Last Name

First Name MI

6. What is Person 1's sex? Mark ONE box.

- Male Female

7. What is Person 1's age and what is Person 1's date of birth? Please report babies as age 0 when the child is less than 1 year old. *Print numbers in boxes.*

Age on April 1, 2010 Month Day Year of birth

→ **NOTE: Please answer BOTH Question 8 about Hispanic origin and Question 9 about race. For this census, Hispanic origins are not races.**

8. Is Person 1 of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican Am., Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin — *Print origin, for example, Argentinian, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.* ↗

9. What is Person 1's race? Mark one or more boxes.

- White
- Black, African Am., or Negro
- American Indian or Alaska Native — *Print name of enrolled or principal tribe.* ↗

- Asian Indian Japanese Native Hawaiian
- Chinese Korean Guamanian or Chamorro
- Filipino Vietnamese Samoan
- Other Asian — *Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.* ↗
- Other Pacific Islander — *Print race, for example, Fijian, Tongan, and so on.* ↗

- Some other race — *Print race.* ↗

10. Does Person 1 sometimes live or stay somewhere else?

- No Yes — *Mark all that apply.*
- In college housing For child custody
- In the military In jail or prison
- At a seasonal or second residence In a nursing home or second residence
- For another reason

→ If more people were counted in Question 1, continue with Person 2.

1. Print name of Person 2

Last Name

First Name MI

2. How is this person related to Person 1? Mark ONE box.

- Husband or wife Parent-in-law
- Biological son or daughter Son-in-law or daughter-in-law
- Adopted son or daughter Other relative
- Stepson or stepdaughter Roomer or boarder
- Brother or sister Housemate or roommate
- Father or mother Unmarried partner
- Grandchild Other nonrelative

3. What is this person's sex? Mark ONE box.

- Male Female

4. What is this person's age and what is this person's date of birth? Please report babies as age 0 when the child is less than 1 year old. *Print numbers in boxes.*

Age on April 1, 2010 Month Day Year of birth

→ **NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this census, Hispanic origins are not races.**

5. Is this person of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican Am., Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin — *Print origin, for example, Argentinian, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.* ↗

6. What is this person's race? Mark one or more boxes.

- White
- Black, African Am., or Negro
- American Indian or Alaska Native — *Print name of enrolled or principal tribe.* ↗

- Asian Indian Japanese Native Hawaiian
- Chinese Korean Guamanian or Chamorro
- Filipino Vietnamese Samoan
- Other Asian — *Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.* ↗
- Other Pacific Islander — *Print race, for example, Fijian, Tongan, and so on.* ↗

- Some other race — *Print race.* ↗

7. Does this person sometimes live or stay somewhere else?

- No Yes — *Mark all that apply.*
- In college housing For child custody
- In the military In jail or prison
- At a seasonal or second residence In a nursing home or second residence
- For another reason

→ If more people were counted in Question 1 on the front page, continue with Person 3.



BILLING CUSTOMER SATISFACTION WEB SURVEY

Please enter your password

Start

This survey requires recent versions of popular browsers to function properly. If you have Microsoft Internet Explorer 3.0 or earlier, Netscape 3.9 or earlier, or AOL 4.0 or earlier, you will not be able to take this survey unless you upgrade your software. Thank you.



[Microsoft Internet Explorer](#)



[Netscape](#)



[AOL](#)



Image: Tuppus [flickr]



Image: swanksalot [flickr]

Mobile 
Accord

 iGeoPoll



SMS,
Voice,
Data



Location
Targeting



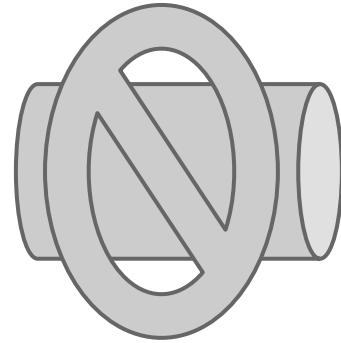
Zero rate,
Airtime,
Mobile Money



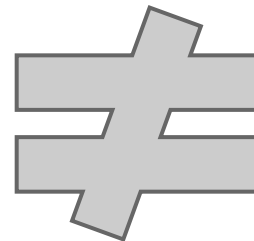
To try it out, text
geopoll to 50555

Lessons Learned from 40M+ Mobile Surveys

Petulant Pipes

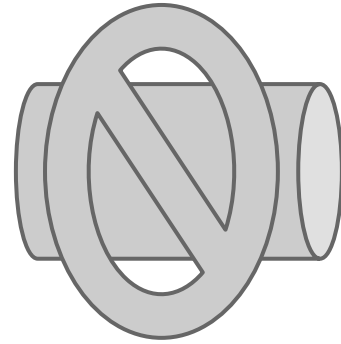


Skeptical Stats

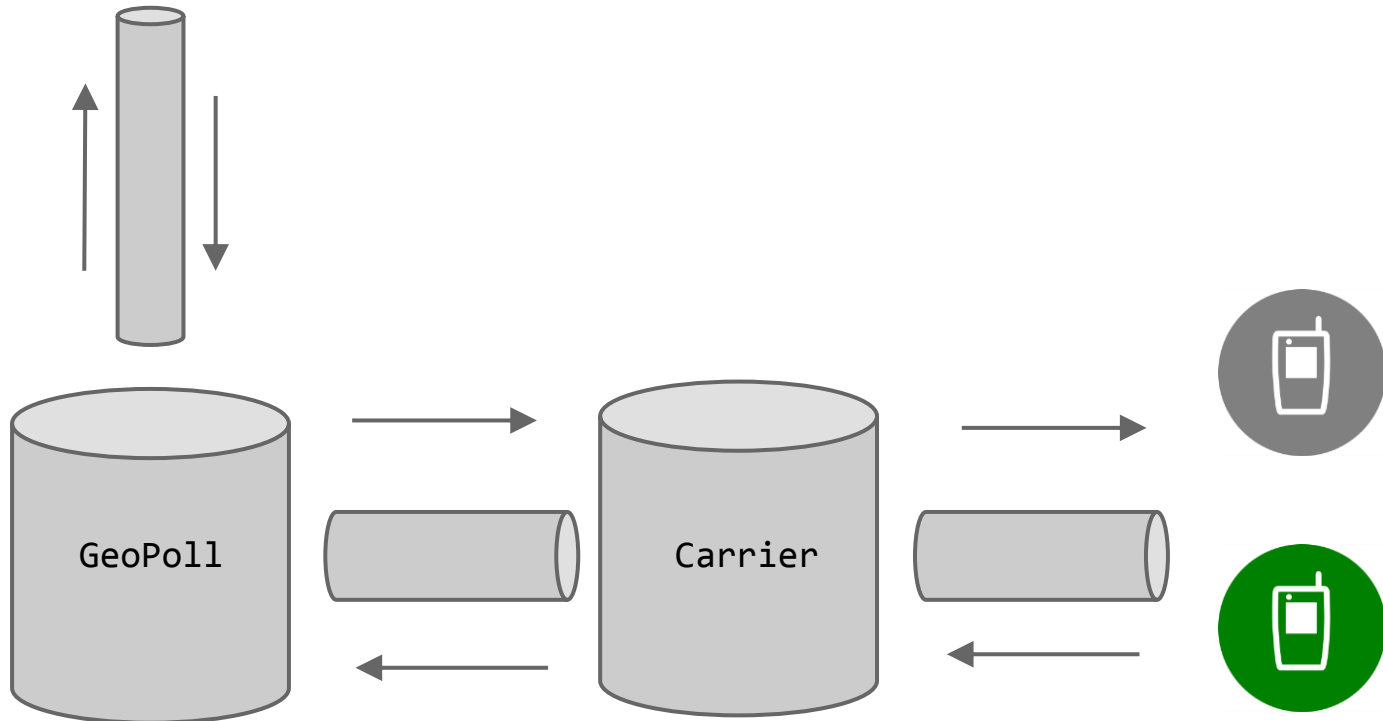
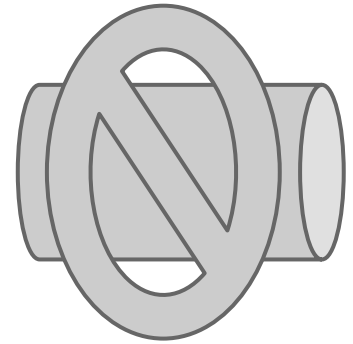


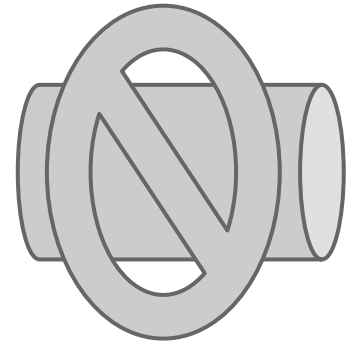
Test, test, test
pilot, pilot, pilot
iterate, iterate, iterate

Petulant Pipes



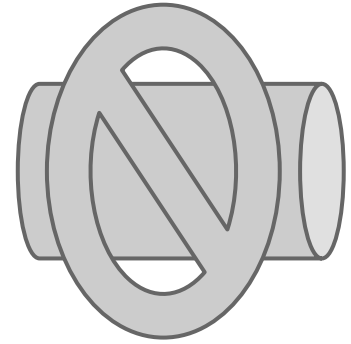
“Reply 1 to take 10 question GeoPoll survey and share your voice with the world! You will receive 50NGN for your response. No cost to reply. For help reply HELP.”





Log all the things.

Log as much, as often, and
get fast at parsing logs.

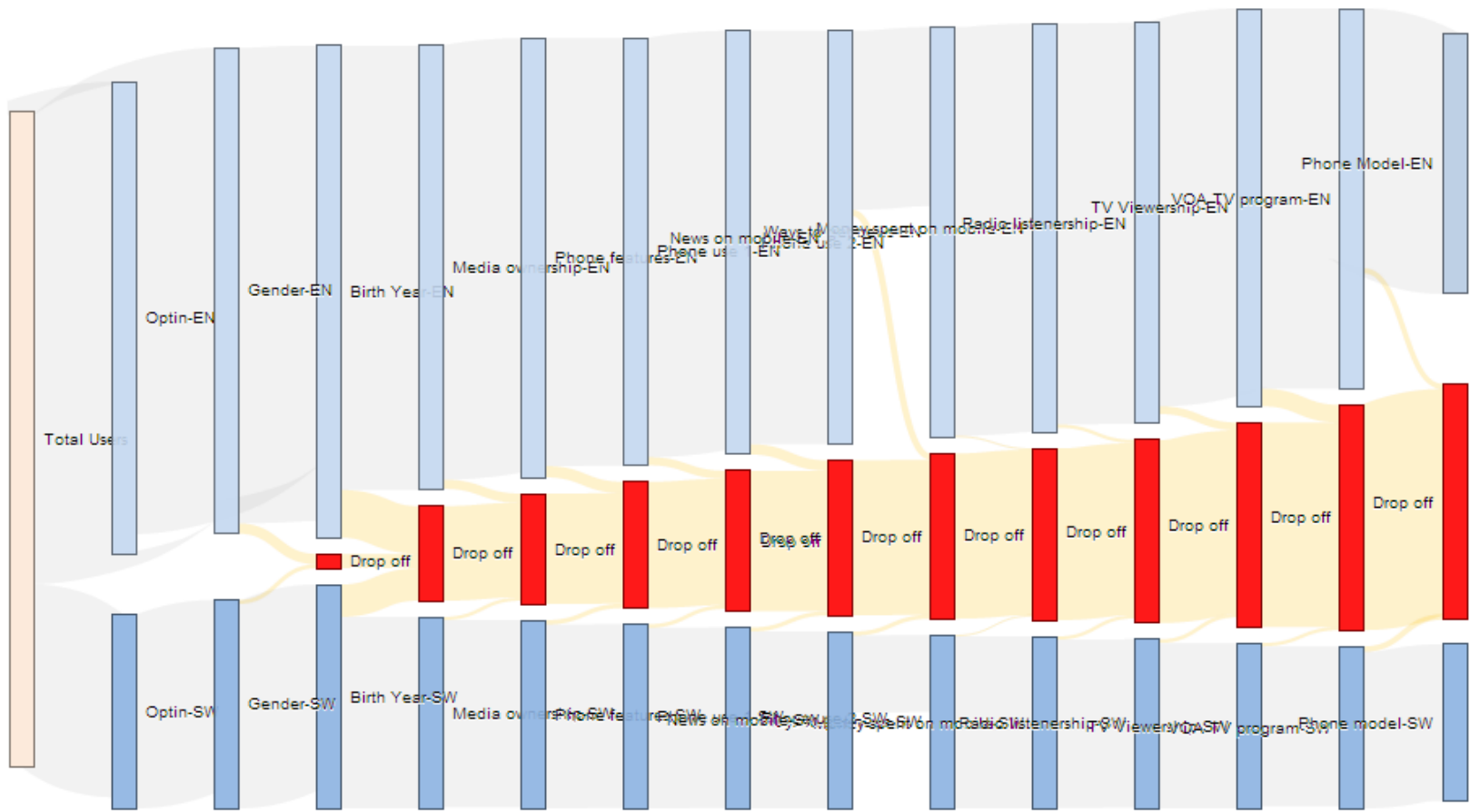
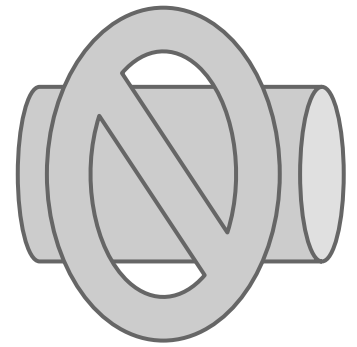


Paradata Paradise.

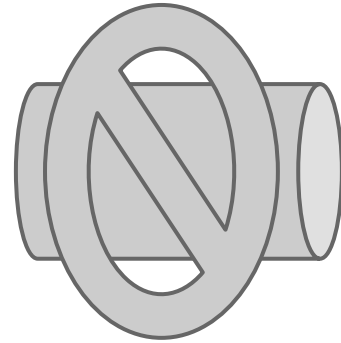
Most answer question under 1 minute.

Morning and Evening best.

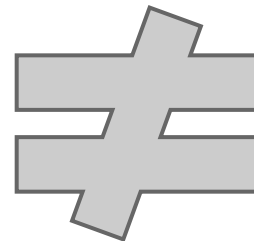
Sundays outperform weekdays.



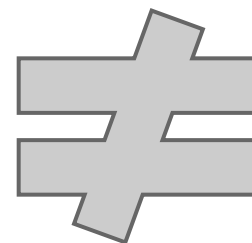
Petulant Pipes

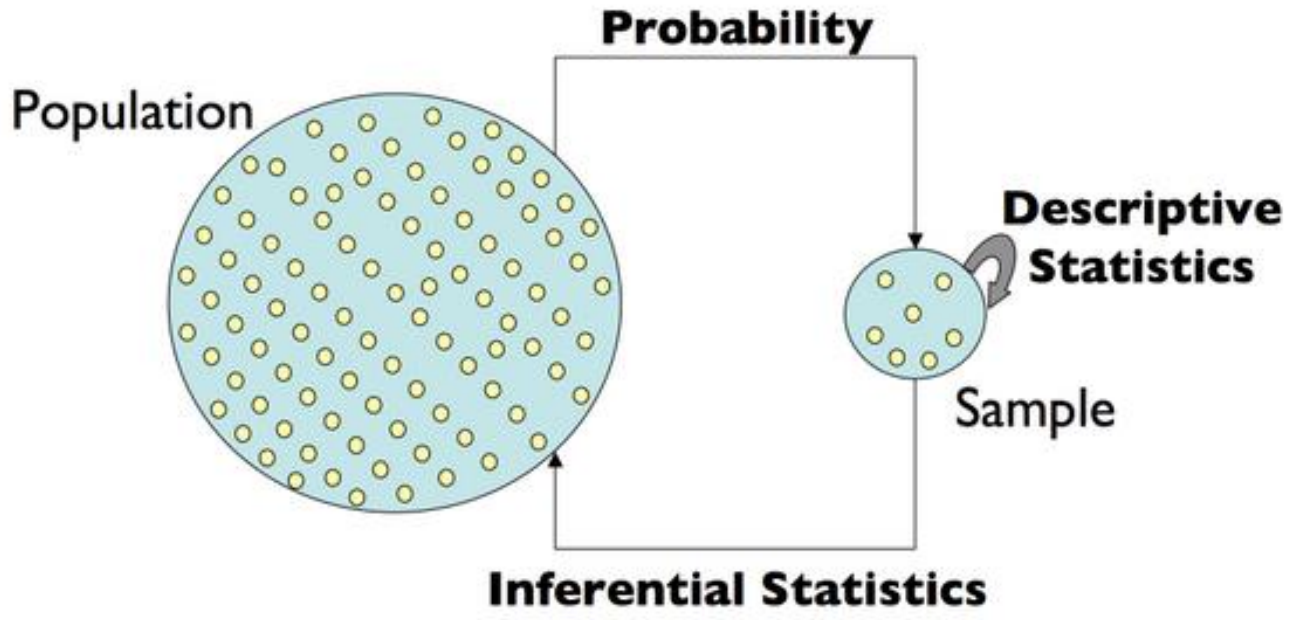
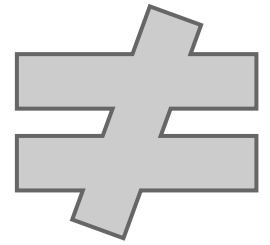


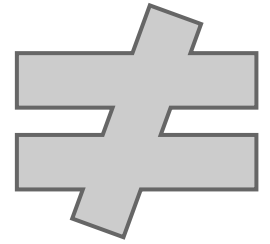
Skeptical Stats



Skeptical Stats

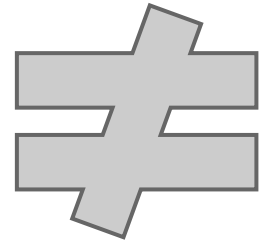






Managing biases.

- Selection
- Non-Response
- Response

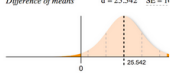


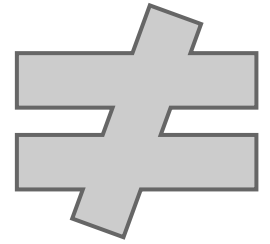
Valid test lab.

- Specify sample size
- Treatments
- Random assignment

Evan's Awesome A/B Tools

Intuitive statistical calculators, ideal for **planning** and **analyzing** A/B tests.
[Read the full announcement »](#)

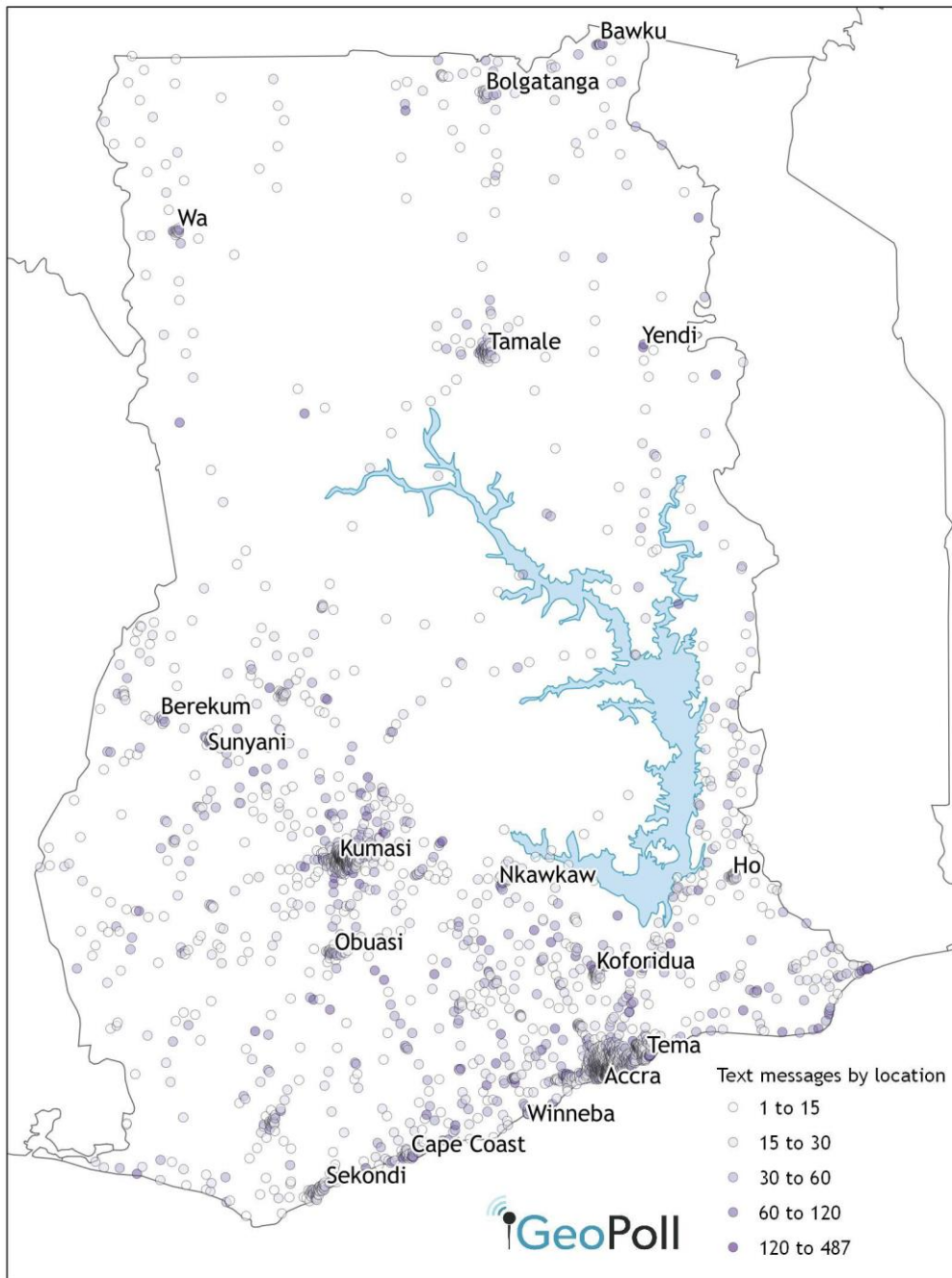
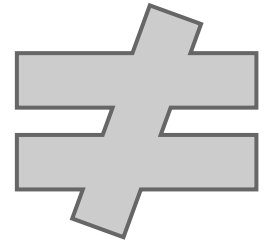
<p>Answer: 1,005 per branch</p> <p>Sample Size Calculator</p>	<p>Confidence interval</p> <p>8.5% - 22.1%</p> <p>13.3% - 28.9%</p> <p>Chi-Squared Test</p>
<p>Difference of means $d = 25.542$ $SE = 11$</p>  <p>Two-Sample T-Test</p>	<p>Confidence interval (arrival rat)</p> <p>12.2 - 30.9</p> <p>16.2 - 31</p> <p>Poisson Means Test</p>

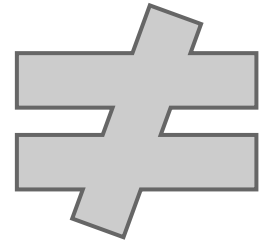


Demographic Comparisons.

- Language
- Literacy/Education
- Age
- Sex
- Location

Map of GeoPoll Respondent Locations in Ghana

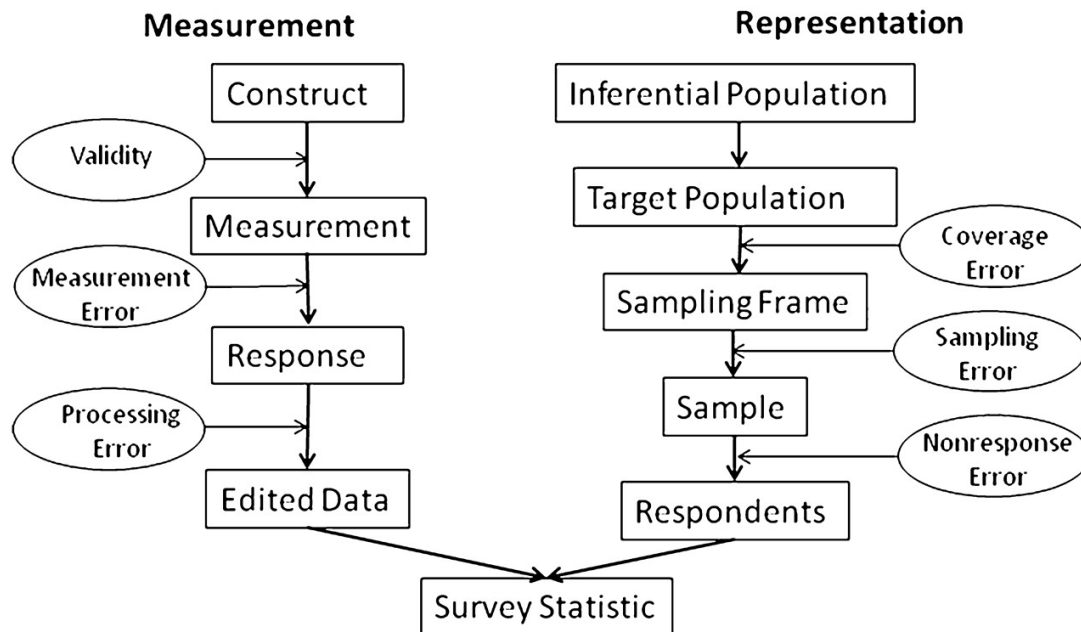
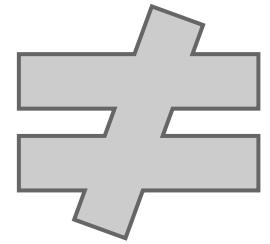




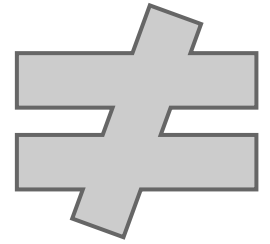
Power in panels.

Mon	Tues	Weds	Thurs	Fri	Sat	Sun

Total Survey Error



Bayesian Aggregation & Simulations



*Thanks for
kickin' it
with me.*



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the World on Mobile Phones

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