

10/21/2014

15. POPULATION: THE "PUBLIC" - WHICH IN CONTEXT I BELIEVE MEANS
ALL US CITIZENS

SAMPLE: 1001 AMERICANS SURVEYED

POP. PARAMETERS: OPINIONS ON IRAN'S NUCLEAR PROGRAM OF US CITIZENS

SAMPLE STATISTICS: " " " " " 1001 AMERICANS SURVEYED.

16. POPULATION: ALL STARS IN A GALAXY

SAMPLE: JUST A FEW STARS WITHIN IT

POPULATION PARAMETERS: DISTANCE TO EARTH OF ALL STARS IN THE GALAXY

SAMPLE PARAMETERS: DISTANCE TO EARTH OF JUST A FEW STARS

20. POPULATION: INCOMING COLLEGE STUDENTS IN THIS COUNTRY.

SAMPLE: 241,000 FIRST YEAR STUDENTS

POP. PARAM: "ATTITUDES" OF ALL INCOMING COLLEGE STUDENTS

SAMPLE STAT: "ATTITUDES" OF 241,000 FIRST YEAR STUDENTS SAMPLED.

24. 1. POPULATION: CUSTOMERS OF RESTAURANTS

GOAL: FIND AVERAGE % TIP LEFT BY ALL CUSTOMERS OF RESTAURANTS

2. CHOOSE REPRESENTATIVE SAMPLE

e.g. 10 RANDOM CUSTOMERS AT 10 RANDOM RESTAURANTS IN
10 RANDOM CITIES.

3. AVERAGE THE TIPS IN THE SAMPLE

4. INFER THAT THIS IS APPROXIMATELY THE AVERAGE % TIP OF
ALL CUSTOMERS OF RESTAURANTS

5. DRAW CONCLUSIONS - e.g. CUSTOMERS OF RESTAURANTS ARE
STINGY / GENEROUS.

25.

1. POPULATION: ALL BATTERIES IN A PARTICULAR MODEL LAPTOP
GOAL: FIND AVERAGE LIFETIME OF ALL BATTERIES IN THIS MODEL LAPTOP
2. CHOOSE REPRESENTATIVE SAMPLE
e.g. THE BATTERY OF EVERY 1,000TH LAPTOP PRODUCED
3. TEST LIFETIME OF SAMPLED BATTERIES AND FIND AVERAGE
4. INFER THAT AVERAGE LIFETIME OF ALL BATTERIES IS SAME AS AVERAGE LIFETIME OF SAMPLED BATTERIES.
5. DRAW CONCLUSIONS: e.g. BATTERIES ARE GOOD/BAD.

27.

-) FRAT/SORORITY: NOT REPRESENTATIVE
SAMPLE IS BIASED TOWARD HEAVY PARTIERS
-) ATHLETES: NOT REPRESENTATIVE
BIASED TOWARD BEST PEOPLE FOR WHOM ACADEMICS MIGHT NOT BE A HIGH PRIORITY
-) FIRST 100: PROBABLY REPRESENTATIVE (FAIRLY RANDOM)
-) HONORS STUDENTS: NOT REPRESENTATIVE
BIASED TOWARD OVERACHIEVERS.

29.

STRATIFIED

30.

CONVENIENCE

32.

SYSTEMATIC

33.

SIMPLE RANDOM SAMPLE (SRS)

35. OBSERVATIONAL , CASE - CONTROL

CASE - TENDENCY TO LIE

CONTROL - TENDENCY TO TELL THE TRUTH

37. OBSERVATIONAL , CASE - CONTROL

CASE - BECAME OVERWEIGHT

CONTROL - DO NOT BECOME OVERWEIGHT

39. EXPERIMENT

CONTROL - PLACEBO

TREATMENT - GINKGO BILOBA EXTRACT

DOUBLE-BLIND IS NECESSARY SO THAT RESEARCHERS DO NOT
TREAT CONTROL/TREATMENT PATIENTS DIFFERENTLY.

41. EXPERIMENTAL

43. OBSERVATIONAL

45. EXPERIMENTAL

47. WE ARE 95% CONFIDENT THAT THE TRUE PERCENTAGE OF VOTERS WHO FAVOR
THE REPUBLICAN CANDIDATE IS IN THE INTERVAL 50.5% - 55.5% .

SO YES , THE REPUBLICANS CAN REASONABLY EXPECT TO WIN.

49. WE CAN BE 95% CONFIDENT THAT THE TRUE PERCENTAGE OF ADULT WHO FAVOR LEGALIZED ABORTIONS IS IN THE INTERVAL 43% TO 49%.

THAT IS, 51% TO 57% OPPOSE LEGALIZED ABORTIONS.

SO YES, WE CLAIM THAT A MAJORITY OPPOSE.

50. NOTE THAT THE TRUE PERCENTAGE (61%) IS NOT IN OUR CONFIDENCE INTERVAL OF 67% TO 73%.

HOWEVER, THIS DOESN'T NECESSARILY IMPLY THAT THOSE SURVEYED

LIED, SINCE 5% OF THE TIME THE TRUE % WILL

BE OUTSIDE OF OUR CONFIDENCE INTERVAL, SIMPLY DUE TO

CHANCE.

51. SEEMS LIKE GOOD EVIDENCE THAT TREATMENT WORKS

52. SINCE THE PLACEBO IS JUST AS EFFECTIVE AS THE TREATMENT,

THERE IS NO EVIDENCE THAT THE TREATMENT WORKS.