Do you believe?

Ap Stats Selvaag 2017

By: Kaaren Spiesz

Conspiracy Theories

Definition-a belief that some covert but influential organization is responsible for a circumstance or event

- Ex. Illuminati, Avril Lavigne replaced, Aliens, US gov/ Big Brother, Fluoride, Bigfoot, Vaccination, etcetera

My question is about the correlation of genders to belief in conspiracy theories.

Randomization

So looking at the list of available classes at washburn I randomly select two classes for my survey, I took 70 surveys. I got data back and recorded it in a google sheet.

What gender do you identify as?

- Female
- Male
- Neither
- Both
- Genderfluid
- Other _____

Do you believe in conspiracy theories?

- Yes
- No

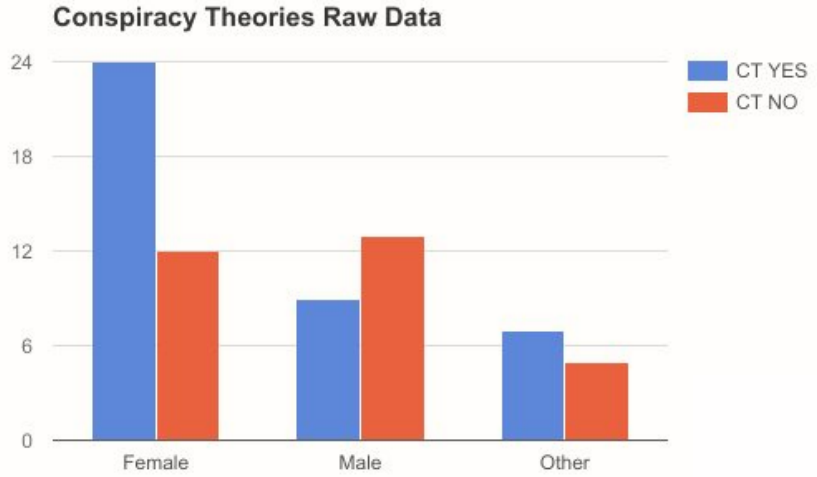
My Data

Mn	Oy	Fy	Fn	Fn	Fy	Fy
Mn	Fn	Fy	Oy	Oy	My	Fn
Fy	Fy	Fy	My	Fn	Fy	Fn
Fy	My	On	Fn	Fn	Fy	Fy
My	Mn	Fy	Oy	Oy	My	Fy
Mn	My	Mn	Mn	On	Fy	Fn
Fy	Fn	Fy	Gy	My	Mn	Fy
Fy	Mn	My	On	Fn	Mn	My
Mn	Fy	Fy	Mn	Fy	Mn	Oy
Oy	Mn	Fy	Fn	Fy	Mn	On

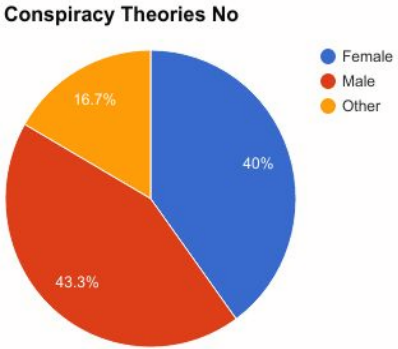
My Data

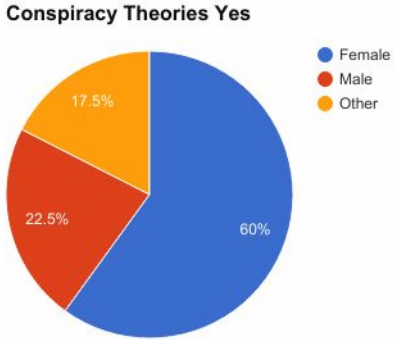
	CT YES	CT NO	Total
Female	24	12	36
Male	9	13	22
Other	7	15	12
Total	40	30	70

Graphs of Data



- Double the amount of females believe vs not believing
- Males mostly don't believe
- Other genders (Genderfluid, neither, both, etc) mostly believe





Chi Square Test For Homogeneity

P: We are interested in if genders differ with respect to belief in conspiracy theories.

H: **Ho**: Genders are the same with belief in conspiracy theories

Ha: These populations aren't the same

A: **Random**- taken in random classes with random students

Independent- Females $n<1/10N$ $36<1/10N$ more than 360 Females

Males $n<1/10N$ $22<1/10N$ more than 220 Males at washburn

Other Genders $n<1/10N$ $12<1/10N$ more than 120 Other genders

Large Counts- All Expected Counts are at least 5

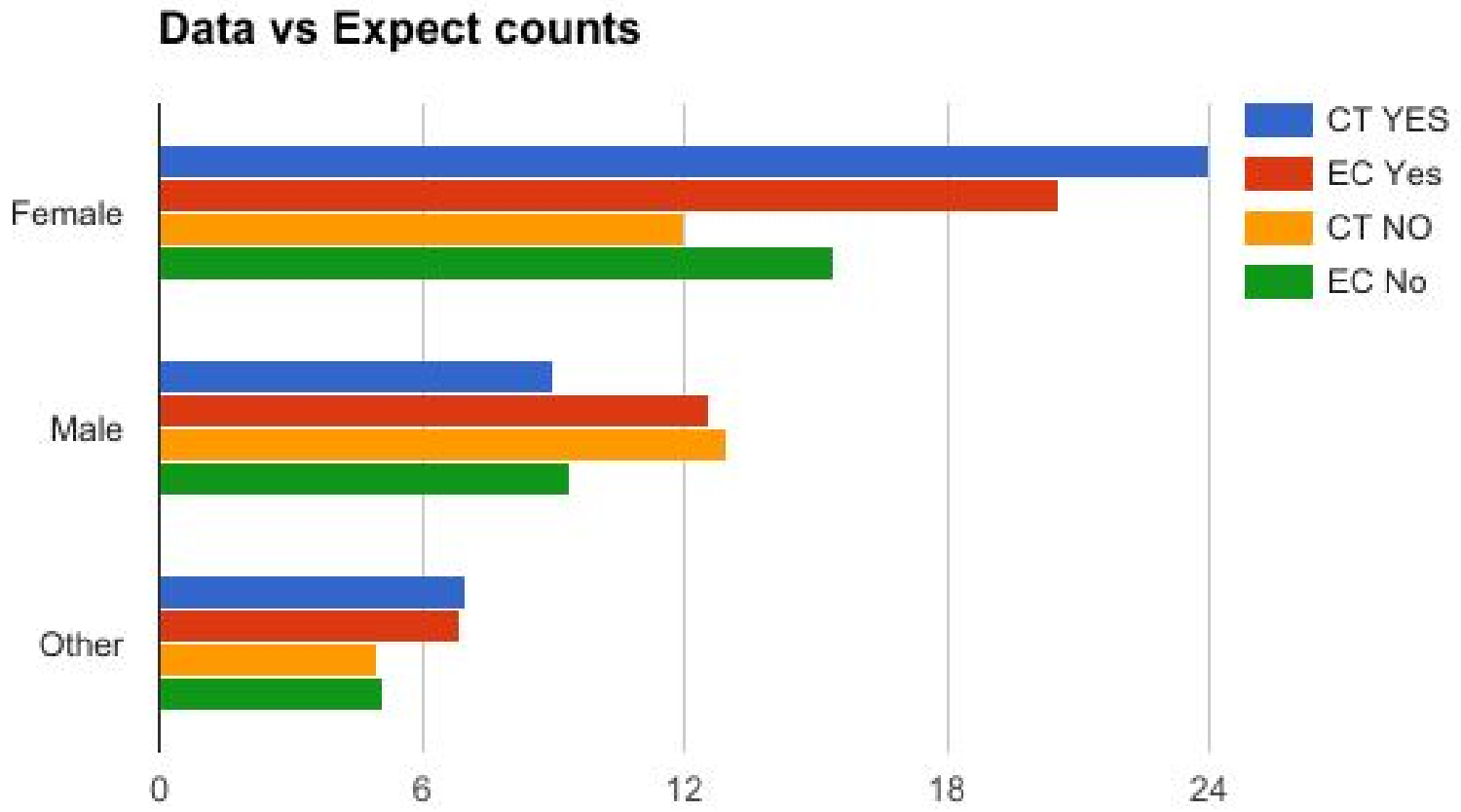
Chi Square Test For Homogeneity

N:

T: Degrees Freedom df=(r-1)(c-1) df=(3-1)(2-1) = 2

Expected Counts

	CT YES	CT NO
Female	20.57	15.43
Male	12.57	9.43
Other	6.86	5.14


Data vs Expect counts
Female
Male
Other
0
6
12
18
24
CT YES
EC Yes
CT NO
EC No

Calculations

χ^2=3.707 With 2 Degrees Freedom

In the table this becomes between .15 and .20 tail probability

Because the p-value is not significant at the a=.05 level we fail to reject the null hypothesis.

There is not strong evidence the populations are not the same with respect to belief in conspiracy theories

Conclusion

- Ways to fix it is to sample a larger amount of people, maybe define conspiracy theories
  - Another way would be to survey people who aren't from Washburn
- To conclude there is not strong evidence the populations are not the same with respect to belief in conspiracy theories
- Error could be from nonresponse, lack of explanation, small sample size.


That's all Folks!