

GEORGIA TECH PRESIDENTIAL RACE PARTY PREFERENCE BY MAJOR

	N	Democrat	Republican	Other	Unsure
Engineering	55	15	31	2	7
All non-engineering	22	9	10	0	3
<i>Liberal Arts</i>	2	2	0	0	0
<i>Business</i>	14	5	7	0	2
<i>Computer Science</i>	3	1	2	0	0
<i>Science</i>	3	1	1	0	1

For engineering majors:

Proportion planning to vote Republican = $31/55 \approx .56 = p_1$

For non-engineering majors:

Proportion planning to vote Republican = $10/22 \approx .45 = p_2$

$$H_0: p_1 = p_2$$

$$H_1: p_1 > p_2$$

$$Z_\alpha = Z_{.05} = 1.65$$

$$Z_0 = \frac{(\hat{p}_1 - \hat{p}_2)}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \quad \hat{p}_1 = \frac{X_1}{n_1}; \quad \hat{p}_2 = \frac{X_2}{n_2}$$

$$\hat{p} = \frac{X_1 + X_2}{n_1 + n_2}$$

$$Z_0 = .87$$

$Z_0 < Z_\alpha$, hypothesis not rejected

Conclusions

There is no need to further evaluate the claim that 10% more engineering majors plan to vote conservatively than their fellow students as the sample size is too small to even say that that they vote more conservatively at all given a hypothesis test comparing two populations (engineering and non-engineering).

Though the evidence may seem to suggest this, further study would be needed for a more definitive conclusion.

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