

A / B Testing

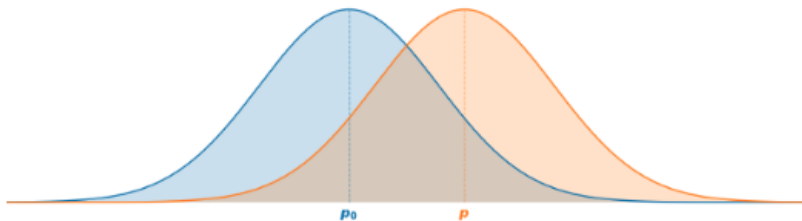
Python Working Group WSU

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October 23, 2022

A / B Testing

- We want to test if there is a statistically significant difference between two different means in two different distributions.



*Renato Fillinich provides a good resource with code [HERE](#).
The motivating image is referenced from [this website](#).*

Things we are concerned about

- Hypothesis Test:

$$H_0: \mu_{Control} = \mu_{Treatment}$$

$$H_A: \mu_{Control} \neq \mu_{Treatment}$$

with an $\alpha = .05$

- Diagnostics Tests:

1) Normality 2) Equal Variance 3) Auto-correlation

- Power ($1 - \beta$):

This represents the probability of finding a statistical difference between the groups when a difference is actually present. This is usually set at 0.8 by convention.

References

- A/B testing: A step-by-step guide in Python
- Statistical Power Analysis in Python
- Calculating Power and the Probability of a Type II Error (A Two-Tailed Example)
- Calculating Power and the Probability of a Type II Error (A One-Tailed Example)