

Hypothesis Test Notes

Summary Table of P-Value, Test Statistic, Simulation, Significance, Sampling Variability and Evidence

| | SIGNIFICANT | NOT SIGNIFICANT |
|--|---|---|
| | Test Statistic falls in tail determined by a critical value | Test Statistic does NOT fall in tail determined by a critical value |
| | OR | OR |
| | Low P-value <i>(P-value ≤ significance level)</i> | High P-value <i>(P-value > significance level)</i> |
| | OR | OR |
| | Sample Statistic falls in tail determined by the significance level of randomized simulation. | Sample Statistic does NOT fall in tail determined by the significance level of randomized simulation. |
| | | |
| Is the sample data significantly different than H_0 ? | Significantly Different | NOT Significantly Different |
| | | |
| Could the sample data happen because of sampling variability (random chance) if H_0 is true? | Unlikely | Could Happen |
| | | |
| Reject H_0 or Fail to Reject H_0 ? | Reject H_0 | Fail to Reject H_0 |
| | | |
| Is there significant evidence? | Significant Evidence | NOT Significant Evidence |
| | | |