V33 - Hypothesis Testing - Part 9

❑ Goodness of Fit Test

Course: Statistical Testing & Regression
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Goodness of Fit Test

- Thus far, tested hypotheses about population parameters:

    _____, _____, _____, _____, _____

- Next → test hypotheses about data _____
    - Does *observed* or *sample* distribution follow certain _____ or _____ distribution?
    - Example: does observed data follow a _____ or _____ distribution?

- HT known as _____ test between 2 distributions:
    - Observed vs. Theoretical distribution

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Goodness of Fit Test

- Example: tossing a die
  - Outcomes have _____distribution (assuming die fair → equal prob)
  - _____ uniform (6 sides)
- H_0: Outcomes have **discrete uniform distribution**
  - each face equally likely to occur
  - probability function for a fair die:
    $$f(x) = \frac{1}{6} \quad x = 1,2,3,4,5,6.$$
  - 6 equal probabilities
- If toss die 120 times and die is fair, we **expect** each face to appear _____ times

Outcome	Expected Frequency
1	20
2	20
3	20
4	20
5	20
6	20

Goodness of Fit Test

- However, observed/actual frequencies may not match expected

- GF test explores whether differences due to _____
  - …or whether the distribution is *not* uniform discrete (die not far)

Outcome	Expected Frequency	Observed Frequency
1	20	20
2	20	22
3	20	17
4	20	18
5	20	19
6	20	24

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