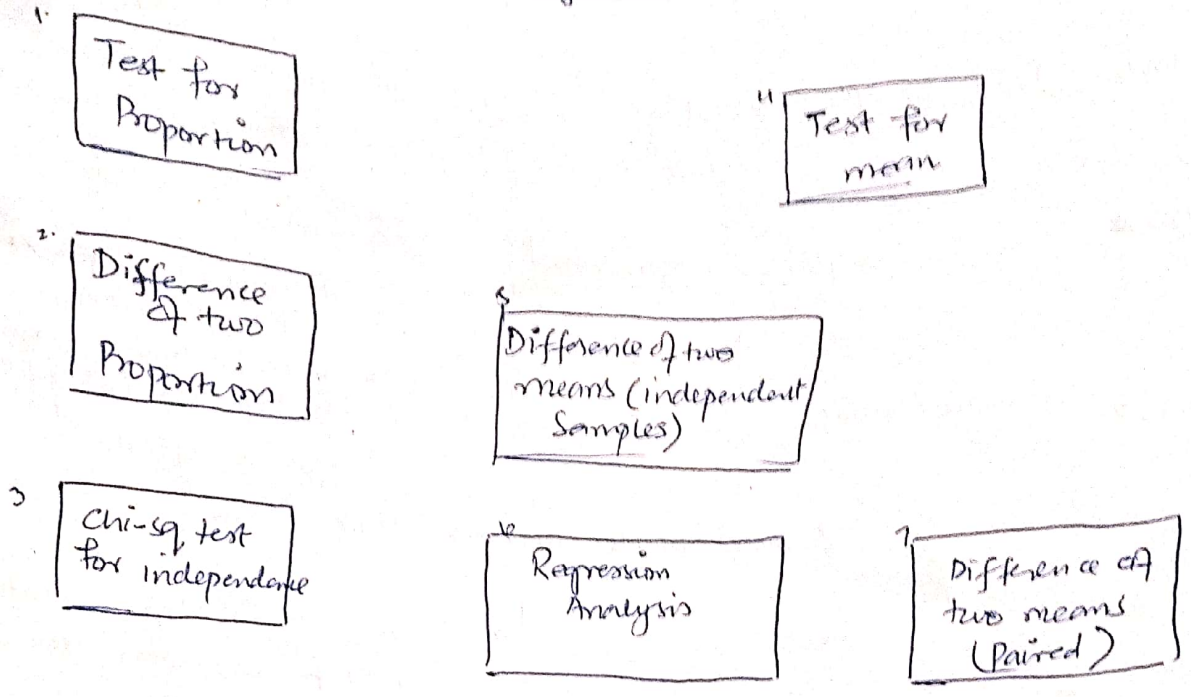


# Choosing tests



Three questions.

- 1. Data
- 2. Samples
- 3. purpose.

## 1. Data / Level of measurement:

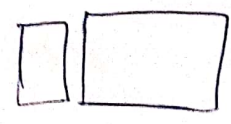
Nominal or Interval Ratio

- Categorical
- Qualitative
- Non parametric.

e.g color, defective or not  
Types of chocolate

Summary value: proportion, percentage value and frequencies.

tests: 1, 2, 3



Quantitative

e.g daily sales of a product  
• Weight of boxes on temperature.

common summary value is a "mean"

tests are label 4, 5, 6 & 7

## 2. Samples (How many Samples).

- Tests 1 & 4 1) 1 sample → Testing the relevant statistic against the hypothesized value. → e.g. compare a proportion to a mean against a q.
- Tests: 2, 5, 6 2) Two samples → compared with each other or → compare two different wt of people or things e.g. men & women or people from 2 various districts. circumference / weight.
- Tests: 3, 6, 7 3) one sample, two measures e.g. color, or grade.
- Same sample measured twice.
- e.g. one set of days & interval on how many ice creams are sold & what the temp was.

## 3. Purpose: (purpose of Analysis)?

- 1) Test against the hypothesized value.
- 2) Comparing two statistics.
- Tests 3 & 6 3) Looking for a relationship.
  - similar and they are looking at the relationship b/w two variables.
  - Difference is in the type of data.
    - summarize in a table (chi square)
    - scatter plot (Regression)



## Examples:

(2)

- 1) Mr A is selling a chocolates and was concerned whether the quantity of nuts was sufficient in her chocolates? She took a sample of 20 packets & found the weight of nuts in each packet?

- 1) Data: Weight is interval and ratio data.
- 2) Samples: 1 sample of 20 packets
- 3) Purpose: Comparing against a given value.

Test for  
a Mean.

- 2) In a promotional campaign 20% of all packets of chocolates should include tickets for free prizes. A takes a sample of 50 packets & find 7 of them have winning tickets

- 1) Data: Yes/No. (Nominal)
- 2) Samples: One sample of 50 packets.
- 3) Purpose: Test against a given value: 20%.

Test For  
Proportion

we

- 3) Bar longevity compared with nuttobars, A thinks his/her chocolates last longer than the competitive nuttobars. He/she gets 36 people to eat one of each, & records their eating times.

- 1) Data: Time (in secs/min) Interval/ratio
- 2) Samples: One sample of 36 people with 2 scores
- 3) Purpose: relationship (Difference in the amount of time taken for each of the bars).

Difference of two  
means (paired)

4. Defective wrapping from two wrapping machines, A thinks there is a difference in performance between wrapping machines in his/her factory. He/she checks 200 bars from 1 machine & 150 bars from the other. For each bar he/she is seeing if the wrapping is satisfactory or not? He/she finds that 10 out of 200 bars from the first machine & 9 out of 150 from 2nd machine are badly wrapped.

- 1) Data: Nominal
- 2) Samples: 2 Samples (each from two machines)
- 3) Purpose: Comparing the proportions from two samples.

Test for Difference of  
Two proportions

5. Mr. A is exploring whether having free stickers makes a difference to sales. He/she has the sales figures for 13 days when she/he did offer free stickers & 10 days when she/he did not.

- 1) Data: Interval/Ratio (Sales) Summarize (Mean)
- 2) Samples: Two Samples
- 3) Purpose: Comparing two statistics.

Difference two means  
Independent Samples