(1)

- Descriptive statistics : summarize and describe imp. features of data. does not generalize.
  - ↳ a smaller, local group. → not infer it for a large population
- Inferential stats : collection of samples to draw inferences about the population
  - → using data from a sample and generalising for a larger population

(2)

- Quantitative → numbers
- Qualitative → characteristic

} types of variables

(3)

- Percentile : comparing outcomes obtained
  - ↳ calc using particular method :

p^{th} percentile for a set of N data : (you always forget this.)

1. compute Rank $R = \frac{P}{100} \times (N+1)$ ← arrange in order of mag.
2. I_R : int portion of Rank
   F_R : frac. portion of Rank
3. p^{th} percentile = Data at rank $I_R + F_R$(Data at Rank (I_R+1) − Data at Rank I_R)

rank	1	2	3	4	5	6	7	8
eg.	3	5	7	8	9	11	13	15

$N = 8$

25^{th} percentile : ?

$$R = \frac{25}{100} \times (8+1) = 2.25$$

$I_R = 2$

$F_R = 0.25$

$$25\% \text{ percentile} = 5 + 0.25(7-5) = 5 + 0.25(2) = 5 + 0.5 = 5.5$$

eg 2. $N = 20$

$$R = \frac{25}{100} \times 21 = 5.25$$

$5 + 0.25$ (

eg 3. $N = 20$

$$R = \frac{85}{100} \times 21$$

b/w order of mag !!!

Variable Types

- Independent Variables → gets manipulated
- Dependent Variables → gets measured to see how change in IV results

- Qualitative → characteristic
- Quantitative → can be ordered, always numbered

- Discrete → scale is at reg intervals
- continuous → continuous scale

Percentile

- score when compared to population

- $\text{Rank} = \frac{P}{100} \times (N+1)$ — N = no of things, P = percentile
- IR (Int), FR (frac) — data must be ordered
- percentile = Data at rank IR + FR ([Data at Rank (IR+1)] − [Data at Rank IR])

Scales (way of measurement)

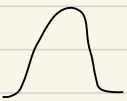
★

calc mean is not meaningful

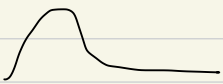
- nominal → names, categories, no ordering implied
- ordinal → clearly ordered, implied rank but not interval (rating scales; mean is meaningful)
- interval → same interpretation throughout, no true zero
- ratio → has a true zero, diff of 'one' is the same throughout

↑ most informative

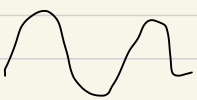
Mathematical Distribution



normal
foldable, area under the curve is 1



right skew, positive skew



bimodal

Linear conversions

- foot to inches
- centigrade to farenheit ($F = 1.8C + 32$)
- $Y = BX + A$ (y is a linear transformation of x)
- transform data from one measurement scale to another