

Week-2

Basic Stats for MR - Part 1

- Mean -- Avg / no of samples
- Median -- Sort the data, middle value.
- Mode -- value that occurs most often in data.

Class	19-23	18
	24-28	22
intervals	29-33	29
	34-38	19

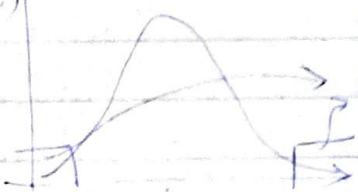
→ medal age grp.

Frequency table

- Median value is not affected by the outliers.
- Measures of variability -- Range, SD, etc.
- Range → Highest value - lowest value. (Simplest)
- Std. deviaⁿ → $SD/\sigma = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$ \bar{x} is the mean
- Variance → σ^2
- In frequency distribuⁿ, when we say this brand is most liked, we are using mode w/o realizing.

L2 Part-2

$f(x_i)$



Normal distribuⁿ (bell shaped curve)

outliers

$x_i (100)$ "mean, median"

- In a perfect sym. normal, mean = median = mode.
- 67% $\Rightarrow \mu - \sigma \leftrightarrow \mu + \sigma$
- 95% $\Rightarrow \mu - 2\sigma \leftrightarrow \mu + 2\sigma$
- 99% $\Rightarrow \mu - 3\sigma \leftrightarrow \mu + 3\sigma$
- Range $\Rightarrow \mu + 3\sigma \text{ to } (\mu - 3\sigma) \Rightarrow 6\sigma \text{ is Range}$

100 samples $\Rightarrow \bar{x}_1$

⋮
1000 x x

$\Rightarrow \bar{x}_{1000}$

$$\mu = \frac{\bar{x}_1 + \dots + \bar{x}_{1000}}{1000}$$

$$SD_{new} = \frac{\sigma}{\sqrt{n}}$$

→ sampling distribuⁿ of the mean = normal,
all 67%, 95% ... rules follow.

L3 Part-3

- CLT (Central Limit Th.) - If $n \geq 30$, the sampling distribuⁿ is always normal, even if the populaⁿ is not normally distributed.
 \therefore , $n = 30$ golden rule \rightarrow simple random sampling
 \hookrightarrow within a homogeneous cell. people in the
- In broad principle, there are more populaⁿ close to the mean & fewer people far away from the mean. There very few people who are very far away from the mean (very few outliers)
- CLT + Sampling distribuⁿ \rightarrow form the foundaⁿ of sample surveys.
- When we take SS = 30 (min) people -
 1. somewhat confident (67% probab.) that our survey is very very accurate
 2. very confident (95%), survey is very accurate
 3. very, very " (99%), survey is somewhat acc.

L4 Key MR Terms

- Household - collecⁿ of individuals who are from same

family, living under 1 roof and eating food prepared in same kitchen.

- CWE → (Chief wage earner) - contributes max. money towards the expenses for running household
- Housewife → Householder → takes decisions regarding the kitchen.
- Adult → 15+ is an adult (in MR)
- MHI → (Monthly household income) → total income of the household. Always in class intervals. People underestimate their income.
- SEC → (Old → Socio-economic classificaⁿ) - based on educaⁿ & occupaⁿ of CWE.
- NCCS → (New Consumer Classificaⁿ Sys.) - old + no. of std. durables they own.
- Urban & Rural. → 75% lives in rural areas.
3 condⁿ to be urban -
 1. governed by Municipal corpⁿ
 2. populaⁿ density ≥ 400 people/sq. km.
 3. not more than 25% populaⁿ should be engaged in agriculture.
- Metros - (8) → any city/town with populaⁿ > 40 lakhs (4 mill.)
- Mini metros → Populaⁿ btw. 10-40 lakhs
- Class I Town → populaⁿ > 1 lakh
- MRSI (Market Research Society of India) - governs ethical conduct.
- ESOMAR - European society for opinion & MR.
- TGI (Target group) - kind of respondents the study should focus on and based on demo. & psychographics
- Demographics - gender, NCCS, age, city, educaⁿ, etc.
- Psychographics - interest/extens., propensity to spend, etc.