BA - 58

Sampling Plan / Procedure / Strategy

1) Population
2) Sampling frame { list of contact no./ address/ email ids of probable respondents }
{ Servable list/or of a set of population from whom we can gather the data }

Coca → 1000 consumers in India
list of contact → takers of soft drinks
600, 650

3) Sampling method / techniques →

- Non-probability (Non-random)
- Probability sampling te (Random sampling)

4) Measurement of Constructs

→ Measures
→ Scale

Types of Sc

Measurement & Scales

Measurement → assigning numbers to objects, people, items or anything which we want to measure

Scale → System of assigning number by developing rules to do so.

Four types of Scales or Four levels of measurement

Higher order scale ↓

- Nominal, Ordinal → Non metric scale
- Interval, Ratio → Metric scale

Higher order scale will consist of all the characteristics or properties of Lower order scale.

Nominal Scale →

To classify objects into different mutually exclusive groups.

To measure categorical variables → Nominal Scale

Gender < Male (1) or (0) or (2)
Female (2) or (1) or (3)

1 ≠ 2
2 ≠ 3
0 ≠ 1

1 + 2 = 3

Preference about a soft drink brand is dependent on the gender of the consumer.

RN	Preference rating	Gender
1	7	1
2	8	1
3	6	2
4	5	1
5	4	2
6	3	2

1 — Male
2 — Female

Frequency Counting

1+1+2+1+2+2 = 9

Can't say

2>1

1≠2

Equality

Ex:

18 or less — 1
18-25 — 2
25-32 — 3
32-39 — 4
39 & above — 5

5>4>3>2>1

Can't say so

* ~~Number plates of~~ Registration numbers of vehicles — Nominal Scale

1431 ≠ 1751

* Ordinal Scale → used to rank or order the object

Ex. divisions of marks

1st Winner
2 1- Run
3 2- Runs

Rank →

1st d — Highest
2nd d — Higher
3rd d — Lowest

1 > 2 > 3 $\neq$ > <

greater or less

Ranking → order

Movie rank: 1, 2, 3

Pepsi — 2
Coke — 1
Mirinda — 7
7up — 5
sprite — 4
Mirinda — 3
Frooti — 6

Rank these brands in terms of preference → Ordinal scale

$\neq$ > <

7 − 6 = 6 − 5

2 − 1 = 3 − 2

60 or mm

50 − 60

40 − 50

Interval Scale → successive difference b/w scale points will be same.

but there will be NO ABSOLUTE Zero in this scale.

There will be an arbitrary zero in this scale.

2 − 1 = 3 − 2

0, 1, 2, 3

Temperature ← F, C, K

$0^\circ C$

$30^\circ C$, $20^\circ C$, $40^\circ C$ →

30 − 20 = 40 − 30

ph → ph value 0

Acidity → ph

0 → Absence Acidity

Ratio

Time measured in 24 hr scale

23:59:59 → 00:00:00

→ Rating → Interval scale

Ranking → Ordinal scale

④ Ratio Scale → ≠ >< A=B 2-1=3-2

ABSOLUTE ZERO

Length, Area, Volume

Sales → value / volume → 0 sales

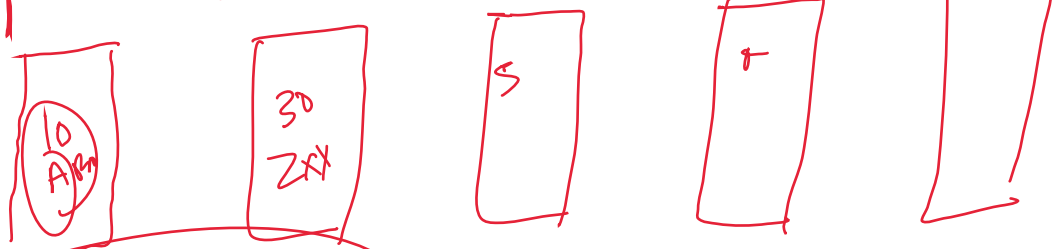
Scaling techniques → 100

Constant sum scaling technique

A → 40
B — 10
C — 30
D — 5
E — 15
100

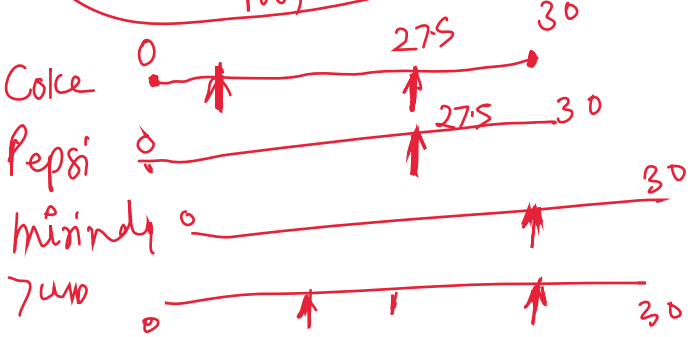
Q Sort Scaling techniques →

Most preferred ← 1 — 2 — 3 — — 11 → Least preferred



Most Preferred Brands of soft drinks

Preference rate



Coke ①
Pepsi ②
Mirinda ⑦
7up ④
Sprite ③
Frooti ⑥
Mazza ⑤

→ Rank order scaling technique

Rate the following brands of soft drinks interms of preferen

~~strongly dislike~~ Least pref (1) somewhat prefer (2) Neutral (3) preferen (4) Most prefer (5)

A

B

C

D

E

CPI

CPI

Data Analysis Techniques

Univariate (single Varible)

Bivariate (Two variables)

Multivariate (More than two variables)

CPI

Measurement of Central tendencies
- Mean
- Median
- Mode

Measure of dispersion
- Range
- IQR
- Std dev
- Variance
- COV

Frequency distribution
Histogram, Pareto
Bar pie chart
Ogive,

Covariance
Correlation
Bivariate regression
certain type of ANOVA
Chi-square

Multiple Regression
ANOVA
MANOVA,
Factor Analysis
Cluster Anum
Logistic Regression
Discriminant Analysis
Multidimensional scaling
Conjoint Analysis

→ Estimation

→ Sampling Distribution

Normal Distribution

Z

X ~ Z

Z =

$\bar{x} = \frac{\Sigma x}{n}$

$= \frac{265}{7}$

$= 37.86$

$\sigma \simeq$

	Age (x)	z
1	30	−0.5
2	25	−1
3	30	−0.5
4	35	0
5	45	+1
6	50	+1.5
7	50	+1.5

$\bar{x} = 35$

$\sigma = 10$

$z \rightarrow$ standardized score

$z = \frac{x - \bar{x}}{s}$ → sample data

$z = \frac{x - \mu}{\sigma}$ $\quad \frac{30-35}{10}$

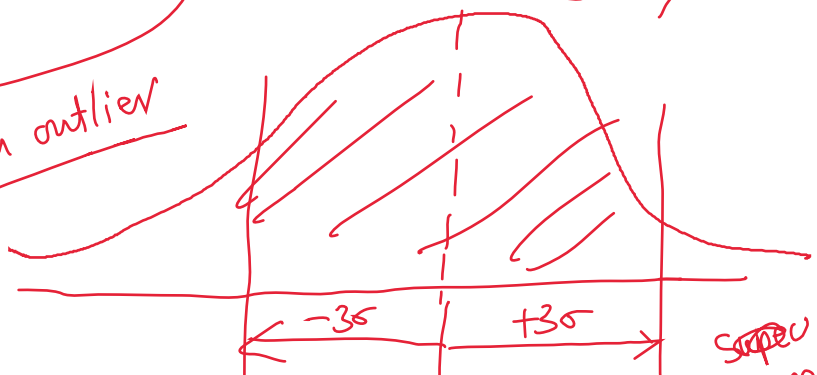
− z score → observation is below the mean

+ z score → observation is above the mean

$z = +3$ or -3

99.7%.

$(-3, 3)$ → an outlier



Box-whisker Method

Detecting Outliers → IQR

$IQR = Q_3 - Q_1$