

→ ANOVA (Analysis of Variance)

$H_0 \rightarrow$ There is NO variation
 $H_A \rightarrow$ There IS variation

→ \bar{t}/z both can only do compare 2 groups. each case

→ > 2 group ANOVA is used

→ Analysis of within σ in b/w the groups

→ One-way ANOVA :- we compare more than 2 groups based on 1 feature

diff in variance [5 city headquarters based on leave taken by emp]

→ Two-way ANOVA :- we compare more than 2 groups based on 2 features

→ N-way ANOVA :- compare more than 2 groups based on N features

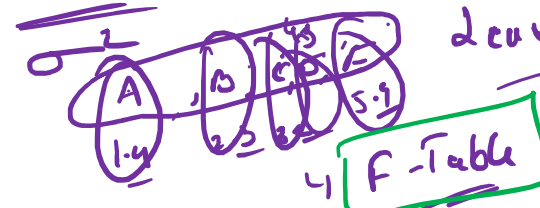
b-b

Schools / \bar{x} 6054

A B C D E

z Table
T Table

~~Intra~~ \Rightarrow within the group



F-Table

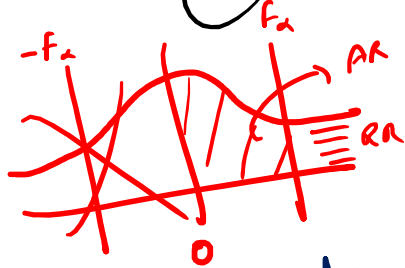
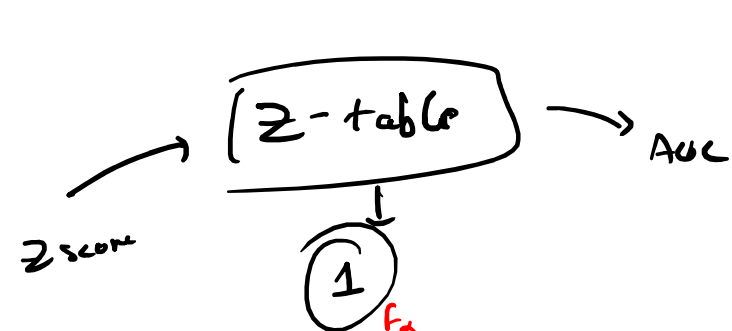
5 headquarters based

R. Fischer
1918

- ① leave taken
- ② Sex

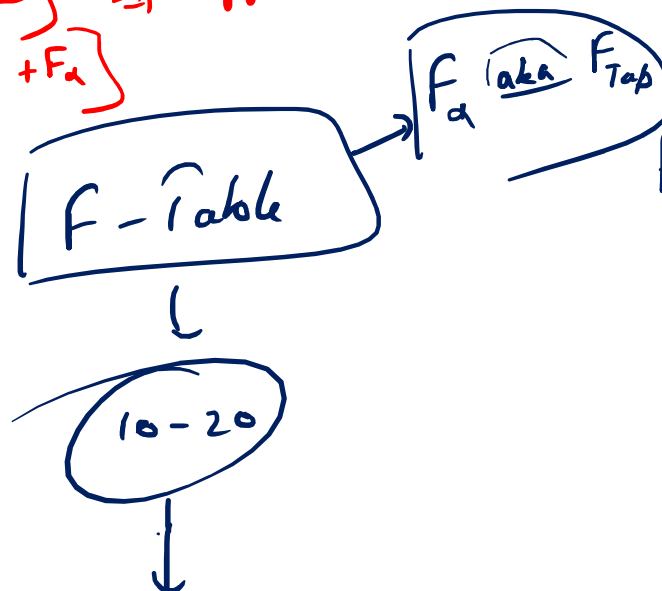
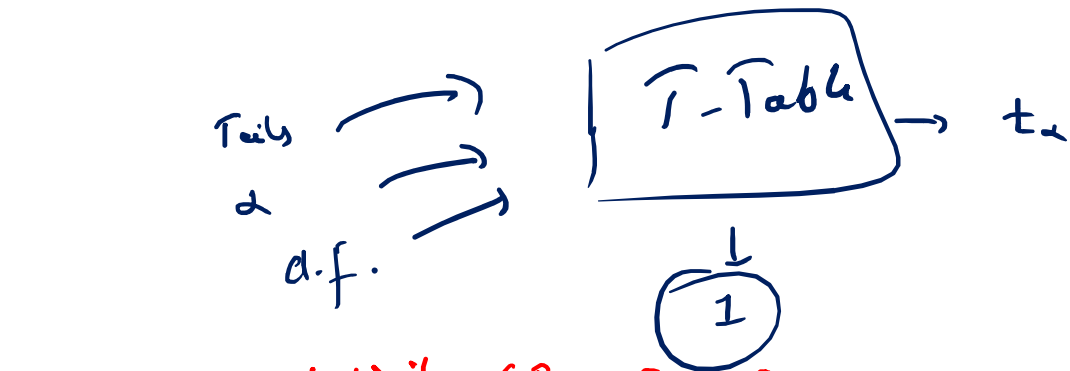
F-Test

\hookrightarrow Ratio of $\frac{\text{within } (\sigma^2)}{\text{b/w } (\sigma^2)}$
 Compare it with F-Table



$F_{calc} \rightarrow [0, \infty] \Rightarrow \text{Applied limit} = CP = [0, F_\alpha] \Rightarrow AR$
 $CP \Rightarrow [-F_\alpha, +F_\alpha]$
 $[F_\alpha, \infty] \Rightarrow RR$

$d.f. \rightarrow$
 $d.f. \rightarrow$
 $F_{calc} < F_\alpha \Rightarrow AR$
 $F_{calc} > F_\alpha \Rightarrow RR$



One table for each value of α

$F\text{-Table} \Rightarrow \alpha = 0.10$

$F\text{-Table} \Rightarrow \alpha = 0.01$

$F\text{-Table} \Rightarrow \alpha = 1.00$

$F\text{-Table} \Rightarrow \alpha = 0.9995$

\vdots
 \vdots