$H_0: \mu_1 = \dots = \mu_k$

F_1 - ToD

F_2 - Store

$F_1 \times F_2$ - Interaction

Dependent Variable:Sales volume

Source	Sum of Squares	df	Mean Square	F	Sig.
Time_of_day	1431.667	2	715.833	421.078	.000
Store	1367.467	4	341.867	201.098	.000
Time_of_day * Store	812.333	8	101.542	59.730	.000
Error	25.500	15	1.700		
Total	3636.967	29			

ESS = Σ

RSS = 25.500

TSS = 3636.967

3-1 = 2

5-1 = 4

9-1 = 8

30-k = 15

30-1 = 29

p-value < 0,001

# of est. coef.

# of observations

$TSS = \Sigma (y_i - \bar{y})^2$

$30 - 1 = 29$

$\Sigma\ 14 + \boxed{1} + 15$

$$ToD_{df} = 2$$

UR: $y_i = \beta_0 + \beta_1 D_{Ai} + \beta_2 D_{Mi}$

$$+ \gamma_1 D_{Bi} + \dots + \gamma_4 \cdot D_{Ei}$$

Σ $df = 4$

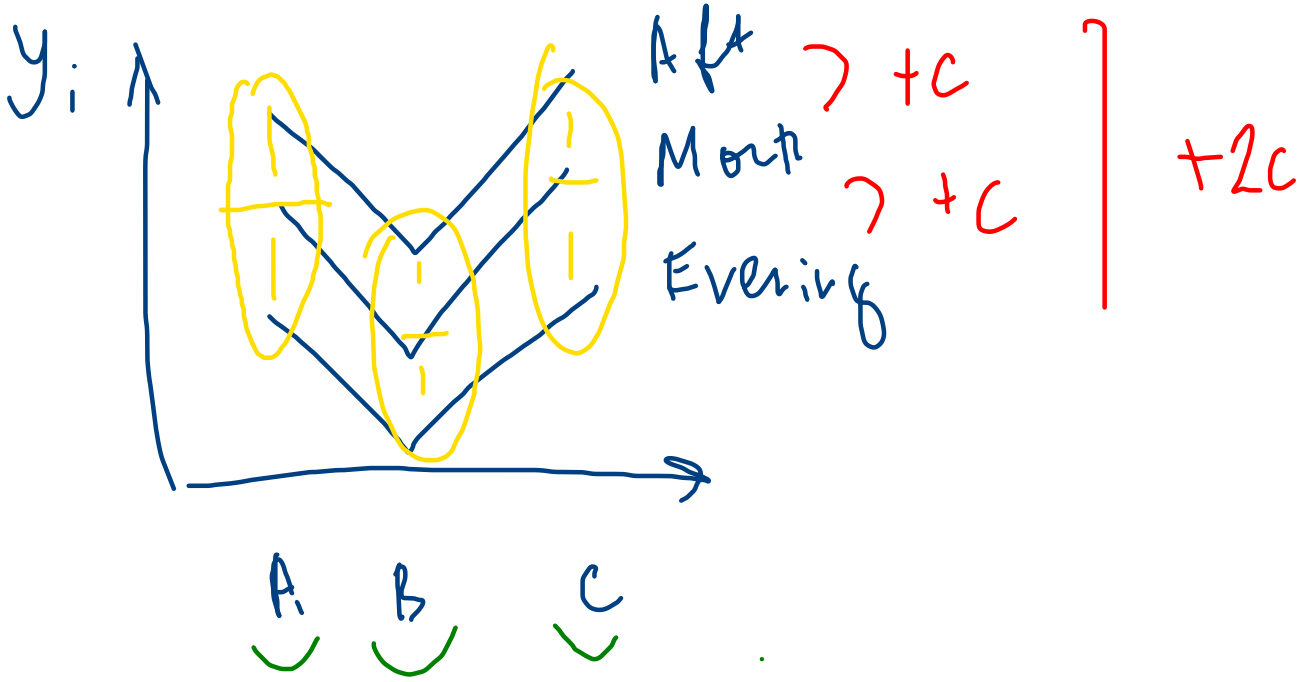
$$+ \psi_1 D_{Ai} \cdot D_{Bi} + \dots + \psi_8 D_{Mi} \cdot D_{Ei}$$

Σ $df = 4 \cdot 2 = 8$

$$+ \varepsilon_i$$

TSS = ESS + RSS

$$y_i = f(D_1, \dots, D_k) + \varepsilon_i$$



Ind. Effect Stores $p\text{-val} < 0{,}05$

ToD $p\text{-val} < 0{,}05$

Interaction Same dyn. $\Rightarrow$ $p\text{-val} > 0{,}05$

$$R^2 = \eta^2 = 1 - \frac{RSS}{TSS} = 1 - \frac{25}{3636} = 0,99$$

$$= \frac{ESS}{TSS}$$

F-test for goodness of fit

$H_0: \beta_1 = \ldots = \beta_k = 0$

$H_a: \exists \beta_j \neq 0$

$$F = \frac{(RSS_R - RSS_{UR})/q}{RSS_{UR}/(n-k)} = \frac{(TSS - RSS)/14}{RSS/30-15}$$

$q + 1 = k$

$\sim F_{14,15;0,95}$

$\alpha = 5\%$

R: $y_i = \beta_0 + \varepsilon_i$

$ESS = 0$

$RSS = TSS$

FWER =

P(at least 1 H_0 ANOVA is rejected (H_0)) =

1 − P(all not rej) =

$= 1 - 0{,}95^3 = 0{,}14$

$H_0: \mu_m = \mu_e$ 0,5 (3) $\alpha = 5\%$ ← p-val

$H_0: \mu_m = \mu_a$ 0,1 (1) $\alpha = 5\%$

$H_0: \mu_a = \mu_e$ 0,2 (2) $\alpha = 5\%$

$\frac{\alpha}{n-k+1} = \frac{\alpha}{3-3+1} = \alpha$ ≥ tutte

$\frac{\alpha}{n-k+1} = \frac{\alpha}{3-1+1} = \frac{\alpha}{3}$

$FWER \leq \alpha$

↳ Bonferroni:

$$\alpha_{Bon} = \alpha / 3$$

$$P(\cdot) = 1 - \left(1 - 0{,}05/3\right)^3 \approx 0{,}049$$

HB:

$FDR \leq FWER$