FORMULA SHEET FOR POST-HOC TESTS

Scheffe

$F = MS_{contrast} / MS_{S/A}$ Compare to $(a - 1)\, F^*(df_A, df_{S/A})$

or:

$$\hat{\Psi} - \sqrt{(a-1)F^*(df_A, df_{S/A})}\sqrt{MS_{S/A}\frac{\Sigma c_j^2}{n}} \le \Psi \le \hat{\Psi} + \sqrt{(a-1)F^*(df_A, df_{S/A})}\sqrt{MS_{S/A}\frac{\Sigma c_j^2}{n}}$$

Tukey

$$q = \frac{\overline{Y}_j - \overline{Y}_{j'}}{\sqrt{MS_{S/A}}/\sqrt{n}}$$ Compare to q^*_T, $df = df_{S/A}$, # groups, $\alpha = \alpha_{FW}$.

$$(\overline{Y}_j - \overline{Y}_{j'}) - (q^*)\left(\frac{\sqrt{MS_{S/A}}}{\sqrt{n}}\right) \le (\mu_j - \pi_{j'}) \le (\overline{Y}_j - \overline{Y}_{j'}) + (q^*)\left(\frac{\sqrt{MS_{S/A}}}{\sqrt{n}}\right)$$

or from Keppel: $\bar{d}_T = \frac{q^*_T\sqrt{MS_{S/A}}}{\sqrt{n}}$, if $(\overline{Y}_j - \overline{Y}_{j'}) > d$, then reject H_0

Dunnett

$$\bar{d}_D = \frac{q^*_D\sqrt{2(MS_{S/A})}}{\sqrt{n}}$$

Fisher

L.S.D. or $\bar{d}_F = \frac{t^*\sqrt{2(MS_{S/A})}}{\sqrt{n}}$

or $t = \frac{\overline{Y}_j - \overline{Y}_{j'}}{\sqrt{2(MS_{S/A})}/\sqrt{n}}$ Compare to $t^*(df = df_{S/A})$, $\alpha = \alpha_{FW}$ two-tailed

* denotes critical value from the table