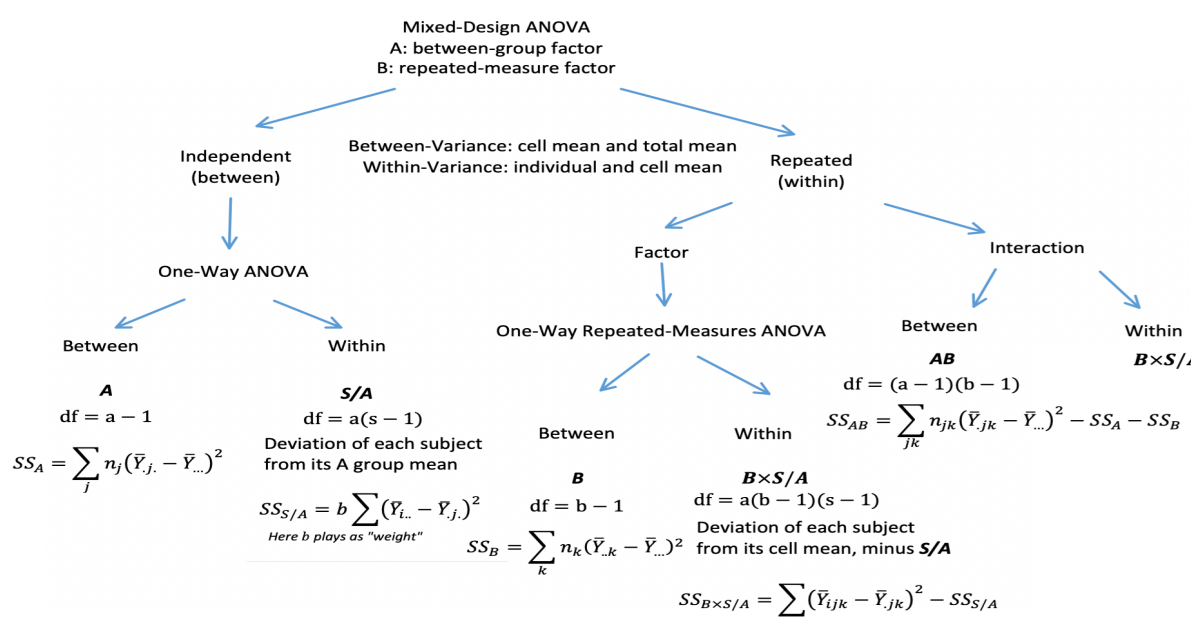


	t test		ANOVA		Correlation & Regression	
	配对	独立 同质 不同质	One-Way Independent	One-Way Repeated-Measures	Pearson	Spearman
A	正态分布		正态分布; 方差同质	正态分布; 协方差同质	正态分布; 连续变量	至少顺序变量
量	$t = \frac{\Delta}{S_{MD}}$	$t_{df} = \frac{\bar{X}_n - \bar{Y}_m}{S_{M_1-M_2}}$	$F_{k-1, N-k} = \frac{MS_{between}}{MS_{within}}$	$F_{k-1, N-k-n+1} = \frac{MS_{between}}{MS_{error}}$	$r = \frac{SP}{\sqrt{SS_x SS_y}}, t_{n-2} = \frac{r - \rho_0}{\sqrt{\frac{1-r^2}{n-2}}}, r_{pb} = \frac{\bar{X}_p - \bar{X}_q}{\sigma} \cdot \sqrt{pq}, \hat{\beta} = \frac{SP}{SS_x}$	
误差项	$S_{MD} = \frac{sd(D)}{\sqrt{n}}$ $S_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$ $S_{(M_1-M_2)} = \sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$ $df = n_1 + n_2 - 2$ $S_{(M_1-M_2)} = \sqrt{\frac{S_1^2 + S_2^2}{n_1 + n_2}}$ $df = \frac{\frac{S_1^2}{n_1-1} + \frac{S_2^2}{n_2-1}}{\frac{S_1^2}{n_1-1} + \frac{S_2^2}{n_2-1}}$		<p>Total</p> <p>Between treatment $SS_{between} = \sum_i \left(\frac{T_i^2}{n_i}\right) - \frac{G^2}{N}$ $df_{between} = \text{levels/cells} - 1$</p> <p>Within treatment $SS_{within} = \sum SS_{cell}$ $df_{within} = \sum df_{cell}$</p> <p>MS = $\frac{SS}{df}$ $F = \frac{MS_{between}}{MS_{within}}$</p> <p>Individual differences $SS_{subjects} = \sum_i \left(\frac{T_i^2}{n_i}\right) - \frac{G^2}{N}$ $df_{subjects} = \text{subjects} - 1$</p> <p>Random errors $SS_{error} = SS_{within} - SS_{subjects}(\text{if any})$ $df_{error} = df_{within} - df_{subjects}(\text{if any})$</p> <p>Factors $SS = \sum_i \left(\frac{T_i^2}{n_i}\right) - \frac{G^2}{N}$ $df = \text{levels} - 1$</p> <p>Interaction $SS = SS_{between} - \sum SS_{factor_i}$ $df = df_{between} - \sum df_{factor_i}$</p>		<p>Model</p> $df = n - 1$ $SS_y = \sum (y_i - \bar{y})^2$ $r^2 = \frac{SS_{regression}}{SS_y} = \frac{SP^2}{SS_x \cdot SS_y}$ <p>Regression $df = 1$ $SS_{regression} = r^2 SS_y$</p> <p>Residual $df = n - 2$ $SS_{residual} = (1 - r^2) SS_y$</p> $F_{1, n-2} = \frac{MS_{regression}}{MS_{residual}}$	
效应	$d = \frac{\text{Mean diff}}{s}; r^2 = \frac{t^2}{t^2 + df}$		$\eta_A^2 = \frac{SS_A}{SS_A + SS_{error}}$		$r^2, r_{adj}^2 = 1 - \frac{SS_{error}/(n-k-1)}{SS_y/(n-1)}$	
注意	1. 方差同质检验; 2. 自由度; 3. paired 与显著/效力		1. ANOVA 与 t 检验; 2 结果汇报: 均值标准差、结论、参数; 3. 事后检验判断; 4. repeated 与显著/效力; 5. 矫正; 6. 事后惩罚-全体		1. 系数类型; 2. 显著参数; 3. 模型参数; 4. 模型和相关检验等价; 5. 线性; 7. 回归中 x 和 y 正态	

数据中多大比例的变异性可以由分组变量（处理效应、组间均值）解释



```

data %>% convert_as_factor(Series) / group_by(factor)
%>% shapiro_test(Series) / levene_test(formula) / cor_test(formula)
leveneTest(formula, data)
t.test(x, y, alternative, mu, paired, var.equal, conf.level)
summary.aov(aov(formula, data))
MANOVA(data, subID, dv_for_between, dvs_for_within, dvs.pattern_for_within,
         between, within, sph.correction='GG')
EMMEANS(anova_model, effect, by)
emmip(anova_model, formula)
cor.test(DataFrame, formula, method)
  
```

遇事不决，问号解决！
考试细心，考完舒心！