证明SST = SSA + SSE

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$$SSA = n \sum_{j=1}^{k} (\alpha_j)^2 = n \sum_{j=1}^{k} (\bar{y}_{.j} - \bar{y}_{..})^2$$

$$SST = \sum_{j=1}^{k} \sum_{i=1}^{n} (t_{ij})^2 = \sum_{j=1}^{k} \sum_{i=1}^{n} (y_{ij} - \bar{y}_{..})^2$$

$$SSE = \sum_{j=1}^{k} \sum_{i=1}^{n} (e_{ij})^2 = \sum_{j=1}^{k} \sum_{i=1}^{n} (y_{.j} - \bar{y}_{.j})^2$$

$$SSA + SSE$$

$$= n \sum_{j=1}^{k} (\bar{y}_{.j} - \bar{y}_{..})^2 + \sum_{j=1}^{k} \sum_{i=1}^{n} (y_{ij} - \bar{y}_{.j})^2$$

$$= \sum_{i=1}^{n} \sum_{j=1}^{k} (y_{.j} - \bar{y}_{..})^2 + \sum_{j=1}^{k} \sum_{i=1}^{n} (y_{.j} - \bar{y}_{.j})^2$$

$$= \sum_{j=1}^{k} \sum_{i=1}^{n} (y_{ij} - \bar{y}_{..})^2$$