**Paired Comparison experiments and Bradley-Terry-Luce Model**

**Paired comparison experiments:**

Response: $y_{ij,h}$

- 0 if $j$ is chosen against $i$
- 1 if $i$ is chosen against $j$

**Latent class approach and Bradley-Terry-Luce model (1952):**

Take into account heterogeneity of consumers

\[
\pi_{ij,t} = \frac{\pi_{i,t}}{\pi_{i,t} + \pi_{j,t}} \quad \text{with} \quad \pi_{i,t} \in [0; 1] \quad \text{and} \quad \sum_{i=1}^{n} \pi_{i,t} = 1
\]

Maximum likelihood estimates:

Bradley’s scores $\pi_t = (\pi_{i,t})_{i=1 \text{ to } n}$

Weights $\alpha(t)$ $t = 1$ to $T$ of the different classes

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**Feature of CompR package**

Function: **“EstimBradley”**

Maximum likelihood estimates, covariance matrices, Multiple comparison tests for Bradley’s scores

Information criteria (AIC, BIC, CAIC).

Function: **“ResSimulLvrRatio”**

Monte Carlo simulation