

3. Grains

80000 customers (*50000 members + 150 corporate customers * 200 franchises*)

350 franchises

523 products (*500 merchandise items + 20 service categories + 3 special event types*)

365 days per year

610000 purchases per year (*450000 merchandise purchases + 100000 service purchases + 60000 special events*)

$$\text{Sparsity estimate: } 1 - \frac{610000}{80000 \cdot 350 \cdot 523 \cdot 365} = 0,999$$