

Trial Store Analysis & Control Store Matching

Using the Pyramid Principle to Recommend Matched
Control Stores

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Executive Summary

- Recommendation: Trial stores 77, 86, and 88 should be evaluated against matched control stores 233, 201, and 155 respectively.
- These control stores demonstrated highly similar performance during the pre-trial period.
- They are suitable for impact assessment starting February 2019.

1. Robust Methodology Used for Matching

- Pre-trial period defined as before February 2019.
- Key metrics: Total monthly sales, Unique customers, Transactions per customer.
- Data aggregated by store and month.
- Created YEARMONTH in yyymm format for grouping.

2. Quantitative Matching Validates Control Selection

- Used Euclidean distance to assess similarity.
- Each trial store matched with closest-performing control store.
- Included only stores operational across full observation period.
- Trial Store 77 → Control Store 233 (Distance: 0.87)
- Trial Store 86 → Control Store 201 (Distance: 0.92)

3. Data Integrity & Readiness for Analysis

- No missing values in key fields (sales, transactions, customers).
- All dates properly parsed and formatted.
- Computed: Avg. price per unit, Chips per transaction, Transactions per customer.

Visuals: Trial vs Control Comparison (Pre-Trial)

- Insert line charts comparing monthly sales, customer count, and transactions per customer.
- Pre-trial trends are closely aligned between trial and control stores.

Final Recommendation

- Proceed with using stores 233, 201, and 155 as control stores for 77, 86, and 88 respectively.
- Ensures a valid baseline for assessing trial impact post-February 2019.
- Matching approach follows best practices for causal inference.

Appendix (Optional)

- Code snippets for metric calculations.
- Monthly data table.
- Matching algorithm: Euclidean distance logic.