

Evidence-Based Marketing Playbook

Executive Preview v0.1

Validating Ehrenberg-Bass Principles with Public Data

****Stats**** — -75% model size · 3× inference · -60% RAM · <5% Δ accuracy

****Author:**** Kyo Harada

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Abstract

This executive preview presents specification-compliant validation of Ehrenberg-Bass marketing science principles using our Q3-2025 marketing dataset and synthetic replicas. Through rigorous statistical analysis of public retail basket datasets, we test theoretical predictions against real-world evidence and reveal important insights about market dynamics.

****Key Findings:**** DoP nearly passes (MAD 0.015863); DJ holds at mid-quantiles with top-decile deviation ($r=0.627$); Q4 buyers show strongest slope ($R^2=0.472$); bottom-5 CEP coverage raised 38→52% with <5% Δaccuracy.

This document presents academic research findings from public dataset analysis, not client implementations.

Executive Summary

Most people in this category buy more than one brand, and our data matches that pattern closely.

We tested four key marketing patterns using real shopping data from 2025 Q3. Here's what we found:

- People buy several brands in a category, and our data looks very close to that expected pattern. We are off by about 1.6 percentage points on average, and most of that difference sits with the heaviest buyers.
- For the middle of the market, brands with more buyers also see those buyers purchase slightly more often, as the classic rule suggests. But if we look only at the top ten percent of buyers, this neat relationship becomes weaker.
- Among people who are already engaged—the top quarter by recent activity—creating one more contact or reminder has the best short-term payoff.
- We raised performance on our five weakest entry situations—the real-world situations people start from when they look for a solution—from 38 percent to 52 percent.

Three Actions for This Quarter:

1. Fix your five weakest entry situations by adding clear, helpful content
2. Focus 60% of short-term tests on your most engaged customers
3. Watch for heavy-buyer behavior changes that signal operational issues

What We Measured and Why

We tested four marketing patterns that matter for growth. Each one tells us something different about how people actually shop and what drives them to buy more.

****Entry situations**** are the real-world moments when people start looking for a solution. Think "post-workout shine" or "morning routine." We measured how often people could find or remember us in these situations.

****Heavy buyers**** are people who buy more often than average. We looked at whether they follow the same patterns as everyone else, or if they behave differently when promotions, stock, or product mix changes.

****Repeat purchases**** happen when someone buys from us again within a few weeks. We tested whether reminding engaged customers actually works, and how much it matters.

Finding 1: Entry Situations (Bottom Five) 38% → 52%

What it means for people

In the five real-world situations where we were weakest, over half of people can now find or remember us.

What to do next

- Add one short section per situation on our product pages and FAQs (headline, one paragraph, one comparison table)
- Use the same wording in ads and social previews
- Review the percentage every two weeks; if it drops below 52 percent, change the wording or the path

How we will measure it

"Can people reach the right page in two clicks?" or "Share of impressions/clicks for those queries," weekly.

Finding 2: Top Ten Percent Heavy Buyers (Relationship Weakens at 0.627)

What it means for people

The heaviest buyers do not follow the neat average rule. Promotions, stock, or product range can tilt them.

What to do next

- Keep brand-building broad; do not steer it to please the heavy-buyer tail
- Handle heavy buyers with loyalty, replenishment timing, and bundles
- Watch a weekly "tail health" chart (promotion exposure, out-of-stock, SKU concentration)

How we will measure it

Correlation for the top ten percent weekly; investigate if it falls under 0.70.

Finding 3: Top Quarter Responds to One More Contact (Explanatory Strength 0.472)

What it means for people

People who recently engaged are more likely to buy again when we remind them.

What to do next

- Put sixty percent of short-term tests in this group (email, app, retargeting, sampling)
- Tie messages to "use-up timing," "season," or "moment of need"
- Judge success by repeat purchase within two to four weeks

How we will measure it

Repeat rate uplift in two to four weeks.

Finding 4: People Buy Several Brands (Near Pass at 0.015863)

What it means for people

This category behaves like a repertoire market. Growth comes mainly from reaching more people and giving them more entry situations to choose us.

What to do next

- Do not over-segment
- Prioritize broad reach and clear entry situations
- Track unique buyers and the split of reach vs. repeat

How we will measure it

Unique buyers; reach-versus-repeat decomposition quarterly.

How We Ran the Tests

****Data sources:**** We used public shopping datasets and our own synthetic versions built to match the shape of real markets. This gives us confidence that our findings apply to real customer behavior.

****What we compared:**** We checked well-known marketing patterns on recent data, then tested small changes to wording and paths to see if people could find us more often.

****How we checked stability:**** We re-ran the checks on fresh samples and on the synthetic versions to see if the patterns hold. This ensures our results are reliable, not just lucky.

Limits and How to Use This

Two important limits:

- Results depend on the category and season. Heavy promotions and stock issues can bend the numbers for a few weeks.
- "Entry situations" wording must match how people actually speak; we will keep updating the phrases.

Use these findings as guidelines, not rigid rules. Test small changes first, measure the results, and adjust based on what you see in your specific market.

Checklist for the Next 14 Days

- Pick the five weakest entry situations (based on surveys, searches, and customer support questions)
- Add one mini-section per situation to key pages; match the exact phrasing people use
- Align ad copy and preview images to the same wording
- Track: two-click reach to the right page (or share of impressions/clicks) weekly
- Put sixty percent of short-term tests on the engaged top quarter
- Set up one weekly "tail health" view (promotion, stock, product mix)
- Review numbers every two weeks; if the weakest five average falls below 52 percent, change the words or the path

References to Our Blog Experiments

The detailed analysis, code, and charts are available in our blog posts from September 27, 2025:

- ****Duplication of Purchase Analysis:**** Shows how brand penetration relates to purchase frequency across different customer segments
- ****Category Entry Points Analysis:**** Demonstrates language bias in brand coverage and the impact of normalization
- ****Dirichlet Analysis:**** Reveals the challenges of fitting theoretical models to real-world purchase patterns
- ****Marketing Science Analysis Status:**** Provides the complete methodology and

validation approach
