



The Rising Tide in Circulation Testing

Testing will always be a powerful tool for improving marketing programs. But with such a simple concept, how much more is there to learn?

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published on AudienceDevelopment.com
October 8, 2007*

Surprisingly, beneath the surface lies an immense depth and diversity of scientific techniques that offer new ways to test more variables more efficiently. The science of testing has evolved over the last 80 years, but only recently has it begun to make waves in the marketplace.

Now, it seems, the flood gates are open and we're awash in talk of multivariable testing (or multivariate, optimal, or factorial testing; or MVT; or Taguchi methods; or DOE/experimental design). Before drowning in the turbulence of terminology, let's wade in far enough to understand the science more clearly.

Back in the 1920s, split-run testing in newspapers offered marketers a powerful technique for "scientific advertising" (as Claude Hopkins called it). Around the same time, a small group of PhD statisticians began using complex mathematics and statistical principles to develop new ways to test many variables at once.

This work began in agriculture, then spread to military, research, and manufacturing operations, and now includes a wealth of research in a number of academic tomes and technical journals. Only in this last decade have these scientific techniques begun to filter up to the front line of marketing programs.

The Core Concept

The core concept is simple: with the right techniques, you can test many variables at once and still separate out the impact of each. Though it seems to contradict the Scientific Method drilled into us since grade school, multivariable techniques are simply a technical extension of this basic view of testing (with some complex mathematics added).

Similar to split-run tests, a multivariable test of 15 different variables in your direct mail program would require a number of different packages. The difference is that each package would include a precise combination of all the variables in your test.

Analyzing all test packages together, but grouping data in different ways, you can independently quantify the impact of each variable. In addition (depending on the statistical test design), you can also analyze interactions—where the impact of one variable may change depending on how others are set. Benefits are summarized in the chart on the next page.

| <u>Benefits of scientific testing</u> | <u>How it works</u> |
|---|--|
| <p>Larger breadth of insights Test many variables at once</p> | <p>All test elements are part of the same statistical design — the cost of adding more variables is minimal.</p> |
| <p>Reduced sample size and risk Use a fraction of split-run sample size</p> | <p>Data from all test cells are used to analyze all elements, so sample size can be the same for 2 or 2-dozen variables.</p> |
| <p>Greater accuracy and depth of insights Reduce error and quantify the main effect of each element, plus key interactions</p> | <p>Each element is tested within various combinations, so data is rich with information about each element alone and in combination with others.</p> |
| <p>Speed Test in one drop what might normally take 6-12 months</p> | <p>With few constraints, more variables can be tested more quickly, leading to faster roll-out and ever-faster growth.</p> |

Example: Split-run versus Scientific Testing

A circulation marketing team shared 15 creative changes they planned to test in their next “soft offer” campaign, including 6 changes to the outer envelope, 4 changes to the reply slip, 2 letter changes, plus a new gift, brochure, and lift note.

They planned to mail 20,000 of each of the 15 split-run test cells along with 500,000 of the control, with an expected net response rate of 0.2 percent (1,000 paid subscriptions from the control).

These 15 marketing elements can be tested with the same number of packages and the same total sample size within one scientific multivariable test, with important differences:

- 1. Main effects are more robust and accurate.** Each of the 16 packages in the scientific test includes a specific combination of all 15 elements—providing unique data on every variable in the test. This means that the impact of each variable on its own (main effect) is based on 16 different packages instead of only one test cell versus the control.
- 2. Interactions can be analyzed.** The difference in the effect of each element can be analyzed across package versions in order to quantify interactions, where the impact may change depending on how other variables are set (for example, does a bold change to the reply slip have a greater impact if the OE window is larger).
- 3. Statistical power is much greater with the same sample size.** As split-run tests, each cell of 20,000 must increase response by 37 percent over the control in order to be statistically significant. Within the multivariable test, elements need only increase response by 16 percent to be statistically significant.

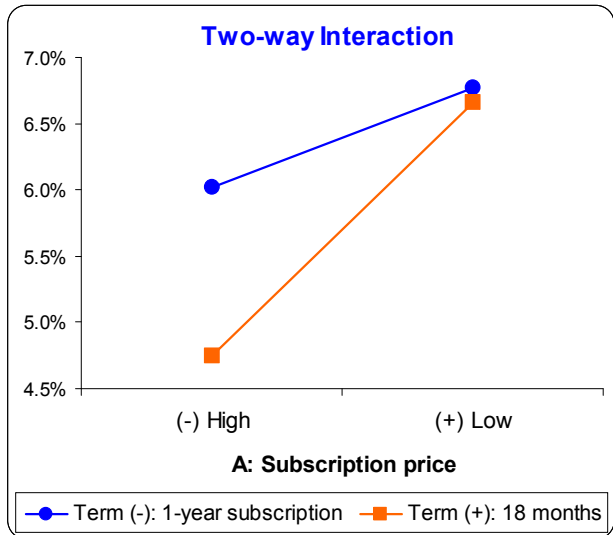
Especially with creative elements, reducing error by more than half can make the difference between a few significant effects and none.

Interactions Uncover Deeper Relationships

Interactions—impossible to see in split-run testing—are particularly valuable in price and offer tests. The 8th edition of *Successful Direct Marketing Methods* (Stone and Jacobs) includes a circulation DM case study with a 5-element price/offer test. One of the most important findings was a significant two-way interaction between subscription price and term, shown below:

Moving from left to right on the lines, you see that a lower subscription price increases response. Moving from the orange line (at bottom) to the blue line, you see that, on average, a 1-year subscription term leads to higher response than an 18-month term (tested at the same per-issue price). Since these lines are not parallel, an interaction is present between variables, leading to a valuable alternative.

The two points at the upper-right show that if subscription price is kept low, then there is no significant difference in response between a 1-year and 18-month subscription. Therefore, the circulation team can lock in subscribers for a 50 percent longer term without hurting response. Separate A/B splits would never uncover this valuable interaction.



If Testing is Important... Scientific Testing Holds Immense Potential

Testing will always be one of the most powerful, actionable, and valuable tools in a direct marketer's toolbox. Testing is the only way to prove what sells—the only way to move from "I think" to "I know."

Advanced techniques are built upon decades of academic research and offer important advantages over A/B splits. If testing is an important part of your direct mail, Internet, and retail marketing programs, scientific techniques let you test more variables, more rapidly, with greater accuracy, deeper insights, and more profitable results.

In difficult markets, with growing competition and tighter budgets, what John Caples said 70 years ago holds so true today: "In planning an advertising campaign, the first step should be to clear the decks of all opinions ... The next step should be to find a scientific method of testing."

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