action line

occasional news and notes from **action marketing research**

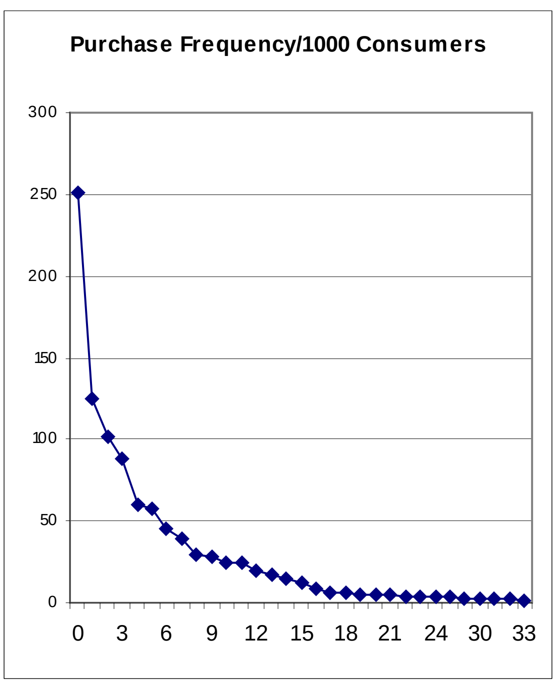
May 2005

When Average Isn't

We were fooled recently by a statistical phenomenon, where we should have known better. Therein lies a lesson for any researcher for whom purchase frequency is an important measure.

The context was a study where we were told that the average purchase frequency was, say, five annual purchases. Since the client wanted to focus on consumer over-achievers, we set a minimum qualification of five purchases and assumed half would pass. Wrong.

Purchase frequency distributions are often not "normal" in the statistical sense of bell-curves. Instead, they follow something called a negative binomial distribution that looks like the following. The average (mean) of this sample is indeed five purchases, but barely a third made five or more purchases.



Many consumers made no purchases, while a few outliers made over 30. The median was just over two purchases.

Any measurement you have that is essentially a count will have properties like this. There is no value less than zero, while the upper limit not constrained. As can easily be seen, the distribution is not normally distributed around the arithmetic mean of five, and is highly asymmetric.

Archetypes Aren't Definitions

A not-dissimilar problem we encounter is the wish to define respondent qualifications by what amount to "archetypes." This starts innocently enough with an idealization of one's target market as, for instance, women who are 21-29, have some college education, are not married, read these five magazines, agree with these ten attitude statements, and spend $500-$749/year in the category.

That profile may be useful in imagining how to write copy. But it is totally useless for the practical issue of who qualifies for a quantitative study. Even among single women 21-29, what percentage have all these attributes? Probably not more than one percent, and it is a rare business that wants to pay for research with one percent incidence. Nor should they.

We have to zero in on what matters for the decisions that will result from the research. Maybe it's just the age-gender demographic. Or category spending. Or media use. We have yet to see a case where it is really necessary to limit a study to only those rare few who match the "ideal" customer.

2100 Stevens Avenue, Suite 100 | www.action-research.com | Tel 612.879.9212
Minneapolis, MN 55404 | action@action-research.com | Fax 612.879.9265

"Wasting" Advertising Expenditures—To A Good End

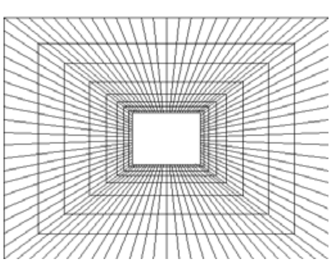
Writing in the December 2004 *Journal of Advertising Research*, Ambler and Hollier argue that "waste contributes to advertising effectiveness by increasing its credibility."

The "waste" they discuss refers to very high production values in advertising or other cues to the consumer that it was expensive. Experimental research confirms that perceptions of an ad's expense correspond to higher perceptions of the brand's quality. These are indirect effects that would not show up in measurements such as "persuasion" or "liking", but they are beneficial.

Think of a full-page newspaper ad with ten words of copy. "What a waste!" many of us would think, yet such as ad suggests the sponsor has money to burn—so it must be big and successful. Conversely, a tightly-packed retail ad could send the opposite message that the store is really cheap. That may be just the image the store wants.

Some readers may recall economist Thorstein Veblen's work on "conspicuous consumption" a century ago. His was the same idea. A sure signal that one has made it, and is thus deserving of high status, is the ability to afford unnecessary luxury goods (who <u>needs</u> a Hummer in Omaha?).

We like this thesis and the growing body of thought about how advertising actually works, and how consumers actually operate. Stimulus-response (rat) psychology seems hopelessly outdated as a means of understanding these processes, in comparison to the fascinating fields of behavioral economics and plain old social psychology.



When Not To Correlate

Not a few frequently-used measures in concept research involve scales with a verbal label for each point, e.g. Extremely, Very, Somewhat, Not at All. The natural thing to do is to assign them numeric values such as 1 through 4 (which is what the raw data consist of).

We must be careful, though, in the statistics we apply to such measures. Your old textbook calls them "ordinal" measures as opposed to "interval" measures. Our preferred statistical tools assume equal intervals between the numbers. That is (4-3) = (3-2). But is the distance between "Extremely" and "Very" really the same as the distance between "Very" and "Somewhat"?

"Everybody" treats the conventional five-point purchase interest scale and agreement/disagreement scales as interval. We'll leave that battle for another day, but suggest that another family of statistics is better suited to other ordinal scales.

In lieu of parametric (Pearson) correlation, a statistic called Gamma serves nicely. It takes a range of −1.00 to +1.00 and is subject to significance testing. If you need to compare means anyway, you are on safer ground to compare, say, the top box or top two-box <u>percentages</u> from ordinal scales (e.g. definitely and probably buy).

There are even nonparametric tools for such procedures as multiple regression, factoring, and cluster analysis. Our favorites use something called "latent class" modeling. They need to be part of our tool kits.

July 4. Statistics show that we lose more fools on this day than all other days of the year put together. This proves, by the number left in stock, that one Fourth of July per year is inadequate, the country has grown so.

--Mark Twain