

The Cola Challenge

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Since the mid-1970s, we have seen, in one form or another, ads that reflect or are based on the *Pepsi® Challenge*. There have been ads with Pepsi® challenging Coke®, Coke® challenging Pepsi®, and Sprite® challenging 7-Up®, among others. In each case, the conclusion drawn is that more consumers “prefer” one of the brands over the other. The question, however, is whether such a conclusion means anything, or does such a conclusion reflect nothing more than just puffery, an exaggeration of reality for promotional purposes?

The key word in all of these types of ads is “prefer.” What the ads fail to mention is whether or not the consumers involved in the taste tests can tell the difference between the brands in the first place. Unless the consumer can discriminate between the brands, a stated preference for one brand over the other has no meaning (i.e., lacks validity). The absence of such information in the ads is an important point. All that we are told, and quite often in very small print (i.e., the fine print) at the bottom of the ad, is that more people preferred one brand to the other, with the actual percentage values often being listed, values that are not much different from one another.

The importance of knowing whether or not consumers can tell the difference between the brands being tested can be illustrated with an imaginary sample of 30 consumers who have stated in a pre-screening questionnaire that they are diehard lovers of Brand X soft drink. Each consumer is given three containers: two of the containers contain Brand Y soft drink and one contains Brand X soft drink. In order to eliminate the possible influence of any visual characteristics of the products, covered (e.g., with tin foil), non-translucent containers are used. Non-translucent straws are also used (while holding the tin foil in place over the container, puncture the centre of the foil with the straw). The bottom of each container also needs to be coded with an A, B, or C, with C identifying the Brand X container (it is easier to mark the cups before filling them). The consumer is not told which container contains which brand or how many of each brand is included.

The participants in the taste test are first asked to taste the contents of each container and then to identify which one is different. [To remove the taste of the content of each container (i.e., to clean one’s palette), the taste-testers can be given a piece of unsalted cracker, a small piece of bread, or just plain water to consume before tasting the contents of each container, including the first one.] By chance alone (i.e., without even tasting the drinks), we would expect 10 of the 30 consumers (i.e., subjects) to correctly select the Brand X container (i.e., each consumer has a one-in-three chance of picking the container that is different; therefore, $1/3 \times 30 = 10$ such selections are based on chance). This means that, in order to show that consumers can tell the difference between the brands, significantly more than 10 of the 30 consumers must select the Brand X container after tasting each item.

If it is found that consumers cannot significantly discriminate between the brands, then there is no value in asking them to state a preference. A preference for a given brand, based on the taste of the brand, has no meaning unless one can tell the difference between the brands.

Now, if we find that, let's say 21 of the 30 consumers correctly identify the different brand (i.e., Brand X in this case), then the next stage of the experiment can be run, but only using those subjects who were able to discriminate between the brands. Any preference choice by the remaining nine respondents would be meaningless.

The next stage of the experiment involves giving each of the identified 21 consumers three containers, two of which contain Brand Y and one of which contains Brand X. Again, we ask them to taste the contents of each container and to identify which one they prefer. [The palette-cleaning procedure can also be implemented, once again.] By chance alone, (i.e., without even tasting the contents of the containers), we would expect one-third, or seven, of the 21 respondents to select Brand X as the one which is different. As a result, we would need a number significantly higher than seven to clearly indicate that Brand X users actually do prefer Brand X based on the taste of the product. If such results are obtained, then we can say that Brand X users actually do, in fact, prefer their identified brand.

This two-stage research process is necessary in order to give the results of a comparative taste test of this nature some meaning (i.e., to separate fact from fiction). So, the next time you see a comparative ad, watch and listen very closely to what information is being presented. Is it fact or fiction?

For fun, why don't you try the experiment described. You can use any commodity where physical differences between the brands are minimal and for which consumers tend to indicate strong preferences (e.g., cigarettes, beer, bottled-water). You might also have each respondent munch on an unsalted cracker or a piece of bread between product tests or take a sip of plain water, so that the aftertaste of one brand does not interfere with the taste of another brand. For the preference stage of the test, you can also use just two containers, with each containing a different brand, but with one containing the preferred brand of the respondent. In this case, there is a 50% chance that the respondent will select his or her preferred brand by chance alone. At least three containers must be used for the discrimination stage of the experiment, with one containing the preferred brand of the respondent and the remaining two containing some other brand.

Questions:

1. What other consumable (ingested) product categories can you think of where the "taste" of the brands are quite similar? Do consumers have a brand preference based on the taste of the brand?

2. What non-ingested product categories can you think of where the physical nature of the product is relative constant across brands? Do consumers have a brand preferred in this case? Why would there be a brand preference?
3. How could you use chi-square analysis to determine whether consumers actually have a meaningful preference for one brand over another at the discrimination stage of the experimental procedure described for cola brands (i.e., is there a *significant difference* in the obtained results)?