

TASTE TESTS TEACH EXPERIMENTAL METHOD
TO MARKETING RESEARCH STUDENTS

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The Journal of Marketing Education is replete with articles that emphasize real-world experience and simulations as good ways to introduce students to problems they are likely to face in employment situations. Nevett (1985) advocates real work experience to narrow the gap between learning and doing. Goretsky (1984) argues that undergraduates need to be exposed to classroom activities that parallel those that they are likely to encounter in their first jobs. He recommends relevant class projects as a way to give students this hands-on experience. Goldgehn and Soares (in press) encourage marketing educators to assign group and individual projects that can help graduating students demonstrate competence in their specialty fields. Lantos and Butaney (1985) consider class projects a good way to give students a "taste of the real world."

A good way to give marketing research students a taste of the real world is through group "taste test" projects. In spite of the fact that most marketing research texts devote little space to taste test research, the taste test is becoming a popular research method, as evidenced by the fast food burger wars and the Coca-Cola reformulation. Taste test research is used to compare products. Favorable taste test information is often used in advertising, and unfavorable data serve as input for product modification or reformulation.

Why Teach Taste Tests?

In addition to its current popularity as a research tool, the taste test also encompasses key aspects of the marketing research process: information needs are established; secondary data are collected and analyzed; research questions and hypotheses are stated; sampling procedures are set; primary data collection methods are determined; behavioral measurements are developed; field work procedures are designated and then executed; data are edited, analyzed, and interpreted; and a final report is written and presented orally. In other words, the primary features of marketing research are realized through the use of taste tests. But taste tests go beyond descriptive studies such as telephone surveys.

Taste tests examine causal relationships among dependent and independent variables. The taste test is quasi-experimentation research. This introduces more rigor into the study than is normally given to descriptive studies such as in survey research. In addition to accounting for or controlling error present in descriptive research, the student must also deal with factors that jeopardize the internal and external validity of the study (see Campbell and Stanley 1966). Plus, students must construct a cover story or preamble, control for extraneous variation (such as order effects, experimenter expectancies, halo effects, Hawthorne effects, boomer-

ang effects, experimental demand characteristics, social desirability, environmental effects), ensure random assignment to treatment conditions, compose control and comparison groups, and conduct manipulation checks. If these activities are not systematically done and recorded, experimental results will be suspect. Through taste test experimentation, students are introduced to practical application of the scientific method.

Another benefit of taste testing is that it is time and cost effective, compared to full-scale survey research and other types of field experimentation, such as test marketing. Taste tests can often be conducted on campus, and in a short amount of time. The products tested are usually inexpensive to obtain, and sometimes a producer or distributor will underwrite the taste test and receive the results in return.

The final benefit of taste testing is that the products being tested are used by students, hence, they have more interest in the outcome of the study. Examples of products that have been tested by marketing research students include chewing gum brands, chocolate bars, pizzas, boutique chocolate chip cookies, vanilla ice cream versus tofutti and gelato, light beer, fast food hamburgers, and diet colas. Future studies might compare classic and new Coke formulations, mouthwashes, soups, and lemon-lime soft drinks. The key to generating student interest is to find and test products that are important to students at the moment. Finding testable products which interest students in a research course is the first step taken in the group taste test project.

Stages in Executing the Taste Test

After students have learned through lecture, reading, and case studies how experiments are conducted, they are assigned to groups of between five and nine people. They are given some in-class time and are expected to devote a great deal of out-of-class time to these twelve stages:

- >State the problem (identify product). This is accomplished through brainstorming.
- >Formulate hypotheses about relationships between the measurement variables (taste preferences) and the independent variables (treatment variables such as brand type, and/or demographic variables such as gender). This is accomplished through secondary research, personal experience, focus groups and in-depth interviews, and pilot studies.
- >Construct an experimental design. The selected design does not have to be a true experimental design. Quasi-experimental designs such as time series, repeated measures, and after-only are ac-

ceptable. Graduate students may wish to use factorial, Latin square, randomized block, or more complicated designs, depending upon resources and the nature of the problem.

- >Determine dependent variables. Decide how taste preferences will be measured (e.g., via observation of behavior, paired product comparisons, voice pitch analysis, pupil dilation, rating scales).
- >Determine how independent variables will be operationalized and manipulated. Decide how many variables will be used, and how many levels of each variable are appropriate.
- >Determine sampling plan. Define the population that results will be generalized to. Determine a sample selection procedure, sample size criteria, and treatment group assignment.
- >Determine data analysis procedures. Set up a computer codebook, data editing procedure, and dummy figures and hypothesis tests.
- >Construct experimental plan. Compose a cover story, instructions, activities subjects will do, manipulation check, and debriefing. Secure equipment, experimental site, human subjects review board permission, the product being tested, and ancillary supplies. Plan for treatment assignment, control group activities, back-up procedures, control of experimental artifacts, and training of experimenters. Rehearse all activities.
- >Perform the experiment. Monitor and record all activities that occur during the experiment. Ensure that the experimental plan is followed.
- >Perform the data analysis. Follow the data analysis plan. Edit, code, analyze, and interpret data.
- >Construct the written report. Include a title page, table of contents, executive summary, introduction, methods, findings, limitations, conclusions, recommendations, appendices. Insert appropriate figures and tables.
- >Videotape oral presentation. Have each group member report on an aspect of the study. Limit the presentation to ten minutes per project.

The Diet Cola Taste Test

To illustrate the twelve stages, a summary of a student project comparing diet colas as described.¹ After learning about taste test research, the class was divided into five groups of seven people each. They selected a leader, a "company" name, and a topic. Topics were selected by brainstorming and with instructor approval of appropriateness.

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The diet cola group picked a beverage company (Shasta) as the target organization who they were conducting the research for. They wanted to help Shasta plan its marketing strategy with the segmentation and quasi-experimental information they would generate in the study. The research question they came up with was: "Which diet cola taste is preferred by college students?" After reviewing available literature on the diet beverage industry, they formed hypotheses regarding relationships between the primary dependent variable (taste preference), the treatment variable (diet cola brand) and classification variables (gender, age, usage, and order). They predicted the null hypothesis (equivalency) in each case because they had inadequate knowledge of the relationship between variables--even after they completed focus group pilot tests with the research class.

For an experimental design, they chose a repeated measures design. To maximize power with the limited number of subjects (n=120), to save time and money, and to make the field experiment more parsimonious, they decided to have each subject taste and rate all four cola brands tested.

The dependent variable was an oral self-report 5-point rating scale with values ranging from 1-"tastes lousy," to 3-"tastes okay," to 5-"tastes great." The treatment variable was four diet cola brands (Coca-Cola, Pepsi, Royal Crown, and Shasta). Other independent variables included gender, age, usage (light, medium, heavy), and order cola was presented in (to control and measure order effects).

The target population was college students. The students' secondary research indicated that college students formed a major segment of diet cola drinkers. The student researchers conducted the field experiment on the quad of a nearby community college. The sample was selected by convenience. Passers-by were intercepted and asked the qualifying question, "How often do you drink diet colas?" Those who said "daily" were classified as heavy users; "weekly" were medium users; "monthly" were light users; "less than once a month" were excluded from the sample. Since a repeated measures design was used, volunteers were not randomly assigned to conditions, but were exposed to all four brands. The sample size was 120; females comprised 54 percent of the sample.

It was determined a priori that variables would be subjected to computer analysis of measures of dispersion and central tendency, histogram and cross-table figures, and hypothesis tests. A computer codebook of all variables was prepared in advance, as were dummy statistical programs. As mentioned earlier, a community college quad was chosen as the experiment site. Passers-by were asked if they wanted to participate in a diet cola taste test. No other cover story or preamble were mentioned. The experimenter then brought each subject to the covered booth where the cold colas were placed in numbered cups. The experimenter (who was blind as to the identify and order of the colas) instructed the subject how to taste and rate each cola. Water was provided to rinse the subject's mouth between each tasting. The cola order was changed and recorded by another experimenter between tastings. After the taste test, as a manipulation check, the experimenter asked if the respondent was aware of

the taste test before participating. The experiment was conducted over the course of one day. The experimental plan was carried out as determined. All known jeopardizing factors to the experiment were recorded and mentioned in the written and oral report.

After compiling, editing, and entering the data, the aforementioned statistical analyses were executed. In their report, the students noted that a repeated measures analysis of variance test showed that there was a significant difference among colas regarding respondents' taste ratings. Correlated t-tests pinpointed the difference between the diet cola means: the Diet Coke mean rating was significantly higher than all the others; none of the other mean ratings differed significantly from the others. Using oneway analysis of variance tests, the group found that females rated diet coke significantly higher than did males. There were no other significant differences. The research group concluded that Diet Coke was rated number one overall, and that females preferred it more than males did. They recommended that Shasta emphasize its competitive price advantage and not its superior taste. Of course, they also recommended that more taste tests be completed. They were thorough in discussing the limitations of their findings (such as: lack of random selection and assignment, no control group, no use of paired comparisons or other rankings, small sample size). Students put copies of the written report and videotape of their presentation in their portfolios.

Conclusions

Taste tests are an intriguing yet rigorous way to provide students with practical experience in conducting marketing research. All the elements of a research course are included in the project. A few caveats: a taste test project consumes a great deal of the professor's and students' time. The dynamics involved in group problem-solving can become intense. Grading individual performance can be difficult. There is the possibility of fudging, contamination, carelessness, procrastination, and whining. Finally, taste tests cost money.

The good news is that instructors can account for these pitfalls with proper planning and training. The instructor needs to inform students at the beginning of the term about the time demands that the project will require. The project should begin by the third week of class. The instructor should give a lecture on group dynamics and explain the benefits of task orientation.

Grading should be done by assigning points to the written report and the oral presentation. All group members share this grade. Then, the instructor should award points for individual contributions by having students write a summary of what they did on the project--and have them rank their performance relative to the performance of the other members. Costs can be shared by the students and the instructor. Sometimes companies will sponsor the research; this will help defray costs.

Taste tests are worth doing, in spite of the difficult logistics involved. They are interesting and allow students to learn the scientific method in a practical setting. Instructors should try other experimental projects, such as ad testing, limited test marketing, and replicating experiments from marketing journals. The key is to expose students to actual experience. This will let them apply the theories and techniques learned in class to the real world--and will show prospective employers that students can do real work.

References

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