

How to Implement and Understand Consumer Research

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Introduction

Identifying successful products begins with a research plan that includes a clearly defined objective, a list of key questions that must be answered, a product profile, and as detailed a profile as is possible of the consumer for whom the product is intended. While such issues should be obvious, it is surprising to learn that this is not always the case, especially when it comes to identifying the potential customer of the product. Clearly, testing a product with the correct consumer population leads to better business decisions. There are numerous ways used to define/identify the appropriate consumer—however, if they are too wide they can be self-defeating. For example, to appeal to all consumers of roast and ground coffee, or all consumers of pasta may produce an enormous market potential; but this is not likely to succeed because consumers have diverse brand allegiance, and are likely to have diverse preferences so no one product would satisfy them.

This discussion will provide insight to some methodologies used in the consumer testing process and what companies must consider as they define their target populations and develop research strategies to answer key questions. Methodologies that will be discussed include recruiting criteria, focus groups, survey questions, central location vs. mall intercept, and the link with product sensory information. It is not intended as an exhaustive study of all possible techniques. (For more information, see Aaker, et al. (1994), Crask, et al. (1994), and Malhotra (1996)).

Consumer Research Tools

Sensory Evaluation and Marketing Research have different responsibilities when testing products with consumers, but both working independently and together, have similar

objectives (to identify product opportunities and associated risks). A part of the process is to understand consumer behavior in relation to the research question(s) being considered. A variety of techniques have been developed to answer these questions. These can be divided into two primary categories—Qualitative/Exploratory, and Quantitative. Before discussing their uses, it is necessary to consider the information source—the people who will be recruited to provide the responses.

Defining the Target Population

The target population for both qualitative and quantitative research must be discussed and agreed to by the research team (Marketing, Marketing Research, Research & Development, Advertising, Sensory Evaluation, and Quality Assurance, etc.). In many instances, the consumer population is defined in terms of an existing product category or based on assumptions as to who is likely to purchase the product. However, these assumptions are not without risk and need to be verified.

Recruiting criteria usually include the primary shopper or person most likely to influence the choice, gender, age groupings and/or children of specific ages, category usage as a minimum, as well as some brand usage criteria. Because consumers of a specific brand are more sensitive to differences in that brand—brand usage becomes an important consideration in recruiting. Equally important is frequency of use where a similar situation exists. In some situations, the person recruited may not be the target population—they may be purchasing agents, or business managers who make purchasing decisions for industrial, food service, or other types of users. Other criteria may include specific usage situations, regional representation, and standard security screen for employment and past participation. Whenever a certain number of consumers are being targeted, the group is referred to as a “quota group” and the subsequent analysis will determine if differences were a function of these quotas.

The more precisely a population is defined, the more applicable the research. However, if the population is defined too narrowly, the incidence of qualified respondents

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TABLE 1. Typical Recruiting Criteria Scenario for Cold Beverage.

<ul style="list-style-type: none"> • 50% ages 21 to 35 years; 50% ages 36 to 54 years; • 50% males and 50% females • Purchase and drink at least 4 cold beverages other than water per week; • 50% purchase beverages from the grocery store; 50% purchase beverages from a deli, specialty store, gas station, vending machine, etc. • Does not work for a competitive company; no household member works for a marketing research group or department within a competitive company. • Have not participated in other marketing research/focus groups in the past three months; (sometimes it is increased to six months past participation).
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may be low, increasing the number of people who must be contacted to find one who qualifies. This may make the cost of the research prohibitive or limit the extent to which the results can be generalized. An example of recruiting criteria is included in Table 1.

Thus, defining the target population has its own set of issues that reflect a balance between the business strategy and practical problem of being able to recruit a sufficient number of qualified consumers.

Qualitative Methods

Qualitative methods include focus groups, mini groups, and one-on-one interviews where a moderator converses with one respondent at a time. Focus groups generally consist of about 8 to 12 targeted respondents discussing topics of interest or “focusing” on specific research questions. Usually about three or four sessions are sufficient to cover the research questions; however, there can be more groups if there are numerous population segments.

A trained and experienced moderator leads the discussion, with the primary responsibility of encouraging the participants to share their ideas and perceptions of the questions of interest. Each person in the group is encouraged to share their ideas, and to elaborate on the views of other respondents. The research team may observe the sessions from behind a one way mirror (viewing room), and/or have the sessions video taped for viewing at a later date.

The quality of the information depends on the experience of the moderator, the research team, and the ability of the consumers to communicate. Working together, the research team and moderator develop a discussion guide, the ordering of topics, and anticipated length of discussion. Moderators with a high level of interpersonal and communication skills are most effective. Qualitative techniques can be very useful when little is known about a category, there are questions difficult to formulate into a written format, or it is too early in the research process for quantitative information. Exploratory research can be used to provide input

TABLE 2. Consumer Acceptance Results for Cold Beverages.

Products	Acceptance Mean ¹
Prototype Z	7.7 ^a
Prototype X	7.2 ^b
Brand A	7.2 ^b
Store Brand	6.8 ^{b,c}
Regional Brand	6.5 ^c
Market Leader	6.4 ^c
Specialty Brand	6.0 ^{c,d}
Current Product	5.6 ^d

¹Based on results from 120 target consumers in Chicago and Atlanta. Means are based on the 9- point hedonic scale where 9=like extremely and 1=dislike extremely. Means followed by the same superscript letter are not significantly different at the 95% confidence level.

on how and why consumers use products; the types of products that may be replaced; packaging; brand image, awareness, and usage; along with groups’ sorting techniques. Qualitative research provides insights into and understanding of the specific questions asked, and helps gain an understanding of the underlying motivation of consumers. Results can be heavily influenced by the dynamics of both the moderator and respondents in the group. If a person does not like a product, or is concerned about related issues; their opinion could influence other respondents.

Qualitative research is descriptive and provides information that cannot be obtained by other means. It serves as an important activity in the product research process but is not a substitute for quantitative research.

Quantitative Research

The most common test types include central location testing (CLT), mall intercept testing (which is a type of CLT), and home use testing (HUT). Collecting judgments from qualified respondents in a target population allows statistical analysis for making qualified market projections. The number of respondents involved in quantitative research is much larger than in qualitative research, and generally ranges from about seventy-five to several hundred or more. This often takes place in multiple cities.

There is much written, but little agreement about the number of participants needed in a test. There are widely held opinions—some companies have developed quite elaborate procedures that specify how many consumers to test, where to test, and so forth. These specifications are usually based on statistical models with assumptions about population distribution and market conditions that bear little resemblance to current market conditions. Other companies leave decisions about testing to the researcher based on experience combined with existing company practices. In any case, it is a matter for discussion that should reflect the stage of the project and how the results will be used. It should be remembered that when the number of consumers in a test is

TABLE 3. Consumer Preference Segmentation for Cold Beverages.

Preference Segment 1		Preference Segment 2	
Products	Acceptance Mean ¹	Products	Acceptance Mean ¹
Prototype Z	7.9 ^a	Specialty Brand	7.8 ^a
Prototype X	7.7 ^a	Regional Brand	7.6 ^a
Brand A	7.3 ^b	Store Brand	7.2 ^b
Current Product	6.8 ^{b,c}	Prototype X	6.8 ^b
Store Brand	6.5 ^c	Current Product	6.3 ^c
Market Leader	6.2 ^c	Prototype Z	6.0 ^c
Regional Brand	5.6 ^d	Brand A	5.4 ^d
Specialty Brand	4.9 ^e	Market Leader	5.1 ^d

¹Based on results from 120 target consumers in Chicago and Atlanta. Means are based on the 9-point hedonic scale where 9=like extremely and 1=dislike extremely. Means followed by the same superscript letter are not significantly different at the 95% confidence level.

small; e.g., less than about 75 to 100—there is an increased risk of reaching an incorrect decision. This is not to suggest that one cannot use limited numbers of consumers, only that decisions should be used with caution.

Products may be evaluated blind or branded, and results from qualitative research can be used to recommend a course of action. The most common question asked in quantitative research is: How well liked are the products?

Measures of Likeability in Quantitative Research

There are many ways of asking consumers how well they like a product. However, the most typical use the paired model (a type of ranking test) or a scoring system such as the 9-point hedonic scale. Information about the relative merits of these scales can be found in the text by Stone and Sidel (1993). Multiple questions may be included on a scorecard including just-about-right scales, open ended questions for likes and dislikes, purchase intent, and so on.

Example of Quantitative Research Using Central Location Testing (CLT)

Central Location Testing Results

Data from central location testing can be conveyed in a number of formats, with a typical example as shown in Table 2. This information conveys that the prototype A was rated significantly higher than all other products, and that prototype X, brand A, and store brand were at parity. All products were rated significantly higher than current product.

Marketing and Technical Issues

In addition to the Central Location Test of 3 or 4 products, one can significantly enhance its value by including a sensory analysis in the system. Additional questions can be answered, including:

- Are sensory differences important to consumer acceptance?
- Are there opportunities for improving acceptance based on ingredients/ technology?

- Can sensory properties be used to predict acceptance?
- Can acceptance be improved by sensory, ingredient, and process changes?
- Are there unique consumer preference segments?

Research designed to answer the above questions must be of a larger scale; using more than 3 or 4 products. Typically, an array of 15 to 20 products is sufficient to explore these issues. Reducing the product array increases the risk of compromising acceptance prediction models. Increasing the array to more than 30 increases cost and will not improve prediction models. During the product selection process, the goal is to minimize the sensory redundancy by eliminating too many similar products that will compromise the validity of the model.

Sensory Research

The inclusion of sensory information insures that results from a CLT will be more useful by helping to explain the basis for the differences among the products. The most useful sensory information is descriptive, obtained from a Quantitative Descriptive Analysis (QDA[®]). It enables one to identify the important sensory characteristics of products (that influence acceptance). Because the language used is consumer based, it provides results that are understood by Marketing Research and R&D.

QDA[®] also provides a means of reducing the number of products that must be evaluated by consumers by minimizing sensory redundancy. It also ensures that consumers will be able to distinguish among the samples to provide feedback on their specific likes and dislikes.

QDA[®] information has numerous other applications, including sensory specification information for Quality Control and Quality Assurance. Monitoring competition is an application for QDA[®] data, and results can be used in sales literature and for advertising claim substantiation.

Product Improvements

Formulation changes can impact consumer acceptance and must be done using information provided by Marketing

Research and Sensory Evaluation. When conducting category reviews or product optimizations, project objectives should include establishing consumer acceptance measures for products of interest; identifying important sensory characteristics of products that influence consumer acceptance; and identifying package types, label statements, and new product concepts to provide direction for product improvement.

The output from this type of research should identify optimum products within the framework of current, competitive, and experimental products. The key sensory attributes, ingredients, and processing variables that result in increased product acceptance should also be identified. Data analysis should include determining whether unique consumer preference segments exist in the population. Examples of unique preference segments are provided in Table 3. These data illustrate the strong likes by Preference Segment 1 for Prototype A and Z, and dislikes for the Regional and Specialty Brands. Preference Segment 2 liked the Specialty and Regional Brands best, and disliked the Market Leader. Data such as these are very typical of results obtained from multi-sample testing among a large enough population to conduct segmentation. These data clearly indicate the need for two types of products in the market to satisfy both Preference Segments. A company may search for an ideal bridge product, but these products are often not well liked by either Preference Segment.

Sensory analysis data (QDA®) can be used to better understand the product attributes that drive the Preference Segmentation results, and provide direct feedback to R&D about the key sensory attributes important for reformulation.

Integration of Sensory and MRD Procedures

As the marketplace changes, products must be tailored to current lifestyles. Examples of products that have been

modified in recent years include the microwavable soup-in-cup, pre-packaged salads, microwavable entrees, lunch-buckets, and so on. Sensory and marketing research must work together to measure the product inside and outside the package.

Conclusions

A more comprehensive approach to product development and consumer satisfaction is possible with the integration of sensory evaluation and marketing research. Continuous product improvements are necessary to keep up with lifestyle and marketplace changes. A comprehensive approach to quality is essential. The research tools exist and are constantly being improved for the consumer products industry.

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