Eye Tracking Experimental Studies to Explore

Consumer Use of Food Labeling Information and Consumer Response to Online Surveys

0910-NEW

SUPPORTING STATEMENT

B. Statistical Methods

1. Respondent Universe and Sampling Methods

   The respondent universe of Study 1 is members of Eyetracking, Inc.'s Participant Database. Consumers who are 18 or older in locations across the U.S. voluntarily sign up for the database via an advertisement or word of mouth. Currently, there are over 100,000 participants in the Database. Eyetracking, Inc., the Agency's contractor, plans to establish convenience samples of 200 residents evenly distributed among five different locations. The study will aim to have a reasonable degree of diversity in participant gender, age, and education.

   The respondent universe of Study 2 is grocery shoppers in two stores, each in a different locations. The study will aim to have a reasonable degree of diversity in participant gender, age, and education. The target sample size is 60 participants.

   As discussed in Section A2, the primary hypotheses in the studies relate to between-label differences in participants' viewing behaviors and cognitive responses to the labels they view. We will impose no a priori direction of differences, if any (i.e., we assume all tests are two-tailed). For Study 1, the target sample size is projected to yield at least 48 observations per experimental condition, for the majority of experimental factors, in pair-wise comparisons. With dependent variables measured as proportions or means, we expect the target sample size will provide adequate power ($\alpha = 0.05$ and $\beta = 0.2$) to identify main effects of a medium size.

   The Agency does not intend to generate nationally representative results or precise estimates of population parameters from either study. The strength of Study 1, an experimental study, lies in its internal validity, on which meaningful estimates of differences across experimental conditions can be produced and generalized. As discussed in the following sections, the Agency has taken commonly accepted measures to enhance internal validity of the study. Examples of these measures include random assignment of respondents and conditions, use of control groups, and use of comparison conditions and relevant covariates.

2. Procedures for the Collection of Information

   Study 1: The contractor will send emails to invite members of its database in the Washington, D.C. metropolitan area to go to a central location to participate in a pretest

of the study (Appendix A – laboratory pretest invitation). The recruitment will target for diversity in participants' gender, age, race, and education. Eligible respondents will be asked to complete a draft questionnaire on a computer, which is equipped with eye-tracking capacities to record respondents' eye movements. Once a respondent completes the questionnaire (Appendix B – laboratory pretest study), a moderator will ask the participants about their impressions of the study, explanations of actions during the study, and other feedback about the study. Except with regard to geographical diversity, the contractor will use the same approach to recruit respondents for the full study (Appendix C – laboratory study invitation, Appendix D – laboratory study).

The study is designed to help test hypotheses listed in A.2 above. The questions, tasks, and purpose of questions are shown in Table 3. Proposed label images and information are shown in Appendix E.

Table 3. Structure of Study 1

Question	Task and Purpose
A0	Free scans of label images (participants will not be asked to perform any tasks with any of the images). Purpose: to test hypotheses related to viewing pattern dependent variables: notice of area of interest, order that various label components are viewed, and length of viewing time spent on various label components. All PDPs and NFLs will be used in the free scan.
A1 and A2	Consumption and purchase experiences with the three conventional food products covered in the study. Purpose: warm-up and background information.
A3–A6	In each question, a pair of the front-of-pack (FOP) label of two conventional food products of the same category will be shown. Each question involves a choice between the two products, based on perceived healthfulness, per container amount of calories, and per serving amount of added sugars, respectively. A4-A5 use a different product/FOP pair than A6-A7. Each pair of products will have the same design (no nutrition symbol, an Institute of Medicine (IOM) nutrition symbol, an IOM symbol and two claims, an Facts-Up-Front (FUF) nutrition symbol, and an FUF symbol and two claims) The Nutrition Facts label (NFL) associated with each product will be made available to respondents who may select to view it to help answer the questions. The NFL will be presented with three

	variations: the current format, the current format with the amount of calories enlarged, and the current format with the order of serving size and number of servings per container reversed. When the IOM FOP is used, the IOM-suggested NFL is also used. A time limit will be imposed on half of the respondents. Purpose: to test hypotheses related to all dependent variables (viewing pattern and information processing).
A7	(Asked of "time limit" respondents) Self-assessed time pressure when they answered questions.
A8-A9	In these two questions, an FOP label of a conventional food product that was not asked in A3-A6 is shown to the respondents. The questions ask respondents to rate the healthfulness and nutrient content of the product. The product has two FOP designs, one includes a nutrient content claim and another includes the same nutrient content claim but with a disclosure statement. The NFL of the product will be provided to respondents. Purpose: to test hypotheses related to all dependent variables (viewing pattern and information processing).
A10-A11	In these two questions, a Nutrition Facts label will be shown to the respondents. The questions will ask them to calculate the calorie amount in the entire container and the amount of the product they may consume if they were told to limit their carbohydrate intake, respectively. Purpose: to test hypotheses related to all dependent variables (viewing pattern and information processing).
A12	In this question, an FOP label of a dietary supplement product that makes a structure/function claim will be shown. The label either contains a DSHEA disclaimer or it does not. Respondents will be asked about the perceived likelihood that the product will deliver the benefit claimed on the package. Purpose: to test hypotheses related to all dependent variables (viewing pattern and information processing).
B1-B7	Individual background information such as label reading practices, dietary interests, and dietary supplement experience. Purpose: background information.
E1-E3	Debriefing questions about respondents' reactions when they were asked about perceived product characteristics, self-reported use of label information, and self-reported time pressure.

	Purpose: background information.

Study 2: The contractor will intercept and screen shoppers at the store front (Appendix F). Eligible shoppers will be invited to participate in the study. Participants will first undergo a trial shopping experience to familiarize them with the eye-tracking equipment. Then, they will be told to shop as they normally do but buy at least one product in each of two selected food categories. Finally, they will be administered a short interview to collect information on their food shopping criteria, use and perception of label information, and other background information. The script for Study 2 is shown in Appendix G.

3. Methods to Maximize Response Rates and Deal with Non-response

   We will conduct pretests to help improve understandability of the questionnaire, to reduce participant burden, and to enhance interview administration. We will keep the study questionnaire at a reasonable length to minimize non-completion.

   In addition, the Study 1 contractor will (1) identify FDA as the sponsor of the study and state the purpose of the study; (2) provide an email address and a toll-free number for prospective participants to inquire about the authenticity of the interview and other questions; and (3) monitor all interviews and sample assignment and solve any problems daily throughout the course of the collection of information.

4. Test of Procedures or Methods to be Undertaken

   In Study 1, we will conduct a pretest to examine the length of the questionnaire, and to identify and solve any potential problem with field administration of the study and respondent burden.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

   The Agency has consulted with statisticians and operation experts at its contractors, EyeTracking, Inc. and TNS. Chung-Tung Jordan Lin, Ph.D., at the FDA will lead data analyses.

List of Appendices

A Laboratory pretest invitation
B Laboratory pretest questionnaire
C Laboratory study invitation
D Laboratory study
E Label images and information