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THE EFFECT OF NUTRITIONAL INFORMATION ON ATTITUDE AND CONSUMPTION OF BUTTER

by

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Abstract

This study examines the impact of print advertisements and articles containing nutritional information on consumer attitudes and behavior. It was found that nutritional information in generic print advertisements did not significantly affect attitudes and behavior intentions for butter, but that nutritional information in articles did affect attitudes and intentions.

Introduction

Health concerns and the desire for a healthy lifestyle are prompting consumers to adopt better eating habits. Trends in food consumption reflect this change. People are eating less red meat and more white meats, fruits and vegetables. The consequence of changing diets has increased the demand for some agricultural products and reduced demand for others.

Among the foods that have experienced a severe decrease in demand is butter. From 1960 to 1991, butter consumption has declined by 57%, from 7.34 kg per capita per year to 3.12 (Statistics Canada 1960-91). Butter is commonly perceived as expensive, high in cholesterol, saturated fat and calories, and often negatively implicated in studies linking heart disease to diet. Margarine, on the other hand, is perceived as less expensive, lower in cholesterol and calories, and easier to spread than butter (Goldfarb Consultants 1992).

In response to declining demand, the Dairy Bureau of Canada has been promoting butter through generic advertising campaigns. The cost of such programs ranging from $1.5 million, in 1978, to more than $7.1 million, in 1991. Generic print advertising is one technique, used by the Dairy Bureau of Canada, to supply nutritional information to consumers, to counteract negative dietary concerns and to increase consumer demand.

A variety of econometric studies have measured the impact of butter advertising on demand. These studies report both positive (Chang and Kinnucan 1991; Goddard and Amuah 1989; Goddard and Cozzarin 1992) and negative (Chang and Kinnucan 1992; Cox 1992) long-run butter advertising elasticities. In Cox 1992, butter advertising was unable to surmount the negative attitude consumers associate with butter even though it did induce recall of the product, or product category. Though econometric studies have investigated a variety of issues in generic advertising effectiveness, an ignored area is the effect of generic nutritional advertising on consumers' attitude and behavior.

The purpose of this study is to assess the impact that nutritional generic advertising has on consumers' attitudes and behavior. Investigations include the relative influence of vested-interest and non vested-interest nutritional information, the role of nutritional advertising in offsetting negative information and the role of nutritional advertising in enhancing positive information. The following sections present a review of previous studies, a description of the experiment used in this study, the results of the experiment, implications and limitations.

Previous Research

Literature consistently reports that consumers are more responsive to unfavorable information than to favorable information. Weinberg and Dillon (1980) found that unfavorable information is more influential than favorable information on homemakers' evaluation of generic goods and services. The proposed reasons for this differential influence include surprise, frequency of use, ambiguity, uncertainty, and differences in causal attribution. According to Kanouse and Hanson (1971), negative cues have a greater impact because they are less common than positive cues. Since unfavorable information has a more dispositional value to a product, it is discounted less and disproportionately influences impressions, beliefs and attitudes (Mizerski 1982).

Generic nutritional advertising is a message-based persuasion in which consumers are assumed to be interested in learning about the food advertised and thus will read the advertisement's nutritional message thoughtfully. This assumes a very active recipient of the communication and implicitly assumes that people "respond to information". The recipient, in responding to the information may also actively generate and rehearse their own thoughts (Greenwald 1968). These thoughts influence attitude, attitude change and behavior intentions even though they are sometimes qualitatively different from the message's content.

The impact of nutritional information on consumer attitudes has been linked to the consumer's nutritional knowledge. Nutritional knowledge affects the amount of nutritional information linked to the advertised brands and the encoding of this information. Subjects with more nutritional knowledge recall more nutritional information and are more likely to encode specific information about nutrients (Brucks, Mitchell and Staelin 1984). If the recipient has enough nutritional knowledge to make nutritional information meaningful, they will perceive nutritional information as useful and will process it. Scammon (1977) reports that providing nutritional information in advertising can affect consumers' evaluation of the nutrition associated to products and their choice of products. Brucks, Mitchell and Staelin (1984), on the other hand, found that consumers did not use nutritional information to assess the nutrition derived from a product. Furthermore, they found that increasing the amount of nutritional information deterred subjects from using the information. One explanation for this result is that consumers did not have enough nutritional knowledge to enable them to make the necessary nutritional inferences (Jacoby, Chestnut and Silberman 1977).

Research also suggests that nutritional information may have little effect on consumers' purchase decision. Taste and price were found more important to consumers than nutrition within a product class (Brucks, Mitchell and Staelin 1984). An examination of beta weights indicated that relative taste has the greatest effect on purchase intention. Relative nutrition also affects purchase preference, but the affect is much weaker than that of taste and absolute nutrition (Brucks, Mitchell and Staelin 1984). These results are consistent with Gallay (1979) who also found that taste explained twice as much variance as nutrition level but both were highly significant in influencing purchase preferences. In contrast, Kinnucan, Wenkateswaran and Hatch's (1990) investigation of the effectiveness of a catfish advertising program found that nutritional advertising influenced purchase behavior both directly and indirectly by changing attitudes toward the product. It is suggested, in the case of catfish, that nutritional advertising is effective for a low-priced, undifferentiated product, whose characteristics are not readily ascertained by pre-purchase study. In the catfish study a low-involvement hierarchy was the norm and consumers did react to the advertisements on a trial basis.

In the case of butter, it is hypothesized that nutritional advertising will improve consumer attitudes and behavior towards butter. Family physicians and other reputable sources have voiced negative nutritional messages about butter for a very long time. As a result, it is believed that media coverage of negative health and nutritional issues related to butter has reached a saturation point. It is predicted that consumers will be unaffected by additional negative nutritional information because unfavorable information is not surprizing and consumers have already drastically altered their use of butter. Instead consumers are predicted to react positively to a credible message about butter's favorable attributes.

Research Methods

Type of Media

To test the above hypothesis, an after-only with control, laboratory experiment was designed. The experiment collected information on consumer attitudes and behavior after exposure to nutritional messages presented in advertisements and articles. The print medium was selected because print is commonly used for nutritional advertising of food products. Also when considering a single exposure to advertising, print advertising scores consistently higher on most message related criteria and in eliciting purchase intention (Eadie 1987).

The experiment used a brochure, similar in style to the advertising supplements from Participaction, a well-known Government institution whose focus is physical fitness. To disguise the real purpose of the research and to enhance natural, spontaneous, and effective responses the brochure contained several nutrition and fitness articles as well as advertisements from different food groups. The brochure was unobtrusive and

credible thus inducing persuasion. Allan (1990) and Weersink (1991) found that consumers perceive primary non-commercial sources of information, such as government publication, family doctors, dietitian and food labels, to be very reliable. The cover page of the advertising supplement, entitled "Healthy Choices", was unchanged and retained the name and logo of Participaction.

Design

The objective of the experiment was to determine the impact that nutritional articles about butter alone and in combination with a positive nutritional butter advertisement had on consumer attitudes and behavior. Six different brochures were created for the study, one for each experimental treatment and one for the control group. The brochure used by the control group did not contain any information specific to butter. The experimental treatments were: 1) an article containing negative nutritional information about butter, 2) the negative article and a butter advertisement containing nutritional information, 3) the advertisement, 4) an article containing positive nutritional information about butter, and 5) the positive article and the advertisement. The cover pages (pages 1 and 8) as well as the two central pages (pages 4 and 5) were the same in all versions. The article, if any, always appeared in the same position (page 3) and the butter advertisement, if any, on page 7.

The advertisement used in the experiment was a butter advertisement from the 1984 Dairy Bureau of Canada consumers' campaign. The principal message in the advertisement was that butter has the same number of calories as margarine. This advertisement was chosen because it contained extensive nutritional information while also featuring non-verbal, affect-evoking elements.

The article containing positive nutritional information, entitled "Myth Information: The Truth About Butter", stressed the equality of butter and margarine in terms of calories and fat content. The article also stated that butter contains little cholesterol in weight and that only 30% of a persons' total cholesterol comes from their diet.

The article containing negative nutritional information, entitled "Put Butter Aside: A Smart Move", emphasized the high cholesterol content of butter versus margarine. The article covered today's health concerns, explicitly linking butter consumption to blood cholesterol levels and stressing the link between diet and heart disease. Both articles included nutrient data in detailed numerical form (Muller 1978) and were written in cooperation with a nutrition expert and reviewed by a professional journalist.

Procedure

The mall intercept method was used to recruit subjects for the experiment. To minimize non coverage errors connected with the mall intercept method (Sudman 1980) the experiment took place in a medium sized city in South-Western Ontario in four different shopping centers in differing neighborhoods. Individuals, approached randomly by the interviewer as they walked by the experimental station, were asked to read each page of the 8-page brochure including the advertisements, and afterwards to fill out a questionnaire. The interviewer was instructed to approach designated respondents in the same way, from asking their cooperation to providing an explanation of the purpose of the study. Respondents were given one of the six brochures on a sequential basis. Subjects did not have a time constraint to read the brochure. A non-monetary incentive was offered. Subjects were told that the study was a University sponsored "survey" on attitudes towards food and were debriefed, upon request, after completing the questionnaire.

Measures

Data to derive measures of attitude and behavior were obtained from the responses to the questionnaire. These measures are described in the following subsections.

Overall Attitude. Overall attitude towards butter was measured by asking subjects to compare butter to margarine on a seven-point scale ranging from "much worse than margarine" to "much better than margarine". The scale was coded 1 to 7. Measuring attitudes in this manner follows the traditional model of attitudes, which assumes that the three components of attitude (cognitive, affective and behavioral) are consistent with one another and measuring any one component implies the other two. Unfortunately, this is often a naive assumption, since our overt behavior is not always consistent with our beliefs or feelings.

Multi-attribute Attitude. Realizing the limitations of an overall measure of attitudes, the questionnaire was also designed to elicit the data necessary to derive a multi-attribute measurement of attitudes. The Fishbein model (Fishbein and Ajzen 1975), the best known of a whole class of similar models sometimes referred to as multi-attribute models, conceptualizes attitudes as having only one component: affect. The model explicitly recognizes that "attitude object" may have a number of attributes that may differ in importance. The Fishbein model makes a clear distinction between intention and overt behavior. Overt behavior is determined by the individual's intentions and not from his or her attitudes. Within the framework of the Fishbien model, salient beliefs are those beliefs activated when a person evaluates an attitudinal object. The salient beliefs used in the questionnaire were those identified by the Dairy Bureau of Canada consumer tracking studies (Goldfarb Consultants 1992); price, taste, health, good for

cooking, cholesterol content, ease of spreading, fat content, calorie content, and natural product.

Three sets of questions were used to derive the multi-attribute measurement of attitude. The first investigated the strength of each salient belief for butter, and the second did the same for margarine. Responses were collected on seven-point scales with end points labeled "Very Bad" and "Very Good". A third set of questions assessed the attribute-benefit belief on a seven-point scale anchored to "Not Important", "Very Important". All the scales were coded 1 to 7. The multi-attribute measurement in this study is the average attribute benefit belief for the set of identified attributes. The attribute benefit belief for an attribute is the attribute belief multiplied by the importance of the corresponding belief. The range for the resulting multi-attribute measurements of attitude is 1 to 49.

Intention to Consume. Many factors mediate the impact that advertising has on one's purchase of a product. One factor is the degree of inventory depletion that needs to occur before one will buy more of a brand. Thus, measures of purchase intention may not be sensitive enough to capture the impact of consumption related advertising. Intention to consume, on the other hand, is a precondition to purchasing and is therefore a more sensitive measure of communication effectiveness (Wansink and Ray 1992). It is doubtful however if such an area of inquiry is amenable to exploration by direct questions. People may not be conscious of their intent to consume or may be unwilling to admit their intention if it reflects badly on their self-image.

In this study, subjects answered the hypothetical question: "A friend of yours takes you out for breakfast and the waiter brings you two slices of toast and one serving of butter. What would you do?". The supplied responses were: I would call the waiter and ask for margarine / I would eat the toast without butter / I would spread a little butter on each slice of toast / I would spread the whole serving of butter on the two slices of toast / I would spread the whole serving of butter on one slice of toast, and ask for more butter. Numerals assigned to the responds were as follows: -1 'asking for margarine', 0 'eating the toast without butter' and 1, 2, 3 for 'little butter', 'whole serving of butter' and 'asking for more butter', respectively. By assuming an interval measurement where only ordinal measurement exists, some measurement error will occur. However, this error is generally the attenuation of relations among variables and not an overestimation of results (Bohrnstedt 1970).

Demographics and Past Consumption. The questionnaire included the standard questions on personal demographics and past consumption. Past consumption was measured by asking respondents if they had eaten butter and margarine during the previous week.