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Determinants of Consumers' Use of Nutritional Information on Food Packages

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ABSTRACT

This study examines how sociodemographic characteristics of a household's main meal planner affect use of nutritional information concerning ingredients, health benefits, calories, sodium, vitamins/minerals, fiber, fat, cholesterol, and sugar content on food packages. Results generally suggest that well-educated, female main meal planners are more likely to use various types of nutritional information than others. Main meal planners who place more importance on nutrition but less importance on taste and those who have a higher perception of the healthfulness of their diet are more likely to use nutritional information on packages than others. Household size, race, employment status, urbanization, region, age, and income are also significant factors.

Key Words: food packages, food shopping, labels, nutritional information, sociodemographics.

Although more Americans are now aware of the importance of good nutrition due to the various public and private nutrition information programs, a recent study by Frazao reports that most diets still fall short of the *Dietary Guidelines for Americans*. These guidelines, published in 1990 by the U.S. Department of Agriculture (USDA), include the following recommendations: (*a*) eat a variety of foods; (*b*) maintain a healthy weight; (*c*) choose a diet low in fat, saturated fat, and cholesterol; (*d*) choose a diet with plenty of vegetables, fruits, and grain products; (*e*) use sugars in moderation; (*f*) use salt and sodium only in moderation; and (*g*) drink alcoholic beverages in moderation if taken. Moreover, in an effort to make information available and to teach consumers how to use nutritional information, the federal Nutrition Labeling and Education Act (NLEA), originally passed in 1990, requires specific nutritional information on food packages. Any claims for the food product must now be explained and justified. These new regulations update the list of nutrients that appear on the labels, standardize serving sizes, define nutrient content claims, and provide a mechanism for evaluating health claims (Frazao).

The effectiveness of nutrition education programs such as the NLEA is contingent upon consumers' use of nutritional information on food packages. It is possible that many individuals' diets fall short of the *Dietary Guidelines* because they do not use or care about nutritional information provided on food packages to help them in their food buying decisions. In fact, individuals armed with proper knowledge may make better food choices. For instance, Smallwood and Blay-

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lock revealed that general nutrition knowledge about fiber content of foods is associated with higher levels of fiber consumption. Similarly, Frazao and Cleveland observed that specific knowledge about total fat content of foods is associated with increased likelihood of meeting the intake recommendations for saturated fats and cholesterol.

It is therefore important to know the factors affecting consumers' use of nutritional information on food packages. Scant information, however, is available addressing this topic. A search of current literature revealed no other study that has examined the use by consumers of various nutritional information (e.g., fat content, cholesterol content, health claims) on food packages. Other studies (e.g., Guthrie et al.; Klopp and McDonald) have analyzed the use of nutritional labels as a whole, but not for specific types of information. In addition, these studies have used relatively older data sets and may not represent current market conditions.

To fill this void, this article attempts to examine the effect of sociodemographic factors on the main meal planner's use of nutritional information on food packages using the USDA's 1991 "Diet and Health Knowledge Survey" (DHKS). Knowledge of the relationship between sociodemographic characteristics and use of nutritional information on food packages is useful in the design and implementation of nutrition information programs. For instance, since the use of nutritional information of a household's main meal planner may affect the health of household members such as the elderly and children, it is important to identify individuals who may need greater appreciation for nutrition information on food packages to improve the health of all members of the household. In addition, the findings of this study could also be used as a guide in directing government nutrition information and food marketing programs toward specific population subgroups. Sociodemographic factors can be used to tailor health interventions and marketing campaigns to specific population subgroups. Lin suggested that targeted consumer education is more efficient than generic programs in improving the general health of the nation. Food marketers may also use the findings of this study to target particular nutritional information to specific individuals.

Empirical Model

There are no theoretical or empirical guidelines on how sociodemographic factors should be considered in explaining a main meal planner's use of nutritional information on food packages. However, following Guthrie et al., the economic model of information search (first introduced by Stigler in 1961) can be employed to model nutrition label use. The problem of information search analyzed by Stigler was specific to the ascertainment of market price. In this study, the use of nutrition labels is assumed as an act of consumer information search since the utilization of product information, such as that found on food packages, is an active process that involves searching out information, evaluating its meaning, and making a decision based on that evaluation (Senauer, Asp, and Kinsey).

The prepurchase search of nutrition information could be measured in terms of label use. Consumers will continue to use information on nutrition labels until the cost of use outweighs the benefits of label use. The cost of nutrition label use is reflected in the time spent using the labels. The benefits of search may be reflected in better food choices, more nutritious diets, and better health.

The model developed in this study examines how the use of nutritional information by a household's main meal planner is influenced by sociodemographic characteristics. A main meal planner is defined as the individual who selects and determines the content, preparation, and consumption of foods in the household. Respondents in the survey were given the following general instructions by the interviewer: "I am going to read some types of information that may be found on food packages and labels. For each, please tell me if you use this type of information often, sometimes, rarely, or never." These responses served as the dependent variables in the model. The various types of label information about which each respondent was asked included ingredi-

ents, health benefits, calories, sodium, vitamins and minerals, fiber, fat, cholesterol, and sugar (refer to table 2).

It is well known that consumer behavior and attitudes are affected by the acquisition of information such as that related to nutritional information on food packages. Based on the economics of information search framework discussed above, Moore and Lehmann proposed that the determinants of information search consist of variables related to market environment, individual differences, situational variables, and perceptions of product importance. The fact that the acquisition of information is affected by individual characteristics is not new in economics (Ippolito and Mathios). For instance, previous research suggests that the acquisition of information, and consequently behavior, is influenced by various demographic factors such as age, sex, household size, and race (Katona and Mueller); by the marketing environment, including urbanization and region (Park, Iyer, and Smith); by education (Schultz); by factors that affect time constraints, such as employment (Becker; Beatty and Smith); and by perception factors (Guthrie et al.). Consequently, these factors have been hypothesized to be important determinants of an individual's ability to process new information into changed behavior.

Based on these factors and conditioned on the data available in the DHKS, the independent variables used in the analysis here include household size, race, sex, employment status, urbanization, age, income, education, geographic region, and other "perception" factors. The squares of age and income are included to determine any nonlinearities in the relationship between these variables and the dependent variable. The independent variables and their means are listed in table 1, while the dependent variables and their means are presented in table 2. An empirical model is estimated for each type of nutritional information.

Racial, urbanization, and regional differences are included as independent variables because of possible differences in media exposure (Putler and Frazao), food consumption habits and preferences, and the marketing environment (Guthrie et al.). For instance, blacks and other nonwhite races have lower newspaper and magazine readership rates than do whites (U.S. Department of Health and Human Services). Therefore, it is likely that nonwhites are less aware of the benefits of good nutrition to their health, and consequently are less likely to use nutritional information when buying foods. It is also hypothesized that main meal planners residing in the city or suburban areas are more likely to use nutritional information than those residing in nonmetro areas, due to more exposure about the importance of nutrition from various media.

Previous studies indicate that men are typically less interested in nutrition and health issues than are women (Food Marketing Institute). Nayga reported that men are less likely to perceive nutrition as important in food shopping than are women. Thus, men are probably less likely than women to use nutritional information on food packages. An employment variable is included in the analysis since it has been reported that full-time homemakers may be more concerned about issues like nutrition because of the perception they have of their roles at home (Douglas). Therefore, unemployed main meal planners are hypothesized to be more likely to use nutritional information on food packages than are employed main meal planners. Employment may also reflect the value of time and the cost of gathering nutrition information for the household (Becker; Ippolito and Mathios).

Grossman hypothesized that the rate of depreciation for good health increases with age. Consequently, older individuals might be more cautious about what they eat for health reasons. It is then hypothesized that older main meal planners are more likely than younger main meal planners to use nutritional information on food packages.

Education is included to reflect possible differences in an individual's ability to absorb and react to food label information. Schultz hypothesized that education is an important determinant of an individual's ability to process new information (e.g., from food labels) into changed behavior. Since higher-educated individuals may be more likely to read scien-

Table 1. Description and Means of Independent Variables Used in the Analysis

Independent Variable	Description	Mean
HHSZ	Household size	2.62
BLACK	1 if main meal planner is black; 0 otherwise	0.15
OTHER	1 if main meal planner is of some other race; 0 otherwise	0.04
MALE	1 if main meal planner is male; 0 otherwise	0.20
EMPLOYED	1 if main meal planner is employed; 0 otherwise	0.46
CITY	1 if main meal planner resides in the city; 0 otherwise	0.30
NONMETRO	1 if main meal planner resides in nonmetro area; 0 otherwise	0.31
AGE	Age of main meal planner in years	48.32
AGESQ	Square of age	
INCOME	Household income ($)	23,702.13
INCOMESQ	Square of household income	
COLLEGE	1 if main meal planner's highest education completed is college; 0 otherwise	0.27
GRAD	1 if main meal planner's highest education completed is graduate school; 0 otherwise	0.06
NE	1 if residence is in the Northeast; 0 otherwise	0.17
MW	1 if residence is in the Midwest; 0 otherwise	0.25
WEST	1 if residence is in the West; 0 otherwise	0.21
SAFETY	Rating of importance of product safety when food shopping[a]	5.41
NUTRITION	Rating of importance of nutrition when food shopping[a]	5.29
PRICE	Rating of importance of price when food shopping[a]	5.20
TASTE	Rating of importance of taste when food shopping[a]	5.60
DISEASE	Rating of belief that what is eaten can impact the risk of developing a disease like heart disease or cancer[b]	5.09
HLTHDIET	Perceived healthfulness of diet[c]	2.75

Note: Base group includes: white, female, unemployed, suburban, below college education, and South.
[a] Responses range from 1 to 6, where 1 = not important at all, 6 = very important.
[b] Responses range from 1 to 6, where 1 = strongly disagree, 6 = strongly agree.
[c] Responses range from 1 to 5, where 1 = excellent, 5 = poor.

Table 2. Description and Means of Dependent Variables Used in the Analysis

Dependent Variable	Description	Mean
INGRED	Use of information on list of ingredients	2.99
HEALTH	Use of information on statements about health benefits	2.73
CALOR	Use of information on calories in a serving	2.80
SODIUM	Use of information on sodium content	2.71
VITMIN	Use of information on vitamin or mineral content	2.60
FIBER	Use of information on fiber content	2.51
FAT	Use of information on fat content	2.93
CHOL	Use of information on cholesterol content	2.90
SUGAR	Use of information on sugar content	2.78

Notes: The respondents were given the following general instructions: "I am going to read some types of information that may be found on food packages and labels. For each, please tell me if you use this type of information often, sometimes, rarely, or never." Responses, ranging from 1 to 4, were coded as follows: 4 = often, 3 = sometimes, 2 = rarely, and 1 = never.

tific or academic articles or prints and may be more likely to be exposed to health/nutrition-related news sources, education may then increase their desire to know more about the nutritional aspects of the food they eat. Moreover, education may aid in the interpretation of label information, thereby decreasing the cost of information search (Guthrie et al.). This would lead to the hypothesis that higher-educated main meal planners are more likely to use nutritional information on food packages than lower-educated main meal planners. Perception variables are also included to assess the impact on label use of the importance of product attributes such as product safety, nutrition, price, and taste when food shopping, as well as perceptions on healthfulness of one's diet and degree of diet-disease belief (see table 1 for full descriptions).

The dependent variables are measured on a scale that is discrete and ordinal. Hence, ordered logit models are employed in the analysis here. The most suitable technique of estimation when using logit is maximum likelihood. Although this technique requires the use of iterative algorithm, this procedure assumes the large-sample properties of consistency and asymptotic normality of the parameter estimates so that conventional tests of significance are applicable.

Data

The data set used in this study is taken from the USDA's 1991 "Diet and Health Knowledge Survey" (DHKS). The target individuals in this survey are the main meal preparers or planners in households in the 48 conterminous states who participated in the USDA's 1991 "Continuing Survey of Food Intakes by Individuals" (CSFII). Data were collected by computer-assisted telephone interviews (and in-person interviews for those without telephones). A total of 1,925 individuals participated in the DHKS. Due to incomplete data for some of the variables, only 1,448 observations were used in the present analysis. The DHKS sample was determined to be representative at the household level (Lin). (Refer to tables 1 and 2 for listings of the variables and their means.)

Results

The maximum likelihood estimates for the logit analysis are presented in table 3. The significance level chosen for this analysis was 0.05. Based on the statistically significant coefficients, household size is positively related to the likelihood of using nutritional information about vitamins/minerals and sugar content on food packages. This result implies that main meal planners of larger households are more likely to use information concerning these contents on food packages. The reason for this result may be that main meal planners view the use of nutritional information on food packages as beneficial because they are extended to more persons. Hence, the relative value of the time spent in information search is higher for larger households than for smaller households.

Nonwhite main meal planners are less likely to use nutritional information concerning fat content on food packages than white main meal planners. The influence of a main meal planner's gender on use of nutritional information is statistically significant in all nine equations. Specifically, males are less likely to use all nine types of nutritional information on food packages than are females. This result may be related to Nayga's finding that men are less likely to perceive nutrition as important in food shopping than are women. In addition, it has been found that men's average fat/cholesterol intake is higher than women's (Frazao and Cleveland; Nayga and Capps). This result supports the hypothesis that men are typically less interested in diet and health issues than are women. Guthrie et al. also noted that females may be more likely to use nutritional labels because gender roles encourage them to place more importance on food selection.

Employed main meal planners are also less likely to use nutritional information concerning sodium content than their unemployed counterparts. The reason for this result is not clear. However, it is possible that many employed main meal planners are too busy and

Table 3. Maximum Likelihood Estimates of the Variables

Variable	*INGRED*	*HEALTH*	*CALOR*	*SODIUM*	*VITMIN*	*FIBER*	*FAT*	*CHOL*	*SUGAR*
HHSZ	0.044	0.016	0.032	0.028	0.072*	0.006	0.016	0.020	0.063*
	(0.039)	(0.038)	(0.038)	(0.038)	(0.038)	(0.037)	(0.039)	(0.038)	(0.038)
BLACK	−0.158	0.016	−0.072	−0.049	0.087	−0.134	−0.360*	−0.205	−0.066
	(0.156)	(0.154)	(0.154)	(0.154)	(0.155)	(0.154)	(0.156)	(0.156)	(0.154)
OTHER	−0.133	−0.032	0.132	−0.360	−0.043	−0.120	−0.538*	−0.312	0.044
	(0.259)	(0.256)	(0.256)	(0.256)	(0.256)	(0.255)	(0.258)	(0.256)	(0.257)
MALE	−0.486*	−0.368*	−0.515*	−0.355*	−0.243*	−0.222*	−0.423*	−0.366*	−0.342*
	(0.128)	(0.126)	(0.126)	(0.126)	(0.126)	(0.126)	(0.129)	(0.127)	(0.126)
EMPLOYED	0.032	−0.033	0.085	−0.203*	0.033	−0.057	0.038	−0.078	−0.118
	(0.119)	(0.117)	(0.117)	(0.117)	(0.116)	(0.116)	(0.120)	(0.118)	(0.117)
CITY	−0.036	−0.208	−0.109	−0.032	−0.054	−0.220*	−0.209	−0.039	−0.130
	(0.130)	(0.128)	(0.128)	(0.128)	(0.128)	(0.127)	(0.131)	(0.130)	(0.128)
NONMETRO	0.266*	0.052	0.002	0.272*	0.283*	0.288*	0.135	0.121	0.187
	(0.124)	(0.121)	(0.120)	(0.121)	(0.120)	(0.120)	(0.125)	(0.123)	(0.121)
AGE	0.020	0.033*	0.004	0.021	−0.0009	0.024	0.038*	0.036*	0.018
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
AGESQ	−0.0001	−0.0003	−0.00004	−0.0001	−5.3E-6	−0.0001	−0.0001	−0.00002	−0.0001
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
INCOME	0.000007	0.000003	0.000011*	1.3E-5*	2.4E-6	8.7E-6*	0.00001*	8.9E-6*	4.0E-6
	(4.7E-6)	(4.7E-6)	(4.7E-6)	(4.6E-6)	(4.6E-6)	(4.6E-6)	(4.9E-6)	(4.7E-6)	(4.6E-6)
INCOMESQ	−3.8E-11	−1.8E-11	−2.4E-11	−5.6E-11	−3.8E-11	−4.0E-11	4.5E-11	−3.8E-11	−1.6E-11
	(2.9E-11)	(2.9E-11)	(3.2E-11)	(9.1E-11)	(2.9E-11)	(3.0E-11)	(3.1E-11)	(3.0E-11)	(2.9E-11)
COLLEGE	0.643*	0.336*	0.296*	0.379*	0.298*	0.356*	0.443*	0.310*	0.426*
	(0.123)	(0.119)	(0.119)	(0.119)	(0.118)	(0.118)	(0.123)	(0.121)	(0.119)
GRAD	0.972*	0.653*	0.597*	0.487*	0.466*	0.364	0.931*	0.681*	0.690*
	(0.242)	(0.228)	(0.231)	(0.229)	(0.225)	(0.223)	(0.254)	(0.239)	(0.229)
NE	0.037	0.247*	0.052	0.266*	−0.011	−0.110	−0.174	−0.066	0.063
	(0.148)	(0.145)	(0.145)	(0.145)	(0.145)	(0.144)	(0.148)	(0.147)	(0.145)
MW	0.029	0.283*	−0.013	0.141	−0.075	−0.074	0.018	−0.007	0.060
	(0.131)	(0.129)	(0.128)	(0.128)	(0.128)	(0.128)	(0.132)	(0.131)	(0.128)

Table 3. (Continued)

Variable	*INGRED*	*HEALTH*	*CALOR*	*SODIUM*	*VITMIN*	*FIBER*	*FAT*	*CHOL*	*SUGAR*
WEST	−0.108	−0.060	−0.106	0.120	−0.194	−0.098	0.014	−0.169	0.049
	(0.142)	(0.139)	(0.139)	(0.139)	(0.139)	(0.139)	(0.144)	(0.141)	(0.140)
SAFETY	−0.013	0.128*	−0.007	−0.044	0.041	0.013	0.028	0.056	−0.044
	(0.054)	(0.053)	(0.053)	(0.054)	(0.054)	(0.054)	(0.055)	(0.054)	(0.054)
NUTRITION	0.507*	0.421*	0.413*	0.495*	0.512*	0.485*	0.514*	0.451*	0.476*
	(0.057)	(0.056)	(0.056)	(0.058)	(0.057)	(0.058)	(0.058)	(0.057)	(0.057)
PRICE	−0.011	−0.019	−0.015	0.005	−0.027	−0.052	−0.058	−0.044	0.059
	(0.044)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.044)	(0.044)	(0.043)
TASTE	−0.128*	−0.214*	−0.168*	−0.158*	−0.186*	−0.200*	−0.125*	−0.080	−0.152*
	(0.068)	(0.067)	(0.067)	(0.067)	(0.067)	(0.067)	(0.069)	(0.068)	(0.067)
DISEASE	0.040	0.058	0.048	0.049	0.037	0.076*	0.064*	0.060	0.075*
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.037)	(0.037)	(0.036)
HLTHDIET	−0.155*	−0.066	0.003	−0.115*	−0.133*	−0.134*	−0.218*	−0.179*	−0.098*
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.050)	(0.049)	(0.048)
McFadden R^2	0.061	0.042	0.037	0.048	0.044	0.049	0.071	0.055	0.045
Chi-Square	205.49	153.97	138.54	178.69	164.20	180.64	244.58	196.78	163.31
P (22 df)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Notes: Sample size = 1,448. An asterisk (*) denotes statistical significance at the .05 level; numbers in parentheses are standard errors.

have generally less time to look at nutritional information regarding sodium when grocery shopping compared to unemployed main meal planners.

Results also indicate that main meal planners residing in nonmetro areas are more likely to use nutritional information concerning ingredients, sodium, vitamins/minerals, and fiber content on food packages than others in the suburban and urban areas. A possible reason for this result is the fact that individuals in nonmetro areas have a generally slower lifestyle and have more time to shop than do individuals in urban areas. Therefore, they are able to devote more time to examining nutritional information on food packages than others. A related finding also suggests that main meal planners residing in a city are less likely to use nutritional information concerning fiber than those residing in suburban areas.

Some of the regional variables are also significant factors in the equations. In particular, main meal planners in the Northeast are more likely to use nutritional information about health benefits and sodium content than main meal planners in the South. Further, main meal planners in the Midwest are more likely to use nutritional information regarding health benefits than main meal planners in the South.

The older a main meal planner is, the more likely he or she uses nutritional information about health benefits, fat, and cholesterol content on food packages. Income is also a significant factor in the calorie, sodium, fiber, fat, and cholesterol equations. In particular, main meal planners of higher-income households are more likely to use nutritional information concerning calories, sodium, fiber, fat, and cholesterol content than main meal planners of lower-income households.

Education is an important factor affecting a main meal planner's likelihood of using nutritional information. In particular, main meal planners with either a college or graduate education are more likely to use nutritional information concerning all nine types of content on food packages than main meal planners who are less than college educated. It may be that higher-educated main meal planners are more aware of the relationship between diet and health, and so are more motivated to use nutritional labels. In addition, the higher education level may aid them in interpreting label information, thereby decreasing the cost of information search relative to its benefits (Guthrie et al.).

Main meal planners who place more importance on product safety are more likely to use information concerning health benefits than others. As expected, main meal planners who place more importance on nutrition are more likely to use nutritional information on all nine types of content than others. Interestingly, however, those who place more importance on taste are less likely to use nutritional information on all types of content with the exception of cholesterol. It is possible that label information is considered irrelevant by taste-oriented main meal planners.

The diet-disease belief variable (*DISEASE*) is positive and significant in the fiber, fat, and sugar equations. This result suggests that main meal planners who hold a stronger belief that discernment in what is consumed can help to reduce the risk of developing a major health disorder—such as heart disease and cancer—are more likely to use nutritional information related to fiber, fat, and sugar content on food packages. This finding is important and should be of particular value to health and nutrition educators since it implies that public education directed at increasing the awareness of some diet-disease relationships may encourage some consumers to become label users. As expected, main meal planners who have a higher perception of the healthfulness of their diet are more likely to use nutritional information on all types of content on food packages with the exception of health benefits and calories. This result is significant because those who have a lower perception of the healthfulness of their diet are generally the individuals who need to be educated about the usefulness of nutritional labels in improving their diet and health.

The McFadden R^2 values (goodness-of-fit measures) shown in table 3 range from 0.037 for the calories equation to 0.071 for the fat equation. These values are reasonable and are expected considering the type of data (cross-sectional survey of individuals) used in the

analysis. Another indicator of goodness of fit for the equations is the chi-square statistics. The chi-square statistics for the equations are significant at the 0.0001 level (table 3). No degrading multicollinearity problems were detected based on the collinearity diagnostic tests conducted (as set forth by Belsley, Kuh, and Welsh).

Concluding Comments

Intervention programs aimed at increasing nutrition knowledge or awareness, such as supermarket point-of-purchase programs, seem to have had limited impact over the years (Rodgers et al.). The effectiveness of these programs (e.g., the NLEA) may depend upon whether or not consumers use nutrition information on food packages when food shopping. This study examines how sociodemographic characteristics of a household's main meal planner affect the use of nine types of nutritional information on food packages. Based on known published research, this study constitutes a precedent for the analysis of consumers' use of different types of nutritional information on food packages. Results generally suggest that older, well-educated, female main meal planners of larger and higher-income households located in nonmetro areas are more likely to use some types of nutritional information on food packages than other main meal planners.

The results of this study have some important implications for government education and public nutrition programs. The findings could be used as a guide in directing government education programs toward specific population subgroups. For example, nutrition information on food packages may receive less attention from younger, less-educated male main meal planners. This finding is particularly relevant given that more men are currently involved with meal planning or preparation due to the increasing labor force participation rate of women. Therefore, those who are less likely to use nutritional information on food packages may subject themselves and household members to unnecessary health risks if they purchase and consume foods with undesirable nutritional content. Hence, public health education programs should be targeted toward these individuals.

Results of this study may also be used as a guide in the design of food marketing programs. For instance, foods with better nutritional content may be more valued by well-educated female main meal planners than others. Therefore, advertising and promotion campaigns may be directed at these individuals.

This study provides important information on the types of individuals who are more likely to use nutritional information on food packages. Future studies should consider analyzing the impact of label use on individuals' diet quality. The 1989–91 and the 1994–96 "Continuing Survey of Food Intakes by Individuals" (CSFII) by the U.S. Department of Agriculture contain information on diet or nutrient consumption. These data will allow the determination and analysis not only of label users, but also the impact of label use on diet quality.

In addition, future studies should consider augmenting the model with another set of equations that explains some of the perception variables (i.e., taste and nutrition variables) to determine if systematic differences exist in the socioeconomic determinants of preferences for these variables. It is possible that the effect of some socioeconomic variables on label use is indirectly operating through the perception variables. (The author is currently conducting further analysis on this topic using the 1991 and 1994 DHKS.)

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