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Consumer Evaluation of the Desirability of Four Types of Information on Food Labels

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Food labels are a major source from which consumers obtain information about food products. Earlier studies found that consumers tend to trust information on food labels more than they do information from other sources, such as advertisements (Mazis and Raymond 1997). Efforts have been made to transfer needed information to consumers to help them maintain a healthy diet and handle food products properly. USDA has estimated that dissemination of needed information through food labels could save billions of dollars in medical-care costs (Kim, Nayga, and Capps 2000). Because the realization of such benefits is contingent upon consumers' interest in and actual use of the information, food labels should provide correct and useful messages desired by consumers . It is therefore necessary to gain insights about consumers' demand for various kinds of information to construct an informative food label.

This study examines the desirability of four major categories of food information: nutrition information, ingredient information, health-claim information, and information on chemicals used in food production and processing and their potential health effects. The first three categories of information are required to be provided on food labels in the United States for many kinds of food products, while the last category of information was suggested recently by some researchers and policy makers to be included on food labels. Factors affecting consumers' ranking of the desirability of these four categories of information were investigated using data from a food-consumption survey.

Data and Model

The data were from a nationwide telephone survey of household food consumption. Respondents were asked questions in several broad sections including food-consumption experience, ranking of desirability of the four categories of information, and a set of questions regarding consumer demographic and economics status. Results showed that all four categories of information were highly desirable. On a measurement scale where 1 represented "not important at all" and 3 represented "very important," the mean values of the degree of desirability were 2.76, 2.79, 2.48, and 2.76 for nutrition information, ingredient information, health-claim information, and chemicals-use information, respectively. It is interesting to notice that the ranking of the desirability of the recently proposed information on chemicals use is higher than that of health-claim information.

Economic models were developed for empirical analyses of factors affecting desirability ranking. Given the ordered nature of the dependent variables, ordered probit models were appropriate for the data. Table 1 presents detailed description of the independent variables.

Results

Table 2 presents the results from the estimation of the desirability ranking of the four types of information. The results show that senior respondents tend to give a lower importance ranking to all the four types of information. Generally, senior people pay more attention to health and nutrition issues due to their declining health condition. A typical example is that senior people are more likely to suffer coronary heart diseases, which are often closely related to cholesterol intake. Hence they are expected to give a higher ranking to the desirability of health and nutrition information. A plausible explanation for the negative age effects is that senior people have accumulated more information over time than have younger people, so they do not need as much information from food labels as do younger people.

Females tend to give a higher importance rank-

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Table 1. Definitions and Descriptive Statistics of the Explanatory Variables.

Variable	Description	Mean
Young	1 = if respondent's age is between 17 and 40; 0 otherwise	0.34
Senior	1 = if respondent is 60 years old or older; 0 otherwise	0.28
Female	1 = female; 0 = male	0.69
White	1 = white; 0 otherwise	0.80
College	1 = having college education; 0 otherwise	0.30
Fullemp	1 = full employment; 0 otherwise	0.44
City	1 = if respondent lives in a city or urban area; 0 otherwise	0.26
Meatsick	1 = having experience of being sick from meat consumption in the past 12 months; 0 otherwise	0.08

ing to all four types of information. Acquisition of information from food labels is usually made by food shoppers, and food shopping is generally done by main meal planners. In the United States, the main meal planners are mostly females. The gender effects may be due to the difference between males and females as main meal planners.

Whites tend to give a lower importance ranking to nutritional information, health-claim information, and chemicals-use information. Previous studies found that in the United States, whites read newspapers and magazines more than did people of other races. It could be that they acquire more food information from other sources than do people of other races.

Full employment negatively affected the importance ranking for nutritional information, ingredients information, and chemicals-use information. Within a household, the task of meal preparation is often assigned according to opportunity costs. The opportunity cost is greater for a fully employed family member than for an unemployed member. Therefore, a fully employed member of a household is less likely to be responsible for meal preparation and groceries shopping. Since food information is mainly used in the decision of food purchasing and meal preparation, it is understandable that a respondent who is neither a main food shopper nor a meal planner tends to give a lower ranking to the desirability of food information.

Sickness due to food consumption enhances consumers' awareness of the potential health risk related to what they eat. This motivates them to seek relevant information from food labels to avoid or reduce such risk. Understandably, those who have become sick from meat consumption tend to give a higher ranking to the importance of health-claim information.

Conclusion

Benefits of dissemination of information through food labels depends upon consumers' interest in and actual use of the information. The results of this study shed light on the factors influencing consumer demand for various types of information on food labels. The results from this study can be used for developing label education messages and materials. Specifically, knowledge of the relationship between consumers' characteristics and their desire for a particular kind of information is useful in the design and implementation of diet-health information programs. The insights gained about demographic effects can be used to tailor health interventions and marketing campaigns to specific population subgroups. Moreover, this study confirms that it is necessary to include information on chemicals use in food production and processing for food labels to be more informative.

References

Kim, S. Y., R. M. Nayga, and O. Capps. 2000. "The Effect of Food Label Use on Nutrient Intakes: an Endogenous Switching Regression Analysis." *Journal of Agricultural and Resource Economics* 25:215-231.

Mazis, M. B. and M. A. Raymond. 1997. "Consumer Perceptions of Health Claims in Advertisements and on Food Labels." *Journal of Consumer Affairs* 31:10-26.

Table 2. Results from the Estimation of the Importance Ranking of the Four Types of Information.

	Nutrition Information		Ingredient Information		Health Information		Chemicals-Use Information	
	Parameter Estimate	T-ratio	Parameter Estimate	T-ratio	Parameter Estimate	T-ratio	Parameter Estimate	T-ratio
Constant	2.0297	9.84***	1.8079	8.27***	1.4775	8.69***	2.1335	9.37***
Young	-0.0532	-0.40	-0.1564	-1.16	0.1387	1.23	-0.4534	-2.81***
Senior	-0.3276	-2.02**	-0.3806	-2.41**	-0.3478	-2.65***	-0.4534	-2.71***
Female	0.4099	3.49***	0.4837	3.94***	0.3321	3.29***	0.4502	3.68***
White	-0.4029	-2.64***	-0.0594	0.40	-0.3323	-2.66***	-0.3935	-2.50**
College	0.0782	0.64	0.1064	0.83	-0.5542	-5.42***	-0.1548	-1.26
Fullemp	-0.2928	-2.18**	-0.2889	-2.29**	-0.0714	-0.65	-0.2319	-1.76**
City	-0.1151	-0.98	0.0289	0.24	-0.1894	-1.98**	-0.1896	-1.61
Meatsick	-0.1093	-0.54	0.2269	0.95	0.3138	1.72*	0.3584	1.46

* significant at 0.1 level.
** significant at 0.05 level.
*** significant at 0.01 level.