An Analysis of Nutritional Label Use in the Southern United States

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Results from a random telephone survey of 1,421 grocery shoppers in the South suggest that 80 percent of them used food labels when making food purchasing decisions. Overall, shoppers used the information on fat content more frequently than any other labeling information. Label and attribute use were found to be statistically significantly associated with age, educational level, gender, household composition, household income, marital status, and race.

Introduction

Passed in 1990, the Nutrition Labeling and Education Act (NLEA) mandated that nutrition labels should be placed on most processed foods by mid 1994. The Act was an attempt to bring greater uniformity to the food labeling system and to give consumers easier access to nutrition information. At the time of the NLEA's passage, the Food and Drug Administration estimated that the implementation costs would range from $1.6 to $2.6 billion, but felt that the benefits ($4.5 billion) gained from lower medical costs and lost productivity due to diet-related illnesses far exceeded the costs. Since the introduction of the new food labels in 1994, per capita consumption of fat and calorie-rich foods, and the number of overweight and obese Americans have been increasing. Given these statistics, it is necessary to evaluate the effectiveness of food labels in disseminating nutrition information and in changing buying and eating habits.

Diet, health, and nutrition awareness are strongly linked to cultural, psychological, behavioral, socioeconomic, and geographical factors (Blisard, Blaylock, and Smallwood; Frazao, 1993,1994, 1995, and 1996; Lutz, Blaylock, and Smallwood; Shim, Variyam, and Blaylock; Tippet and Goldman; Variyam, Blaylock, and Smallwood, 1995 and 1997). Therefore, food labels will not be successful in changing eating habits and diet quality unless consumers incorporate the labeling information into their food purchases, and meal preparation. Given the time lag between a new product's introduction and full-scale adoption, researchers may not be able to accurately measure its market success in a short time period. Fortunately, this is not the case with the new food labels. They were introduced more than six years ago; therefore, researchers can now collect data on their use and effectiveness in changing food purchasing and eating decisions.

Because of the regional differences in eating habits in the United States, smaller regional studies are sometimes needed to capture subtle differences in food consumption patterns. Consequently, this study examines the extent to which consumers use food labels and labeling information when they make food purchases. The specific objectives are to determine (1) the percentage of consumers who are using labels when making their food purchasing decisions, (2) the labeling attributes used most frequently in these decisions, and (3) the extent to which socioeconomic and geographic factors are associated with label and attribute use.

Data and Procedure

The study's data were compiled from a random telephone survey of 1,421 primary grocery shoppers and/or meal preparers in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia during August 1998. The interviewers asked respondents whether they used labels when making their food purchasing decisions and, if so, what labeling attributes they used most frequently in making these decisions. In addition to these responses, the interviewers also collected data on respondents' socioeconomic characteristics (age, education, gender, marital status, household size, household composition, household income, race, religion, employment status, and food stamp participation). The study uses the chi-square contingency test to determine whether label and attribute use are independent of respondents' socioeconomic characteristics (age, education, employment status, gender, household composition, household income, household size, marital status, and race), and geographic location.

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Descriptive Statistics

From table 1, 43 percent of the respondents were between 36 and 55 years of age; sixty-four percent had no college diplomas; fifty percent had a full-time job; eighty percent were women; fifty-three percent of the households had children; forty-five percent of the households had incomes below $35,000; eighty-four percent lived in multiple-person households; sixty percent were married; eighty percent were Caucasians; and forty-five of the respondents lived in the South Atlantic Region of the United States (Florida, Georgia, North Carolina, South Carolina, and Virginia).

Table 1. Household Characteristics of Survey Respondents.

Socioeconomic Characteristics	Percentages
AGE (Years)	
18-35	29
36-55	43
> 55	28
EDUCATION	
< College	64
College	36
EMPLOYMENT STATUS	
Part-Time Employment	50
Full-Time Employment	50
GENDER	
Men	28
Women	80
HOUSEHOLD COMPOSITION	
No Children	47
Children 18	53
HOUSEHOLD INCOME	
< $35,000	45
$35,000-$74,999	41
> $75,000	14
HOUSEHOLD SIZE	
One Member	16
> One	84
MARITAL STATUS	
Unmarried	40
Married	60
RACE	
African Americans	14
Other Races	6
Caucasians	80
GEOGRAPHIC AREA	
East South Central Region	20
West South Central	35
South Atlantic Region	45

Table 2 shows the levels of label use and the labeling attributes used mostly frequently by respondents. Based on these results, 80 percent of the respondents used labels in making their shopping decisions. Among the most frequently used attributes were calories (11 percent), fat (29 percent), list of ingredients (7) percent, sodium (6 percent), protein (2 percent), serving size (3 percent), vitamins (2 percent), expiration dates (3 percent), price (4 percent), brand (5 percent), nothing in particular (28 percent). For the chi-square analysis, protein, serving size, vitamins, expiration dates, price, brand, and nothing in particular were classified into a new category: other.

Table 2. Use of Nutrition Facts Labels and Labeling Attributes.

Response Categories	Percentages
LABELS	
Users	80
Non-Users	20
ATTRIBUTES	
Calories	11
Fat	29
List of Ingredients	7
Sodium	6
Protein	2
Serving Size	3
Vitamins	2
Expiration Dates	3
Price	4
Brand	5
Nothing in Particular	28

Empirical Results

The relationships between label use and the selected socioeconomic characteristics are shown in table 3. The results suggest that there are statistically significant associations between label use and household characteristics. Specifically, label use is significantly associated with education, gender, household income, and marital status, but is invariant to age, employment status, household composition and size, race, and geographic location. Households with college-educated food shoppers and/or meal preparers are more likely to use labels than their lesser-educated counterparts. Women are more likely to be label users than men are. Respondents with household income levels of at least $35,000 and married consumers are more likely to be label users than are lower-income households and unmarried consumers.

Table 3. Label Use by Socioeconomic Characteristics.

Variable	Non-Label Users	Label Users	χ^2	P-Value
		Percentages		
TOTAL	20	80		
AGE				
18-35 Years	22	78		
36-55	18	82		
> 55	20	80	3.60	0.1655
EDUCATION				
< College	23	77		
College	15	85	13.24***[a]	0.0003
EMPLOYMENT STATUS				
Part-Time	20	80		
Full-Time	20	80	0.003	0.9591
GENDER				
Men	23	77		
Women	18	82	4.25**	0.0393
HOUSEHOLD COMPOSITION				
No Children	20	80		
Children ≤ 18	20	80	0.01	0.9309
HOUSEHOLD INCOME				
< $35,000	23	77		
≥ $35,000	17	83	7.90***	0.0050
HOUSEHOLD SIZE				
One Member	20	80		
> One	9	81	0.02	0.8818
MARITAL STATUS				
Unmarried	22	78		
Married	18	82	4.22**	0.0399
RACE				
Non-whites	22	78		
Whites	19	81	0.88	0.3473
GEOGRAPHIC AREA				
South Atlantic	20	80		
Other	19	81	0.14	0.7119

[a] (**) and (***) indicate statistical significance at the 0.05 and 0.01 levels, respectively.

Table 4. Labeling Attributes by Socioeconomic Characteristics.

Variable	Other	Calories	Fat	List of Ingredients	Sodium	χ^2	P-Value
			Percentages[a]				
TOTAL	47	11	29	7	6		
AGE							
18-35 Years	50	11	29	8	2		
36-55	45	9	31	8	7		
>55	49	14	23	6	9	28.76***[b]	0.0004
EDUCATION							
< College	51	9	25	8	7		
College	40	13	35	7	5	25.82***	0.0003
EMPLOYMENT STATUS							
Part-Time	49	12	27	7	6		
Full-Time	46	10	31	7	6	3.57	0.4676
GENDER							
Men	55	10	2	8	4		
Women	44	11	31	7	7	18.05***	0.0012
HOUSEHOLD COMPOSITION							
No Children	48	12	28	5	7		
Children ≤ 18	47	9	29	10	5	18.12***	0.0011
HOUSEHOLD INCOME							
< $35,000	53	10	22	8	7		
≥ $35,000	43	11	34	6	5	32.18***	0.0000
HOUSEHOLD SIZE							
One Member	53	12	25	5	6		
> One	47	10	29	8	6	4.53	0.3389
MARITAL STATUS							
Unmarried	51	11	26	7	5		
Married	45	10	31	8	6	7.87*	0.0964
RACE							
Non-whites	57	12	16	7	7	29.34***	0.0001
Whites	45	10	32	7	6		
GEOGRAPHIC AREA							
South Atlantic	47	11	29	7	7		
Other	48	11	28	8	5	1.85	0.7632

[a]Percentages may not sum to 100 because of rounding.

[b](*), (**), and (***) indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

Table 4 shows the cross tabulations of labeling attributes with the selected socioeconomic characteristics. From the table, respondents' age, educational levels, gender, household composition, household income levels, marital status, and race affect their attribute selections in making food purchase decisions. Older consumers are more likely to examine the sodium content of food products when making purchasing decisions; those between 18 and 35 years of age are more likely not to pay much attention to the nutritional attributes on food labels. College-educated consumers show more concerns about the fat content of food products than non-college graduates. The results also suggest that women, households with children 18 years old and under, households with incomes in excess of $35,000, married consumers, and Caucasians are more likely to use labels to determine the fat content of foods than their corresponding counterparts. Younger respondents, those without a college diploma, men, those without children and living in households with income levels below $35,000, unmarried consumers, and nonwhites are more likely to use attributes besides calories, fat, list of ingredients, and sodium when making their food purchasing decisions. Overall, when purchasing food products, consumers read the information on fat content more frequently than any other single attribute.

Concluding Remarks

The study's primary goal was to examine whether consumers in the Southern United States were using the Nutritional Facts labels to make healthier food choices. The specific objectives were to determine (1) the percentage of consumers who were using labels when making their food purchasing decisions, (2) the labeling attributes used most frequently in these decisions, and (3) the extent to which socioeconomic and geographic factors were associated with label and attribute use. From the results, 80 percent of the respondents reported using food labels. In general, label users assessed the fat content of the foods they purchased more than other nutritional attribute, such as calories, list of ingredients, and sodium content. Respondents also used attributes such as serving size, price, and brands in making their food purchasing decisions. Twenty-eight percent of users said they did not use any particular labeling attribute when making their decisions.

Nutrition Facts labels were introduced on most processed food products since mid 1994. Yet, statistics continue to show that per capita consumption of fat and calorie-rich foods, and the number of overweight and obese Americans is rising (Kantor; Lin, Guthrie, and Frazao). The study's results suggest that some consumers are assessing the fat content of the foods they buy for at-home consumption. However, because of the increased consumption of foods outside the home, consumers must continue to monitor their consumption of calories and fat in all the foods they buy.

References

Blisard, N., J. Blaylock, and D. Smallwood. 1994. *Dietary Fiber: Effects of Socioeconomic Characteristics and Knowledge.* TB-1840, Economic Research Service, U.S. Department of Agriculture. December.

Frazao, E. 1993. "Female-Headed Households Spend Less on Food." *FoodReview.* 16:6–11.

Frazao, E. 1994. *Consumer Concerns About Nutrition: Opportunities for the Food Sector.* AIB-705. Economic Research Service, U.S. Department of Agriculture. October.

Frazao, E. 1995. *The American Diet: Health and Economic Consequences.* AIB-711, Economic Research Service, U.S. Department of Agriculture. February.

Frazao, E. 1996. "The American Diet: A Costly Health Problem." *FoodReview.* 19,1:2–6.

Kantor, L. 1998. A *Dietary Assessment of the U.S. Food Supply: Comparing Per Capita Food Consumption with the Food Guide Pyramid Serving Recommendations.* AER 772, Economic Research Service, U.S. Department of Agriculture. December.

Lin, B-H., J. Guthrie, and E. Frazao. 1999. *Away-From-Home Foods Increasingly Important to Quality of American Diet.* AIB 749, Economic Research Service, U.S. Department of Agriculture. January.

Lutz, S. M. J.R. Blaylock, and D.M. Smallwood. 1993. "Household Characteristics Affect Food Choices." *Food Review.* 16,2 :12–17.

Shim, Y., J. N. Variyam, and J. Blaylock. 2000. "Many Americans Falsely Optimistic about Their Diets." *FoodReview.* 23,1:44–50.

Tippet, K.S. and J.D. Goldman. 1994. "Diets More Healthful, But Still Fall Short of Dietary Guidelines." *FoodReview.* 17, 1:8–14.

Variyam, J.N., J. Blaylock, and D. Smallwood. 1995. *Modeling Nutrient Intake: The Role of Dietary Information.* TB-1842, Economic Research Service, U.S. Department of Agriculture. May.

Variyam, J.N., J. Blaylock, and D. Smallwood. 1997. *Diet-Health Information and Nutrition: The Intake of Dietary Fats and Cholesterol.* TB-1865, Economic Research Service, U.S. Department of Agriculture. February.