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A Consumer Survey of Specialty Food Shoppers: Understanding of the National Organic Program and Willingness to Pay

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Abstract/Description:

This is a report of a survey of 102 customers of a central Ohio specialty/natural grocery store. The survey addressed customer awareness of the USDA National Organic Program, particularly for processed foods. Customer willingness to pay for alternative levels of organic content in breakfast cereals was also studied. Ninety-three percent of those surveyed reported purchases of organic foods, the majority purchasing at least weekly. Typical organic purchases include: produce; processed foods; meats, poultry and seafood; eggs and dairy products. Consumers indicated a willingness to pay higher prices for processed foods with organic content.

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We entered a new era in organic marketing with the final implementation of the much-anticipated National Organic Program (NOP) on October 21st, 2002. The rulemaking process that led to this new program was lengthy and complex, to say the least. Consumers were previously confronted with a diverse array of organic standards at the state, retailer, or product level - an organic claim meant something different in many environments. In an effort to resolve this confusion the U.S. Department of Agriculture formalized what it means to be organic, with products that meet the standard able to use the term organic. Products not meeting these criteria cannot be marketed as organic but may use terms like "natural".

There are four levels of the claim covered by the NOP: "100% organic", "Organic" (at least 95% organic), "Made with Organic Ingredients" (at least 70%) and "Some Organic Ingredients" (less than 70%, the organic items can be listed individually in the ingredients on the side panel). The first two categories can use the NOP seal on the front of the food package. Clearly these categories are most relevant to processed foods, as opposed to the most commonly purchased organic category – produce.

Our goal is to better understand the consequences of the NOP among a group of "adopters" – shoppers of a national specialty/natural grocery chain located in central Ohio. Our research focuses on changes in the labeling of organic food, and increased attention on nutrition and safety issues in the media. Using a consumer survey, we collected information regarding knowledge of organic labels, current organic purchase patterns, and the level of concern held by consumers regarding health, nutrition, food safety, impact on the local community, and environmental impacts of food production. An important dimension of this work is an evolving understanding of consumer willingness to pay for the continuum of processed organic products as described by the National Organic Program.

About the survey

A consumer survey was conducted in March, 2004. Customers of a central Ohio store of a national specialty/natural grocery chain were identified at random as they entered the premises. Customers were given a brief description of the survey process and goals of the research, informed that it would address organic foods, asked to participate, and, if agreeing were provided a copy of the survey along with a pre-paid return envelope. Two $25 gift certificates were awarded through a drawing of consumers responding to the survey. A total of 300 surveys were handed out, with 102 returned.

Demographics

Average age for all customers surveyed was just under 40 years (Table 1). Seventy nine percent of the study participants were female, and 84 percent identified themselves as the primary food shopper in their household. Average household size was 2.66. Nearly 33 percent of the households represented in the survey included children under 18 years of age. Probably due to its location near a large university, respondents were very well educated with more than a third having a Bachelor's and graduate or professional degree. Only 4 respondents were non-white. Mean household income in 2002 was $74,304. Median household income was $62,500.

A remarkable 93 percent of respondents reported purchasing organic food (Table 2). Most of these consumers reported making frequent purchases of organic food: over half purchased weekly or more frequently, implying that organic foods are a regular part of their food purchases. The most commonly purchased food types were produce, meat, poultry, and seafood. A high proportion of consumers also bought processed foods (e.g., cereals, snack food, and canned and frozen food), dairy products and eggs.

Consumers were asked to indicate their primary motive for purchasing organic foods, and to rank these by importance (Table 3). Pesticide-free was the primary motive; with 51 percent ranking this as the most important reason for purchasing organic foods. This is followed by nutrition, a desire to support environmentally-friendly agriculture, and finally a suggestion that organic foods taste better.

For the five consumers who stated they did not purchase organic foods the most important reason was that organic foods were priced too high: Other reasons, in order, included too little variety of choice in organic foods, inferior taste, poor appearance, perceived low nutrition, and finally concern about the safety of organic foods.

Consumers were asked to respond to the following statement: *If buying **processed foods** (e.g., breakfast cereals, canned or frozen foods, etc.) at this grocery store, rate the importance of the following characteristics when making your purchase decision.* These characteristics are identified in Table 4, along with consumer ratings of the importance of each. Taste/quality, as judged from past experience, was the most important characteristic. This was followed by product price and labeled as organic. Several health and nutrition concerns were important, including low cholesterol (5^{th}), low sodium (7^{th}) and low fat (8^{th}). Interestingly, brand and packaging were ranked lowest.

Willingness to pay for organic food content:

A major focus of this study was to estimate consumers' willingness to pay for processed, multi-ingredient organic food. This was estimated in two ways. The first approach, based on contingent valuation methods, allows a rigorous assessment of consumer choice between various levels of organic ingredients. At the beginning of the survey, unaffected by other "leading questions", consumers were presented the information in Figure 1. They were asked to consider the following situation: *Assume that you plan to purchase a breakfast cereal. The following four cereals are all the same size and made by the same company. They are all the same type of cereal, are identical in nutrition, and are all the same mix of ingredients. They differ only in the degree of organic content.* Each survey had one of four sets of prices for each of the cereal products and the consumer was asked to identify which product they would consume given these prices.

Figure 1. Four hypothetical cereal products were the basis for a willingness to purchase experiment.

100% Organic Cereal with all ingredients certified organic

Cereal with at least 95% (by volume) of its ingredients certified organic

Cereal with at least 70% (by volume) of its ingredients certified organic

Conventional Cereal: None of the ingredients are certified organic.

Approximately equal numbers of responses were received for each of the price schedules, as presented in Table 5 (only 96 usable responses are available for this analysis). In all cases, the conventional cereal was assigned a price of $3.00 per box. The premium attached to the other products rose with the organic content percentage. The lower panel of table 5 indicates the number of consumers who selected each of the four cereal products. For instance, under price regime 1, 3 of the 27 consumers receiving this set of prices selected the conventional cereal product while 22 selected the 100 percent organic cereal at a price of $4.00. Interestingly, as the

size of the organic premia increased in price regimes 2 and 3 we see movement away from 100% organic. However, under the most extreme price scheme (4), 12 of 29 respondents (41%) were willing to pay the highest ($2.20 per box) premium for 100% organic ingredients. **Although these results are very preliminary, this suggests that loyal organic consumers may not be highly sensitive to organic food prices.** Multivariate statistical analyses of willingness to pay for this breakfast cereal are included in a separate report (AAEA selected paper, also comparing this data to that collected at a traditional grocery store chain). This approach allows for the control of influences of household income and other demographic variables on the willingness to pay estimates.

The second approach sought to quantify consumers' willingness to pay for organic content relative to their willingness to pay for other food characteristics. They were asked: *Assuming breakfast cereal is priced at $3.00 per box at your local grocery store, how much more (if any) would you be willing to pay for each of the following characteristics?* The food characteristics and indicated willingness to pay are listed in Table 6. Consumers attributed the largest price premium to100 percent organic ingredients: On average, consumers were willing to pay 61.9 cents more per box for this attribute. This was closely followed by pesticide-free foods (59.6 cent premium), food grown locally (51 cents), and GMO free (44.5 cents). Looking at the NOP levels of organic content we see a declining premia for a lower share of organic ingredients; 95% (42.4 cents), 70-94.9% (25.4 cents) and less than 70% organic ingredients (11.7 cents).

Finally, Table 7 presents responses to a set of more general questions about food consumption issues. Strong signals included; a feeling that foods were safe but that organic foods are safer than conventional foods, that organic farming reduces environmental impacts, that organic production is better for society, that consumers are willing to pay more for locally grown foods (from within 50 miles). The impact of irradiation on food quality remains unclear with consumers fairly evenly divided pro and con.

Table 1. Characteristics of the customer and household

	Sample	Census [a]
Sample size	102	
Age (years)	39.8	
percent female	79.0	50.9
Percent primary food shopper	83.8	
Percent vegetarian or vegan	26.0	
Number in household	2.7	2.6
Percent of households with children:	32.7	
1-5 years old	13.3	
6-10 years old	13.3	
11-15 years old	10.2	
16-18 years old	6.1	
Education		Percent
Less than 12th grade	1.0	19.6
High school graduate (or equivalency)	6.0	28.6
Some college, no degree	17.0	21.0
Associate degree	5.0	6.3
Bachelor's degree	36.0	15.5
Graduate or Professional degree	35.0	8.9
Race		Percent
Black or African American	1.0	
American Indian or Alaska native	1.0	
Asian or Asian American	0.0	
Native Hawaiian or other Pacific Islander	0.0	
Hispanic / Latino	2.0	
White	96.0	
Marital Status		Percent
Now married	52.0	49.9
Living together	14.0	4.4
Never married	26.0	23.1
Divorced/Separated	6.0	12.7
Widowed	2.0	10.0
Total Household Income		Percent
Less than $10,000	5.2	9.5
$10,000-$14,999	0.0	6.3
$15,000-$24,999	11.3	12.9
$25,000-$34,999	6.2	12.8
$35,000-$49,999	14.4	16.6
$50,000-$74,999	21.7	19.4
$75,000-$99,999	20.6	10.2
$100,000-$124,999	5.2	5.2
$125,000-$149,999	6.2	2.5
$150,000-$174,999	6.2	2.2[b]
$175,000-$199,999	0.0	
$200,000-$224,999	1.0	2.4[c]
$225,000-$249,999	0.0	
$250,000 and over	2.1	
Mean Household Income	$74,304	
Median Household Income	$62,500	

a National statistics, 2000 U.S. Census.
b $150,000 - $199,999.
c $200,000 and over.

Table 2. Organic Purchases

	Percent
Customers who Buy Organic Foods	92.9
Age:	
45 or younger	94.3
Older than 45	91.1
Race:	
Non-white	100.0
White	91.7
Education level	
High school or less	85.7
Post high school education	93.5
Household income	
$64,000 or less	94.7
More than $64,000	90.0
Frequency of purchase	
Twice-Weekly	26.9
Weekly	38.7
Twice-Monthly	11.8
Monthly	15.1
Rarely	7.5
What types of organic food is purchased	
Produce	91.4
Meats, Poultry, Seafood	77.4
Processed Foods (cereal, etc.)	61.3
Dairy Products	61.3
Eggs	54.8
Other	19.1

Table 3. Motives for purchasing organic foods, ranked by importance

	Importance Rank				
	Most Important 1	2	3	Least Important 4	Mean*
	Percent				
Pesticide Free	7.41	23.46	18.52	50.62	3.12
Nutrition	12.50	23.75	33.75	30.00	2.81
Environmentally Friendly	25.00	32.50	28.75	13.75	2.31
Taste	54.32	19.75	18.52	7.41	1.79

* Mean is calculated using values of 1 for most important through 4 for least important. Hence, a low mean indicates the most important motive.

Table 4. Importance of selected characteristics for processed food purchase decision

	Importance Rating				
	Not Important	Somewhat Important	Important	Very Important	Mean Rating*
	Percent				
Taste/quality (from past experience)	0.99	3.96	31.68	63.37	2.57
Price	5.94	28.71	36.63	28.71	1.88
Labeled as organic	10.00	20.00	42.00	28.00	1.88
Ease of preparation	9.00	38.00	35.00	18.00	1.62
Low cholesterol	23.00	29.00	31.00	17.00	1.42
Labeled as natural	23.23	36.36	22.22	18.18	1.35
Low sodium	28.71	28.71	24.75	17.82	1.32
Low-fat	30.00	31.00	24.00	15.00	1.24
Low calorie	33.00	35.00	17.00	15.00	1.14
Labeled as *Heart-Smart*	44.00	25.00	16.00	15.00	1.02
Brand	38.61	39.60	14.85	6.93	0.90
Convenience of packaging	44.00	35.00	12.00	9.00	0.86

* Mean was calculated using values of 0 = not important, 1 = somewhat important, 2 = important, and 3 = very important.

Table 5. Number of customers selecting each of four cereal products under four price regimes

	Price Regime			
	1	2	3	4
	$ / box			
Conventional	$3.00	$3.00	$3.00	$3.00
At least 70% organic ingredients	3.70	3.79	3.89	4.07
At least 95% organic ingredients	3.95	4.20	4.35	4.74
100% organic ingredients	4.00	4.40	4.60	5.20
Number of consumers in each scheme	27	18	22	29
	Number of consumers selecting product			
Conventional	22	7	6	12
At least 70% organic ingredients	1	2	6	6
At least 95% organic ingredients	1	4	6	4
100% organic ingredients	3	5	4	6

Table 6. Willingness to pay a price premium for selected characteristics in breakfast cereal

	Cents per box							
Characteristic	None	1-9	10-24	25-49	50-74	75-99	> 100	Mean Premium*
	Percent							
100% Organic Ingredients	9.3	6.2	11.3	16.5	10.3	19.6	26.8	61.9
Pesticide Free	5.1	10.2	12.2	14.3	19.4	15.3	23.5	59.6
Locally Grown	14.4	13.4	11.3	12.4	16.5	9.3	22.7	51.0
Genetically Modified Free	28.3	12.0	8.7	12.0	7.6	8.7	22.8	44.5
At Least 95% Organic Ingredients	17.7	9.4	11.5	22.9	14.6	17.7	6.3	42.4
Enhanced Flavor	40.6	11.5	10.4	15.6	6.3	4.2	11.5	28.5
70-94.9% Organic Ingredients	26.0	13.5	20.8	19.8	14.6	4.2	1.0	25.4
Less than 70% Organic Ingredients	41.9	25.8	18.3	5.4	8.6	0.0	0.0	11.7

* Each premium category is valued at its midpoint. Responses > *100* are valued at 112.5 cents. None is valued at zero.

Table 7. Percentage of responses for selected questions on food characteristics

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean Rating*
			Percent			
The foods available at my local grocery are safe	3.92	10.78	20.59	56.86	7.84	**0.54**
Organic farming is less damaging to the environment than conventional farming	0.00	1.96	7.84	29.41	60.78	**1.49**
Processed organic foods (e.g., cereal) are more nutritious than conventionally produced processed foods	2.94	11.76	26.47	37.25	21.57	**0.63**
Organic foods are safer than conventionally grown foods	0.00	5.88	15.69	44.12	34.31	**1.07**
Organic foods taste better than conventionally produced foods	0.98	9.80	25.49	34.31	29.41	**0.81**
Organic production is better for society than conventional production	0.00	3.96	15.84	34.65	45.54	**1.22**
Organic foods typically are too expensive	2.94	19.61	7.84	47.06	22.55	**0.67**
It is important that fruits and vegetables are attractive and free of blemishes	7.00	22.00	27.00	34.00	10.00	**0.18**
I am willing to pay more to consume organically produced foods	0.00	4.90	18.63	55.88	20.59	**0.92**
I am willing to pay more to consume locally grown foods	1.96	12.75	16.67	50.00	18.63	**0.71**
I am willing to pay more to consume foods that are certified to be free of genetic modification	2.97	16.83	26.73	34.65	18.81	**0.50**
Food is not as safe as it was 10 years ago	3.92	26.47	45.10	10.78	13.73	**0.04**
I am willing to purchase irradiated food products (treated with ionizing radiation to kill harmful bacteria).	20.59	12.75	47.06	15.69	3.92	**-0.30**
Irradiated foods are safe for consumers	14.71	12.75	48.04	18.63	5.88	**-0.12**
Irradiation of foods lessens its quality	1.98	9.90	61.39	14.85	11.88	**0.25**
I am more likely to purchase food I know is grown locally (within 50 miles)	1.98	15.84	15.84	47.52	18.81	**0.65**
Biotechnology is having a negative impact on the safety of our food supply	3.96	16.83	43.56	18.81	16.83	**0.28**
Pesticides pose a health threat to consumers of fruits and vegetables	0.00	1.96	13.73	43.14	41.18	**1.24**
Pesticides pose a health threat to consumers of processed foods (cereals, canned and frozen foods)	0.98	4.90	23.53	37.25	33.33	**0.97**
The use of fertilizers poses a health threat to consumers of fruits and vegetables	1.96	7.84	39.22	33.33	17.65	**0.57**
The use of fertilizers poses a health threat to consumers of processed foods (cereals, canned and frozen foods)	1.96	8.82	45.10	26.47	17.65	**0.49**

*** Mean was calculated using values of -2 = strongly disagree, 0 = undecided, and 2 = strongly agree.**