



R | S | G INC.
RESOURCE SYSTEMS GROUP, INC.

Documentation for
**“FAIR TRADE” MILK MARKET
RESEARCH STUDY**

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Prepared for
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EXECUTIVE SUMMARY

This report documents the results of the stated preference survey of 2,947 respondents conducted as part of the “Fair Trade” Milk Market Research carried out by Resource Systems Group, Inc. for the Vermont Agency of Agriculture, Food and Markets.

The purpose of the stated preference survey was to obtain detailed information that could be used to determine the market potential of “Fair Trade” milk. The concept of “Fair Trade” milk is to sell milk at a price that compensates farmers with revenues that, at the minimum, would cover the cost of producing the milk and guarantee a stable, predictable payment to farmers. This research defined target consumer segments, optimal distribution channels, key competitors, and optimal product labeling attributes and estimated consumer price sensitivity.

WHO WILL BUY “FAIR TRADE” MILK?

The target market segments identified by this research are the “Social Stewards” and the “Idealists”. These segments reside throughout the study region, but are found in higher proportions in Vermont, Boston, Connecticut, and Rhode Island. Most are buying a ½ gallon to a gallon of milk a week and both segments value milk free of artificial growth hormones. The Idealists usually buy organic milk, but are likely to switch to non-organic “Fair Trade” milk if it is available and free of artificial growth hormones. Both segments currently buy local products frequently and consider buying local to be very important. They place strong value on milk that is produced in their state or in the Northeast. Almost two-thirds of the Social Stewards and about half of the Idealists indicated they would buy “Fair Trade” milk every time they shop for milk. Both groups are also interested in other “Fair Trade” dairy products.

WHERE ARE TARGET SEGMENTS SHOPPING?

About 60% of the Social Stewards and the Idealists usually buy milk at conventional supermarkets, and 16% of Social Stewards and 9% of Idealists shop at convenience stores or gas stations. Idealists are more likely to shop at natural products stores (8%) and co-ops or independent grocery stores (7%) than other segments.

OPTIMAL PRICE POINTS

To maximize the extra revenue available to pass back to dairy farmers, sales volume estimates show that the ideal pricing point is 30 cents to 60 cents per gallon more than a comparable non-“Fair Trade” milk.

When asked about pricing “Fair Trade” milk, most respondents (including target segments) wanted a “price that ensures that the farmers make a 5% profit.”

KEY COMPETITORS

Key competitors for a new “Fair Trade” milk are brands of milk that are sourced locally (i.e., come from farms in the state where the milk is sold, or from the Northeast) and that are free of artificial growth hormones.



WHAT DO THE TARGET SEGMENTS CARE ABOUT ON THE LABEL?

The most popular descriptor for “Fair Trade” milk is “By purchasing ‘Fair Trade’ milk, you are helping support dairy farms in your region.” When asked about information that should be included on the label of “Fair Trade” milk, almost two-thirds (61%) of the target segments rated “a stamp indicating that the product is certified as ‘Fair Trade’” as extremely important, almost half (48%) selected “the name of the state where the milk was produced” and about a third selected “names of the farms where the milk is produced” as extremely important.

VERMONT AND MASSACHUSETTS: PROMISING PILOT MARKETS

Survey data indicate that Vermont and Massachusetts, particularly the Boston area of Massachusetts, would be good markets to pilot a “Fair Trade” milk product. A quarter of Vermont and Boston area respondents were in the two main target segments: 19% Social Stewards and 5% Idealists in Vermont and 18% Social Stewards and 7% Idealists in the Boston area.

An additional 30% of Vermonters and 28% of Boston area residents were classified as “Thrifty Opportunists,” who would be likely to buy a “Fair Trade” milk if it is priced only slightly higher than their current milk. Vermont had the highest incidence (6%) of “Organic Diehards,” a segment who would consider purchasing “Fair Trade” milk if it was organic.

OTHER MARKETING CONSIDERATIONS

“Domestic fair trade” is a new concept to purchasers, and many people are not familiar with fair trade at all. Education campaigns will help increase the potential market for “Fair Trade” milk. This study used a split sample design to test the effect of education on consumer preference for “Fair Trade” milk. For respondents who were given information about how milk is priced and the reasoning behind developing a “Fair Trade” milk product, the value they placed on the “Fair Trade” attribute doubled for most segments.



BACKGROUND

Dairy farming is an important part of Vermont’s economy, culture, and aesthetic identity.

In 2005 there were 1,259 dairy farms operating in Vermont, with 143,000 cows producing 2,520 billion pounds of milk. In that same year receipts for Vermont dairy products totaled \$420 million, comprising nearly 75% of the state’s total farm receipts. The Vermont dairy industry provides more than 11,000 jobs for farm workers, input suppliers, milk haulers, processors, marketers, and farm service firms and agencies.

From a cultural and aesthetic perspective, dairy farming contributes to Vermont’s identity. Dairy farms influence the look and feel of the landscape and contribute to the quality of life for Vermont residents. The state has a strong reputation for dairy products (e.g., Ben & Jerry’s ice cream, Cabot cheese). Additionally, having farms and local food products in Vermont communities fosters a connection to the land, appreciation of place, and heightened awareness of the natural environment.

Over the last decade, dairy farming in Vermont and in the Northeast has been on the decline. Increasing production costs and volatile milk prices have made it difficult to sustain dairy farms. Additionally, due to the large capital investment needed to establish a farm, there is a lack of replacements for retiring farmers.

It is clear that a new model is needed to make dairy farming a sustainable business for current and future farmers.

In response to difficulties faced by the dairy industry in Vermont and other Northeastern states, the Vermont Agency of Agriculture, Food and Markets (the Agency), working with key industry stakeholders, commissioned this study to evaluate the market for “Fair Trade” milk. Sales of “Fair Trade” milk would compensate farmers with a price that, at the minimum, would cover the cost of producing the milk and guarantee a stable, predictable payment to farmers. The idea of “Fair Trade” milk is modeled on the Fair Trade Certified™ program, which was created to guarantee producers in developing countries fair prices when selling their products to developed countries.

In the early phases of this research, prior to conducting the stated preference survey, Resource Systems Group, Inc. (RSG) completed a literature review and conducted focus groups in White River Junction, VT and in Boston, MA. Reports for these initial two phases of the project, which helped to inform the design of the stated preference survey, are included in Appendices F and G.

INTRODUCTION

This report describes the stated preference survey design and data collection work for the “Fair Trade” Milk Market Research study conducted by RSG for the Agency.

The purpose of the stated preference survey was to obtain detailed information that could be used to determine the market potential of “Fair Trade” milk, including target consumer segments, optimal distribution channels, consumer price sensitivity, key competitors, and optimal product labeling attributes.

Prior to designing the stated preference survey, RSG conducted a short survey of MomConnection® panel members to assess the level of understanding of how milk is priced, awareness of recent increases in the cost



of milk, and to test various descriptors for “Fair Trade” milk. The survey questions and results are included in Appendix H.

RSG developed and implemented a stated preference survey that gathered information from individuals who currently purchase at least a quart of milk per week and live in the target regions (Vermont, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, and New York). The first section of the survey collected information on respondents’ current milk purchasing behavior, experience with Fair Trade Certified™ products, experience with local food purchases, and respondents’ perception of the geographic definition of “local.” The second section of the survey presented stated preference (trade-off) questions that were used to estimate consumers’ price sensitivity and preferences regarding the potential “Fair Trade” milk product. A series of debrief questions following the stated preference questions were designed to provide further insight into why respondents made the choices they did in the stated preference questions. Following the debrief section, respondents completed a series of rating exercises designed to measure attitudes towards a range of beliefs and behaviors that could influence consumer preference for “Fair Trade” milk. The final section of the survey collected demographic information used to ensure a representative sample of the milk-buying population and to characterize consumer segments likely to purchase “Fair Trade” milk.

This report documents the stated preference survey approach, design, administration, and results.

SURVEY APPROACH

The stated preference survey was designed to characterize the current milk purchasing behavior and the preferences of milk purchasers who could be interested in purchasing a “Fair Trade” milk product in the future.

The stated preference survey approach employed a computer-assisted self-interview (CASI) technique developed by RSG. The survey instrument was customized for each respondent by presenting questions and modifying wording based on respondents’ previous answers. These dynamic survey features provide an accurate and efficient means of data collection and allow presentation of future options that correspond with the respondents’ reported experiences. The customized, proprietary software was programmed for administration online to targeted audiences via email distribution.

To ensure robust statistics, 300 or more responses were collected for most of the target areas within the study region (Table 1). The sample was obtained through the reputable sample vendors Survey Sampling International and SampleCzar.



Table 1: Number of respondents in target areas of study region

Maine:	301
New Hampshire:	301
Vermont:	409
Massachusetts: (outside of Boston area)	302
Massachusetts: Boston area:	403
Connecticut:	402
Rhode Island:	229
New York: (outside of New York City)	300
New York City:	300
Total:	2947

SURVEY QUESTIONNAIRE

Respondents were screened to ensure that they are residents of the study region (Figure 1), purchase at least a quart of milk at least once a week, and are responsible or share responsibility for purchasing the milk for their households.

Figure 1: Study Region



The questionnaire consisted of five main parts: section one contained context questions that asked for details about the respondents’ most recent milk purchase as well as what they usually buy, and questions exploring respondents’ experience with and perception of Fair Trade Certified™ products and local food products. Section two contained the stated preference questions simulating a shopping experience where respondents were asked to choose between the milk product they most recently purchased and two alternatives. Section three contained debrief questions, section four contained questions about attitudes and values, and section five contained demographic questions. The text of the questionnaire is included in Appendix A and example survey screens are included in Appendix B.


SECTION 1: CONTEXT QUESTIONS

Current Milk Purchasing Behavior

The first section of the questionnaire collected information from respondents about their current milk purchasing behavior. Respondents were asked to report the characteristics of the milk product they purchased most recently, as well as the characteristics of the milk product or products that they usually purchase. If respondents purchased more than one type of milk when they most recently purchased milk, they were asked to focus on one type of milk to describe as their most recent purchase. This section collected details of these purchases, including the fat content (Figure 2), size, brand, packaging, price (for most recent purchase), purchase location, and source of the milk.

Figure 2: Fat Content of Milk Question

What kind of milk did you purchase most recently? What kind of milk do you usually buy?		
	Most recently, I bought: (Choose ONE)	I usually buy: (Check all that apply)
Whole milk	<input type="radio"/>	<input type="checkbox"/>
2% milk	<input type="radio"/>	<input type="checkbox"/>
1% milk	<input type="radio"/>	<input type="checkbox"/>
Skim milk	<input type="radio"/>	<input type="checkbox"/>

Next Question 

The final context questions asked respondents to identify the brands of milk that they are familiar with from a list of forty-one brands sold throughout the study region. Respondents were then asked to identify where the milk from the brands they recognized came from: farms in their state, farms in the Northeast, or farms outside of the Northeast. A “not sure” option was included in this question.

Experience with and perception of Fair Trade Certified™ products

The next series of questions within section one of the questionnaire collected information from respondents about their experience with Fair Trade Certified™ products. Respondents were asked to report which “Fair Trade” products, if any, they had heard of. Those who had heard of Fair Trade Certified™ products were



asked to describe their Fair Trade Certified™ purchases, including the type of product purchased and how frequently products were purchased. Respondents were also asked to rate how important purchasing Fair Trade Certified™ products is to them, and to identify their reasons for purchasing these products.

Experience with and perception of local food products

The final series of questions in section one collected information about respondents’ experience with local foods. Much of the information gathered was similar to the section on Fair Trade Certified™ products: frequency of purchase, types of local foods purchased, importance of purchasing local foods, and reasons for purchasing local. Respondents who do not purchase local foods were asked to provide reasons why they don’t. Finally, in regard to local food, respondents were asked to specify which geographical locations they consider local.

SECTION 2: STATED PREFERENCE QUESTIONS

Stated Preference Introduction

The survey sample was split between two types of introductions to the stated preference questions. Half of the sample was randomly assigned to view a short introduction and the other half was assigned to a long introduction. The split sample approach was adopted to test the impact of education on consumer acceptance of “Fair Trade” milk.

The short introduction provided no information about the concept of “Fair Trade” milk. Brief instructions were provided and respondents proceeded directly into the choice experiments. For these respondents, the only information they received about “Fair Trade” milk was the definition provided in the choice experiments when the “Fair Trade” attribute was shown: “The sale of ‘Fair Trade’ milk provides a fair, stable price to dairy farmers, helping them cover the cost of producing the milk.”

The long introduction explained that dairy farmers do not have control over the price they are paid for their milk, that the price they are paid can change from month to month, and that increasing costs for fuel and grains have made it difficult for some dairy farms to cover their costs. Respondents were informed that a new product called “Fair Trade” milk may be available in the future, and that sales of “Fair Trade” milk would compensate farmers with a price that, at the minimum, would cover the cost of producing the milk and guarantee a stable, predictable payment to farmers. The short and long introductions are shown in Figure 3 and Figure 4.



Figure 3: Short stated preference introduction (1 screen)

In the next section of this survey, you will go through a series of eight questions.

Assume you are in a store shopping for milk. You will be presented with three different milk products.

- The first option will always be the milk you told us about earlier in the survey - the milk you purchased most recently.
- The second and third options will change in each of the eight questions.

Please read through each option and choose the milk product you think you would purchase if these were the only products available to you.


Next Question 

Figure 4: Long stated preference introduction (3 screens)

Milk Pricing: A Unique Story

Unlike the computer you are using or the bread you eat, the milk you drink is not priced by the producer.


The computer manufacturer and your local baker price their products so they can recover their costs and make money.

Dairy farmers, however, have no control over the price they are paid for the milk they produce. This price is set at a national level and can change from month to month, sometimes making it difficult for farmers to plan and budget.

In addition, the cost of milk production has increased over the past few years. For example,

- gasoline and diesel for running farm equipment are becoming more and more expensive
- the cost of feed crops (especially grain) has increased due to demand for grains for ethanol (energy) production.


The end result is that some dairy farms are going out of business because they do not receive enough money from the sale of their milk to cover the costs of producing the milk.

Next Question 

Due to these issues with milk pricing, a new product called "Fair Trade" milk may be available in the future.

Sales of "Fair Trade" milk would:

- compensate farmers with a price that, at the minimum, covers the cost of producing the milk
- guarantee a stable, predictable payment to farmers

Next Question 



In the next section of this survey, you will go through a series of eight questions.

Assume you are in a store shopping for milk. You will be presented with three different milk products.

- The first option will always be the milk you told us about earlier in the survey - the milk you purchased most recently.
- The second and third options will change in each of the eight questions.

Please read through each option and choose the milk product you think you would purchase if these were the only products available to you.

Next Question 

Stated Preference Questions

The survey presented each respondent with eight stated preference trade-off questions designed as choice experiments. These questions were customized based on the size and fat content of the milk the respondent purchased most recently. The stated preference questions presented respondents with three milk products and asked them to choose which they would buy if these were the only options. The first alternative (option) was always the milk the respondent reported purchasing most recently, and the second and third alternatives were hypothetical milk products of the same package size and fat content as the most recently purchased milk.

Each of the alternatives was described by several attributes, including the source of the milk, the price of the milk, and whether it was organic, free of artificial growth hormones (FoAGH), and/or “Fair Trade”. The price attribute was always displayed at the bottom of the description, but the order of the other attributes was randomized across respondents to minimize order bias.

A brand attribute was not included in the stated preference exercises for several reasons. Since the “Fair Trade” milk product is conceptual at this stage, branding has not been developed, so it was impossible to trade-off potential new brands with existing brands. The very wide variety of milk brands in use across the study region also added significant complexity to the task of selecting a set of brands that could be adequately tested in the stated preference exercises. The likelihood of potential purchasers continuing to buy their current milk instead of switching to a new (brand of) milk is captured in these exercises and in the modeling and forecasting work described later in this report by using the choice context of comparing the recent purchase with two hypothetical products.

The levels (values) of the attributes shown for the first alternative, the most recently purchased milk, were based on answers given by the respondent earlier in the survey and did not vary across the eight stated preference trade-off questions. For the second and third alternatives, the hypothetical milk products, the respondent was presented with different levels for each of the attributes in each of the eight questions, creating a different “trade-off” among the choice alternatives (Figure 5).



Figure 5: Sample Stated Preference Scenario


You are in a store and you are going to buy a 1/2 gallon of whole milk.

These three products are the only options. Which one would you buy?

Information in the green boxes has changed.

Product 1:	Product 2:	Product 3:
The milk you purchased most recently...		
is organic & free of artificial growth hormones		is organic & free of artificial growth hormones
	is "Fair Trade"**	is "Fair Trade"**
source of milk is unknown	comes from farms outside of the Northeast	comes from farms in your state
costs \$3.49 for a 1/2 gallon	costs \$2.90 for a 1/2 gallon	costs \$4.10 for a 1/2 gallon
<input checked="" type="radio"/> Choose Product 1	<input type="radio"/> Choose Product 2	<input type="radio"/> Choose Product 3

Question 5 of 8

Next Question 

*The sale of "Fair Trade" milk provides a fair, stable price to dairy farmers, helping them cover the cost of producing the milk.

The specific levels assigned to the attributes in each of the stated preference questions were determined using an orthogonal design. This technique is commonly used in constructing experimental plans. The orthogonal design for this survey contained sixty-four experiments, grouped into eight orthogonal blocks. These blocks of eight experiments were used sequentially during the administration of the survey, with a complete block of experiments assigned to each respondent. Each of the eight questions presented to respondents comprised one of the eight selected experiments. Each experiment contained four independently varied attributes (Table 2).

The prices of the second and third alternatives were calculated relative to the price of the most recently purchased milk. Different pricing levels were used when the most recently purchased milk was organic and when it was not organic. Since organic milk is already more expensive than most other milks, a non-organic but “Fair Trade” milk is somewhat likely to be less expensive than organic milk. To ensure that the stated preference experiments were realistic, half of the price levels for the hypothetical milks were less than the most recently purchased milk. When the most recently purchased milk was not organic, only one of the four price levels for the hypothetical milks was less than the most recently purchased milk.



Table 2: Stated preference attributes and levels

Attributes	Levels
Source of milk	
	Comes from farms in your state
	Comes from farms in the Northeast
	Comes from farms outside of the Northeast
	If source was not known for most recent purchase, insert “source of milk is unknown”.
Organic/Artificial growth hormone status	
	is organic and free of artificial growth hormones
	is free of artificial growth hormones
	<blank>
Fair Trade	
	is “Fair Trade” Definition of Fair Trade shown below options: “The sale of “Fair Trade” milk provides a fair, stable price to dairy farmers, helping them cover the cost of producing the milk.”
	<blank (not Fair Trade)>
Price	
<i>If most recent purchase was organic:</i>	Costs \$X.XX (Current price – \$0.30 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price – \$0.10 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price + \$0.10 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price + \$0.30 per quart) for a <insert size most recently purchased>
<i>If most recent purchase was not organic:</i>	Costs \$X.XX (Current price – \$0.10 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price + \$0.10 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price + \$0.30 per quart) for a <insert size most recently purchased>
	Costs \$X.XX (Current price + \$0.50 per quart) for a <insert size most recently purchased>



SECTION 3: DEBRIEF QUESTIONS

Reasons for Choice


At the conclusion of the stated preference scenarios, respondents who did not choose any of the “Fair Trade” alternatives in any of the scenarios were shown a debrief question that asked them to provide the reason(s) why they never selected this option (Figure 6). The options were shown in random order to minimize order bias.

Figure 6: Reason for not choosing a “Fair Trade” milk option

Why didn't you choose any of the "Fair Trade" milk products in the previous section?

Select all that apply.

- I don't care if farmers aren't making enough money
- I don't think that farmers need more help
- I shouldn't have to pay more to keep farms in business
- Too expensive
- I don't understand why it is needed
- Other, please specify:
- Not sure

Next Question 


Respondents who chose a “Fair Trade” milk option in any of the scenarios were asked to provide the reason(s) why they selected this option (Figure 7). The options were shown in random order to minimize order bias.

Figure 7: Reason for choosing a “Fair Trade” milk option

Why did you choose a "Fair Trade" milk product in the previous section?

Select all that apply.

- It's the "right" thing to do
- Provides the farmer with a livable wage
- Higher quality
- Higher price
- Lower price
- Trendy/a popular choice
- Other, please specify:
- Not sure

Next Question 



Anticipated frequency of Purchasing “Fair Trade” milk

Respondents who indicated that they would buy at least one of the “Fair Trade” milk alternatives were asked how often they expected that they would purchase “Fair Trade” milk (Figure 8).

Figure 8: Anticipated frequency of purchasing “Fair Trade” milk

If “Fair Trade” milk was available at the store you usually shop at, how often do you think you would buy “Fair Trade” milk?

Every time I buy milk
 2-3 times per month
 Once a month
 Several times a year
 Once a year
 Other, please specify:

Next Question ▶▶

Interest in other “Fair Trade” dairy products

All respondents, regardless of whether or not they selected a “Fair Trade” option in the stated preference questions, were asked to indicate their likelihood of purchasing other “Fair Trade” dairy products (Figure 9).

Figure 9: Likelihood of purchasing other “Fair Trade” dairy products

If the following dairy products were available as “Fair Trade,” do you think you would purchase them?

	Definitely Would Purchase	Might Purchase	Not sure	Probably Would NOT Purchase	Definitely Would NOT Purchase	Don't usually purchase this product
Sour cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heavy cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cottage cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Half and half	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Light cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next Question ▶▶

“Fair Trade” milk descriptors and pricing

The questions in this section of the questionnaire asked all respondents’ to choose their most preferred descriptor for “Fair Trade” milk, what level of profit (if any) they felt that the farmer should receive for “Fair Trade” milk, and what labeling attributes are most important to them. Respondents were also asked whether



they were aware of any change in the cost of milk, and if so, from what source or sources they had gathered that information, and whether they thought the price of milk was increasing or decreasing.

SECTION 4: ATTITUDES AND VALUES

Respondents were then asked to rate how strongly they agree or disagree with a series of attitudinal statements. The statements were shown in random order to minimize order bias. These statements covered a range of purchasing behaviors, attitudes towards pricing products to provide a livable wage to producers, attitudes towards humane treatment of animals, recyclable packaging, the importance of price when making purchase decisions and other factors that could be used to characterize respondents for determining target market segments (Figure 10, Figure 11).

Figure 10: Attitudinal statements (Screen 1 of 2)

Please indicate your level of agreement with each of the statements. Please select one response for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I trust that foods with certification labels (such as Kosher, Organic, Fair Trade™) meet the standards implied by the label.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me that there is open (green) space in the local areas around me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to buy food products that come from humanely treated animals (e.g., eggs from free-range chickens), when available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish that more local products were available in my area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make a strong effort to buy local products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to buy products that promise a decent wage to farmers/producers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do my best to select food items that are packaged in recyclable materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me to support farmers/producers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next Question 



Figure 11: Attitudinal statements (Screen 2 of 2)

Please indicate your level of agreement with each of the statements. Please select one response for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I'm willing to pay a premium price for high-quality foods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay close attention to information included on the label or packaging of food items that I purchase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price is the most important factor when I'm buying food items.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying food that is healthy for me is very important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to buy healthier food than what I would normally buy when I am serving it to children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm a brand-loyal customer - I usually buy the same brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to buy organic food whenever it is available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make a strong effort to buy environmentally friendly products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next Question 

Respondents were also asked to allocate points towards factors that influence their decision to purchase milk, including price, brand, organic/FoAGH status, source of the milk, and label and packaging design (Figure 12). These factors were presented in random order to minimize order bias.




Figure 12: Point allocation exercise: factors influencing decision to purchase milk

As you know, a number of aspects can contribute to your decision as to which milk to buy such as price, brand, design of labels and packaging, and features (e.g., organic or free of artificial growth hormones).

Thinking about that, please allocate 100 points among the following categories, taking into account how important each of these is to you when deciding which milk to buy.

You do not have to allocate points to all categories, only to those that are important to you, as long as the total adds up to 100.

Free of artificial growth hormones	<input type="text"/>
Price	<input type="text"/>
Label and Packaging Design	<input type="text"/>
Source of the milk	<input type="text"/>
Brand	<input type="text"/>
Organic	<input type="text"/>
<hr/>	
Total	<input type="text"/>



SECTION 5: DEMOGRAPHICS

Finally, general demographic questions were asked to allow comparison of the sample population to the overall population and to help characterize target market segments. The demographic questions included residence location, household size, age of children in the household, number of household vehicles, gender, age, highest education level attained, employment status, and annual household income.

At the conclusion of the demographic questions, respondents were given the opportunity to leave comments about the survey or about the proposed “Fair Trade” milk product. These responses are included in Appendix D.

SURVEY ADMINISTRATION

Data collection was conducted from July 24 to August 13 of 2007. The computer-based survey was administered online via email invitation to a targeted population in the study region (Figure 1). A total of 2,947 respondents finished the survey (Table 1). Most respondents completed the survey in 15 to 20 minutes. The email invitation contained a link to the survey which brought respondents to SurveyCafe.com, a website hosted by RSG. On the first page of the survey, respondents were provided with instructions for taking the survey. An email address and a toll-free telephone number were provided to respondents in case they had questions.



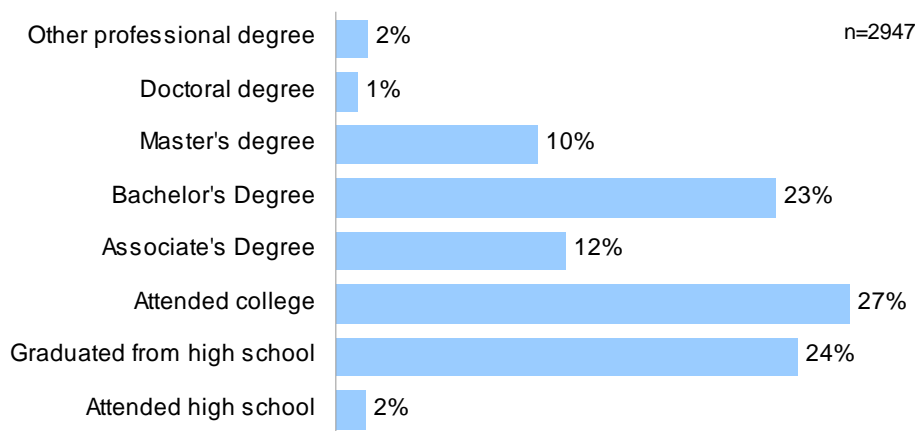
SURVEY RESULTS

A total of 2,947 respondents completed the survey. The quota for most of the target regions was 300 completes, with a larger quota of 400 completes for Connecticut, Boston, and Vermont (Table 1). Sample characteristics were monitored during data collection and sampling was adjusted as needed to attain a representative sample in each target region. This section includes a summary of the characteristics of the respondents in the survey sample and their current milk purchasing behavior. It also summarizes responses to the Fair Trade Certified™ and local products questions and the debrief questions following the stated preference scenarios. A complete set of tabulations of survey questions is shown in Appendix C.

SAMPLE CHARACTERISTICS

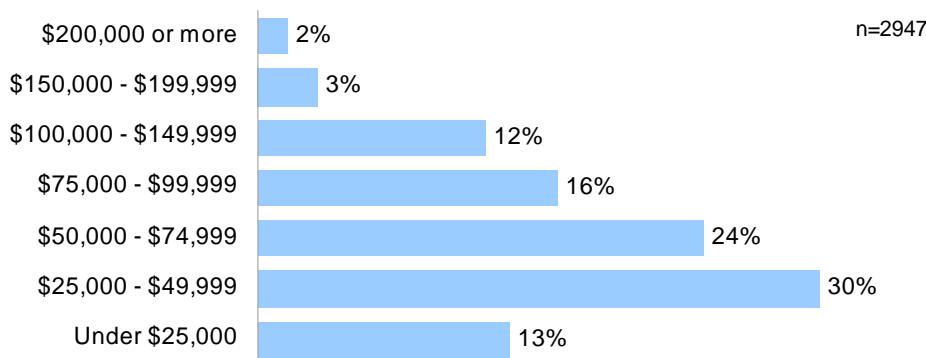
The sample is comprised of 78% women and 22% men. The median age is in the range of 40-59 years. About a third (35%) of respondents attained a Bachelor’s degree or higher degree (Figure 13).

Figure 13: Education level



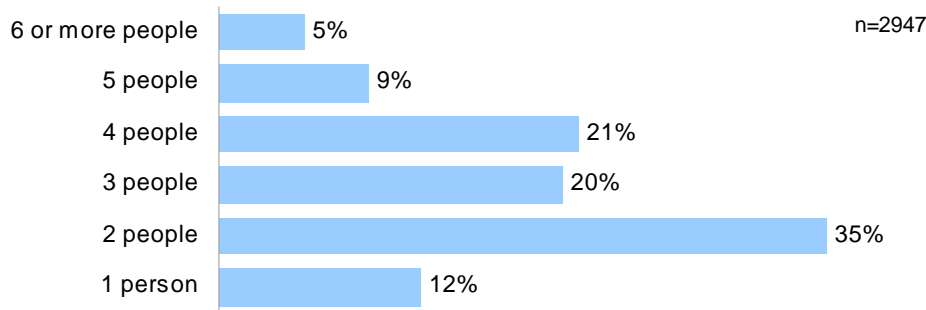
The median annual household income is in the \$50,000 - \$74,999 per year bracket (Figure 14) and over half (61%) of respondents are employed full or part time.

Figure 14: Annual household income



A range of household sizes are represented (Figure 15). Over half (57%) of households do not have children, representing adults living alone (12%) and adults living with other adults (45%). Of the 44% of households with children, about half (48%) have one child and over a third (37%) have two children.

Figure 15: Household size



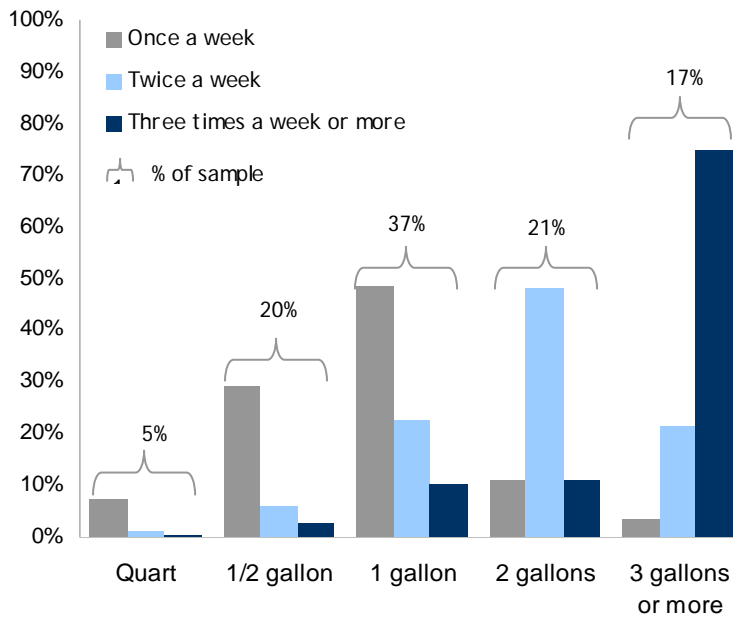
CURRENT MILK PURCHASING BEHAVIOR

Respondents were asked a series of questions about the milk they purchased most recently and the milk that they usually purchase. The survey questionnaire is included in Appendix A. Responses for the milk purchased most recently were very similar to responses for the milk respondents usually buy. Table 14 compares the fat content and package sizes for respondents’ most recent milk purchase and the milk that they usually purchase.

Most respondents (71%) are solely responsible for purchasing the milk for their households and the remaining respondents share the responsibility with another household member. The majority (61%) purchase milk once a week. A quarter of the sample (27%) purchase milk twice a week and 12% purchase milk three times a week or more. An equal number of households purchase one gallon per week (37%) and two or more gallons per week (38%). Those purchasing two or more gallons are more likely to be shopping for milk two or more times per week (Figure 16).

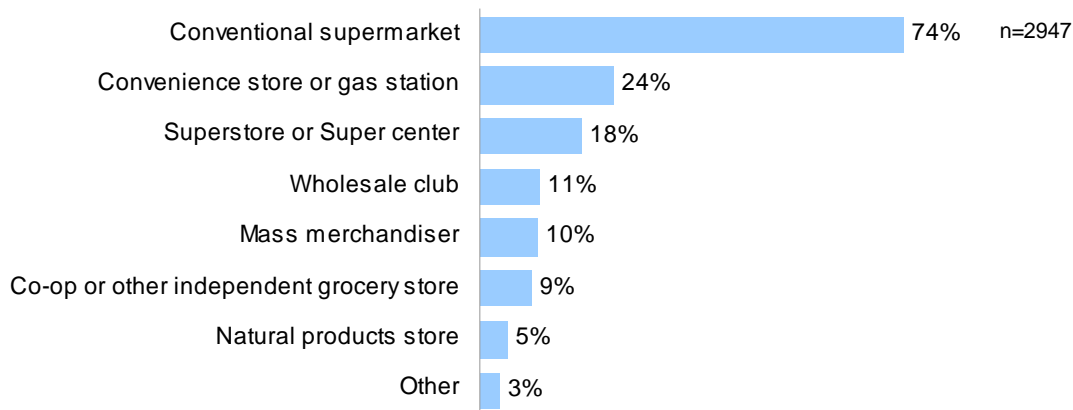


Figure 16: Frequency of purchase by volume purchased per week (n=2947)



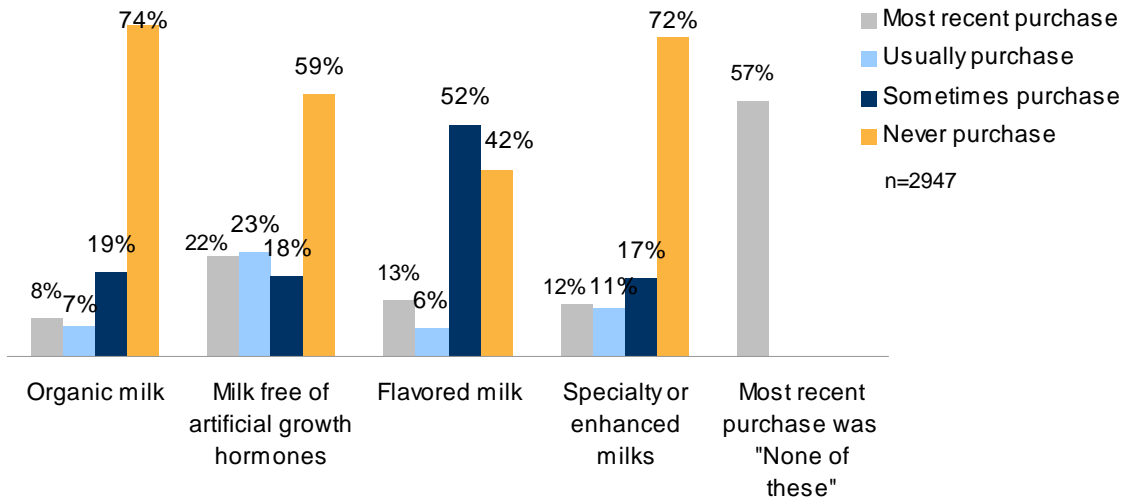
Most respondents (74%) buy their milk at conventional supermarkets (Figure 17). Almost a quarter buy milk at convenience stores (24%). Those who are purchasing two or more gallons per week, or who are buying milk more than once per week are more likely to buy milk at convenience stores, superstores, wholesale clubs, and mass merchandisers. Those purchasing organic milk are more likely to shop at natural products stores and co-ops or other independent grocery stores.

Figure 17: Where milk is usually purchased



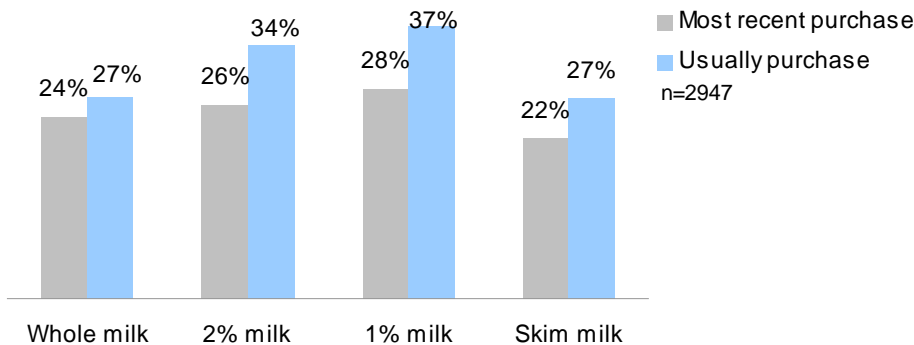
Almost a quarter of respondents (22%) most recently purchased milk free of artificial growth hormones. A much smaller proportion, 8%, purchased organic milk most recently and 19% reported purchasing organic milk “sometimes” (Figure 18).

Figure 18: Features of milk purchased



The fat contents of the milk respondents purchased most recently were almost evenly distributed, ranging from 22% to 28% for each fat content level (Figure 19). The “usual” purchases show that 1% fat and 2% fat milks are purchased at a higher frequency than whole and skim milk. The majority, 81% of respondents, usually purchase one type of fat content, and 19% usually purchase more than one type of fat content.

Figure 19: Fat contents of milk purchased



Almost all respondents (92%) purchase only one size of milk. The gallon size is the most frequently purchased size, with 65% of respondents reporting this as the size they usually purchase. Over a third, 36%, usually buy the half-gallon size and 9% buy the quart size.

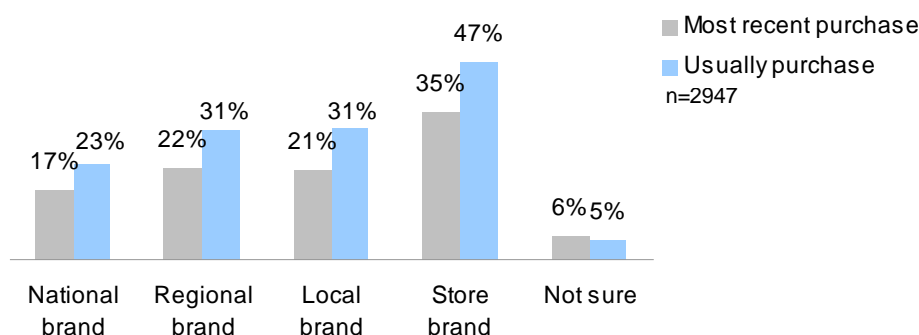


Most respondents (83%) usually purchase milk in one type of packaging. Three-quarters of respondents (74%) usually purchase milk in regular plastic packaging, while a quarter of respondents (26%) buy milk in light-blocking plastic. Less than a quarter purchase milk in cardboard cartons (18%) or glass (3%).

When asked where they thought the milk that they most recently purchased was produced, most respondents believed the milk came from farms in the Northeast (41%) or farms in their state (26%). Only 2% believed that the milk came from farms outside of the Northeast, and the remaining 31% were not sure where the milk came from.

About half (47%) of respondents report that they usually buy a store brand. Equal numbers (31%) usually buy a local or regional brand, and about a quarter (23%) report usually buying a national brand of milk (Figure 20).

Figure 20: Brand type usually purchased



Respondents were asked to report the price they paid for the milk they purchased most recently. A summary of the prices reported by size is included in Table 3.

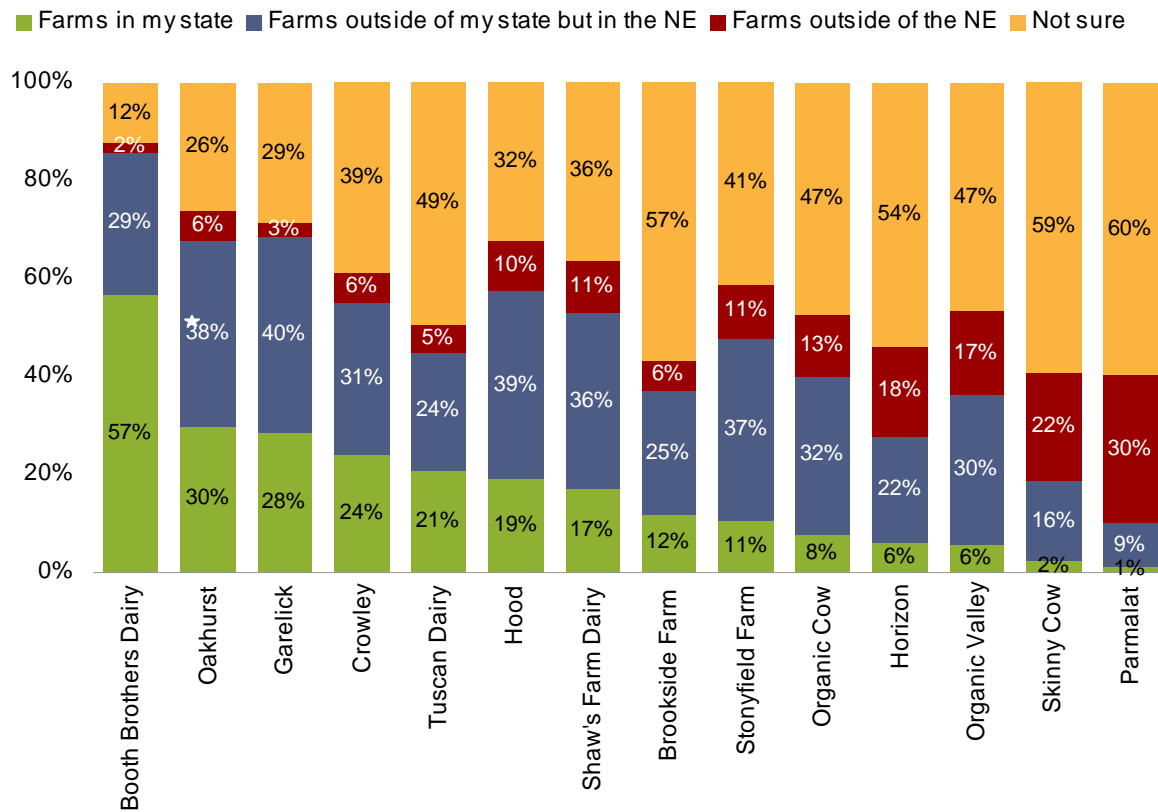
Table 3: Summary of prices reported by size

(Total: n=2947)	Mean	Mode	Minimum	Maximum
Quart size (n=209)	\$1.83	\$1.89	\$1.00	\$4.39
½ Gallon size (n=940)	\$2.50	\$2.00	\$1.00	\$5.00
Gallon size (n=1798)	\$3.40	\$3.00	\$1.00	\$9.00

The final questions in this section of the survey asked respondents to identify brands of milk that they are familiar with from a list of 41 brands. Respondents were then asked to identify the source of the milk, if known, for brands they are familiar with. The results for the brands which were recognized by 10% or more of the sample are shown in Figure 21.



Figure 21: Source of milk for familiar brands



EXPERIENCE WITH AND PERCEPTION OF FAIR TRADE CERTIFIED™ PRODUCTS

The majority of respondents (86%) had not heard of Fair Trade Certified™ products. Of the 14% who have heard of Fair Trade Certified™ products, many could not remember specific brands or products, but were familiar with the concept of Fair Trade certification for international products. The most commonly mentioned Fair Trade Certified™ products were coffee, tea, chocolate, and bananas. Non-food products such as crafts, baskets, clothing, and personal products (e.g., lotions) were also mentioned. Specific brands that were mentioned included “Trader Joe’s,” “Starbucks,” “Ben and Jerry’s,” “Green Mountain Coffee,” “Newman’s Own,” “Coffee by Design,” “The Body Shop,” and “Equal Exchange” products.

Of those who had heard of Fair Trade, 15% purchase Fair Trade Certified™ products frequently, and 53% purchase them occasionally. Of those who purchase these products frequently or occasionally, over a quarter (28%) could not name a specific Fair Trade Certified™ product they had purchased. Those who purchase Fair Trade Certified™ products frequently or occasionally were also asked to rate the importance of purchasing these products. Only a quarter (26%) gave a rating of “extremely important” (7%) or “very important” (19%). Almost half rated purchasing Fair Trade Certified™ as “somewhat important” and the remaining quarter gave a rating of “not very important” (20%) or “not important at all” (7%).



The main reasons selected for purchasing Fair Trade Certified™ products had to do with providing workers with decent working and living conditions and a living wage, followed by a desire to support sustainable and environmentally friendly agricultural practices (Table 4).

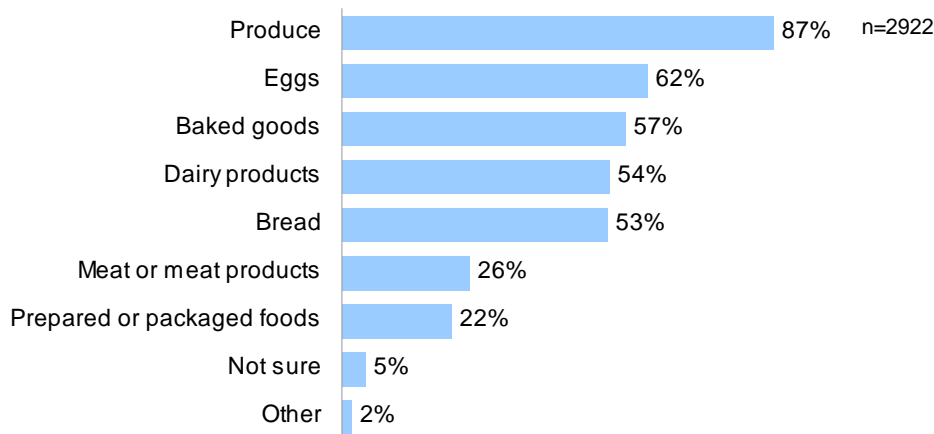
Table 4: Reasons for purchasing Fair Trade Certified™ products (n = 382)

Statement	Frequency
To support businesses that provide workers/producers with decent working and living conditions	64%
To support businesses that provide workers/producers a living wage	59%
To support sustainable agricultural practices	52%
To support environmentally friendly agricultural practices	52%
It's the 'right' thing to do	39%
Fair Trade Certified products are higher quality	14%
Not sure	12%
Fair Trade Certified products are more expensive	6%
Fair Trade Certified products are trendy/a popular choice	3%
Fair Trade Certified products are less expensive	2%

EXPERIENCE WITH AND PERCEPTION OF LOCAL FOOD PRODUCTS

The majority of respondents purchase local food products “frequently” (37%) or occasionally (53%). Produce and eggs are the local products purchased most frequently (Figure 22). Over half of respondents (54%) report purchasing local dairy products.

Figure 22: Types of local food products purchased



About 40% of respondents who buy local food products feel that buying local is “extremely” (11%) or “very” (29%) important. Almost half (44%) rated buying local food products “somewhat important” and the remaining 15% gave a rating of “not very important” or “not important at all.” The main reasons cited for purchasing local food included supporting local farms and producers and supporting the local economy (Table 5).

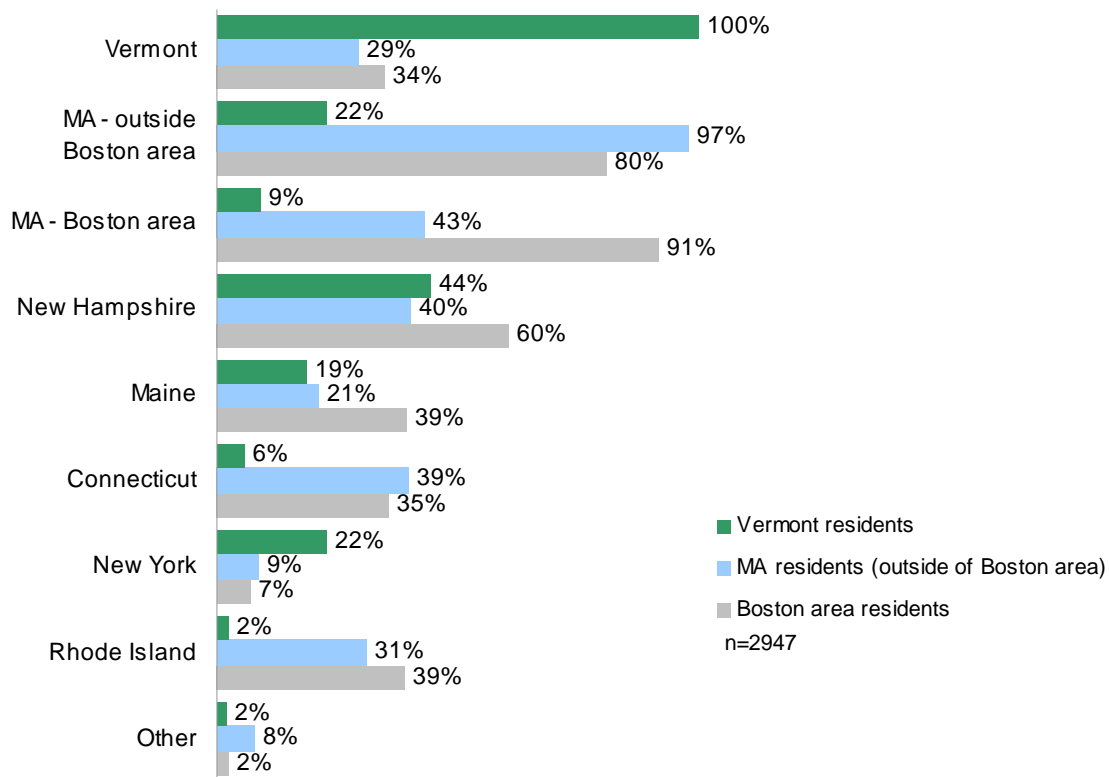
Table 5: Reasons for purchasing local food products (n = 2922)

Statement	Frequency
To support local farms and producers	73%
Local food is fresher	71%
To support the local economy	65%
I like to know where my food comes from	39%
Local food tastes better	36%
To reduce the environmental impact by minimizing transportation of food	29%
Local food products are higher quality	26%
It's the right thing to do	24%
To maintain open space (i.e. farmland) in my local area	21%
Local food products are less expensive	20%
Local food products are trendy/a popular choice	3%

Finally, respondents were asked to identify the areas that they consider to be local in terms of whether food products would qualify as local. Figure 23 shows the states that Vermont, Boston, and Massachusetts residents consider “local”. All Vermonters consider Vermont to be local, and 44% of Vermonters consider New Hampshire local as well. Most Boston residents consider all of Massachusetts to be local (80%), while only 43% of Massachusetts residents who don't live in Boston consider Boston to be local. More Boston residents consider NH to be local (60%), compared to only 44% of Vermonters.



Figure 23: Locations VT, MA, and Boston residents consider local

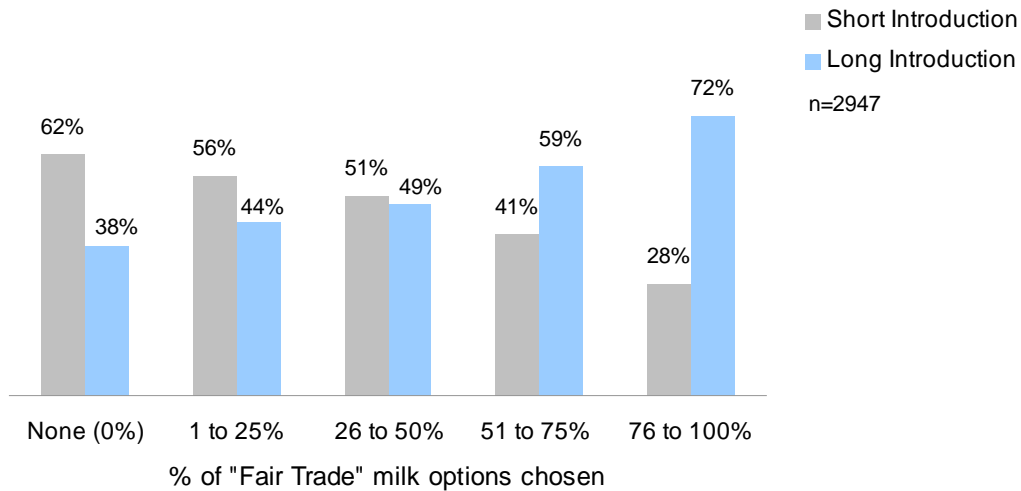


STATED PREFERENCE QUESTIONS

Each respondent completed a series of eight stated preference questions. The majority of respondents (86%) chose at least one “Fair Trade” milk option. The minority, 9% of the sample, only chose the option displaying their most recent purchase and never chose either of the two alternatives. Respondents who were shown the long version of the stated preference introduction were significantly more likely to choose 51 to 100% of the “Fair Trade” milk options shown to them (Figure 24).



Figure 24: Frequency of choosing a “Fair Trade” milk option in Stated Preference questions



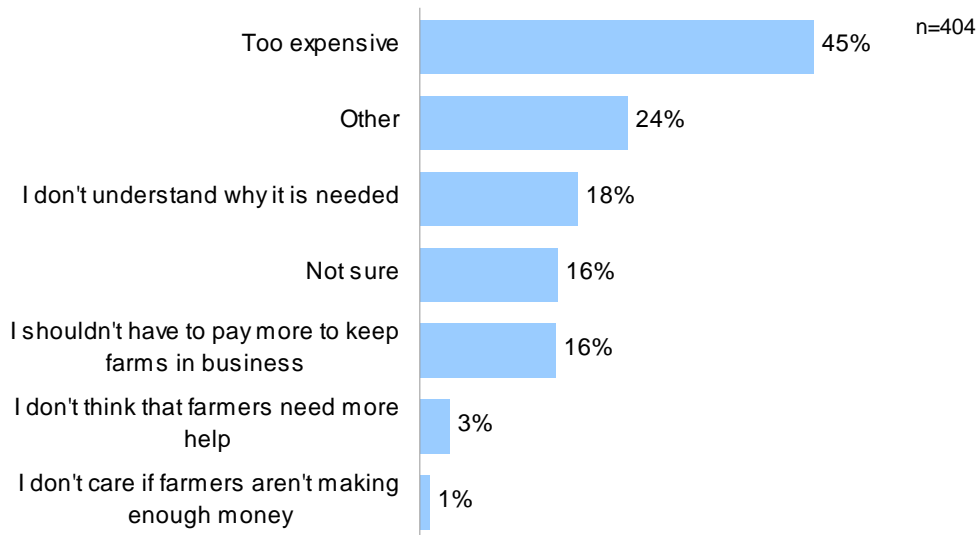
DEBRIEF QUESTIONS

Reasons for Choice

At the conclusion of the stated preference portion of the survey, the 14% of respondents who did not choose a “Fair Trade” milk option in any of the eight experiments were shown a follow-up question asking why. They were asked to select all applicable reasons from a list of choices. The most commonly selected reason was “Too expensive,” selected by 45% of those who did not choose a “Fair Trade” milk option (Figure 25). Almost a quarter (24%) selected “other” and stated reasons such as brand loyalty, limited incomes, preference for the taste of the current brand, or already buying a local brand. A few respondents reasoned that dairy farmers are already being subsidized or that the pricing system needs to change at the government level.

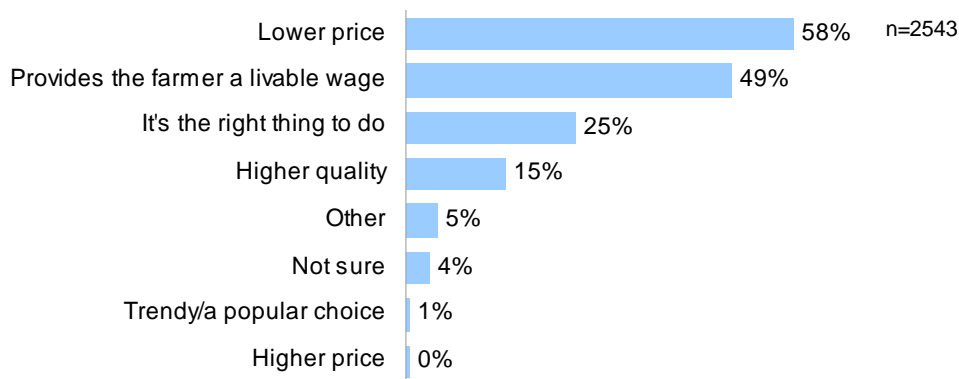


Figure 25: Reasons for not choosing a “Fair Trade” milk option



Similarly, respondents who chose at least one “Fair Trade” milk option in any of the eight experiments were shown a follow-up question asking why. They were asked to select all applicable reasons from a list of eight choices. The most commonly selected reason was “lower price,” selected by 58% of those who chose a “Fair Trade” milk option, followed by “Provides the farmer a livable wage” (Figure 26).

Figure 26: Reasons for Choosing “Fair Trade” Milk Option

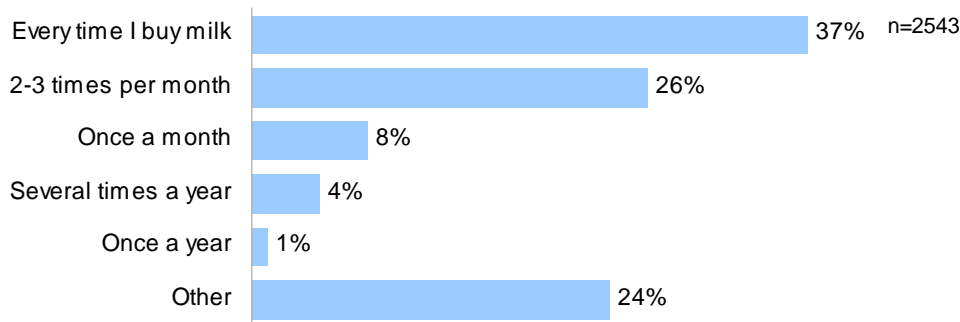


Anticipated frequency of Purchasing “Fair Trade” milk

Those who chose at least one “Fair Trade” milk option were asked how often they would buy “Fair Trade” milk if it was available at the places they usually shop. Over a third (37%) stated that they would buy it every time they shop for milk (Figure 27). Most of the “Other” answers stated that the frequency of purchase depends on the price of the milk.



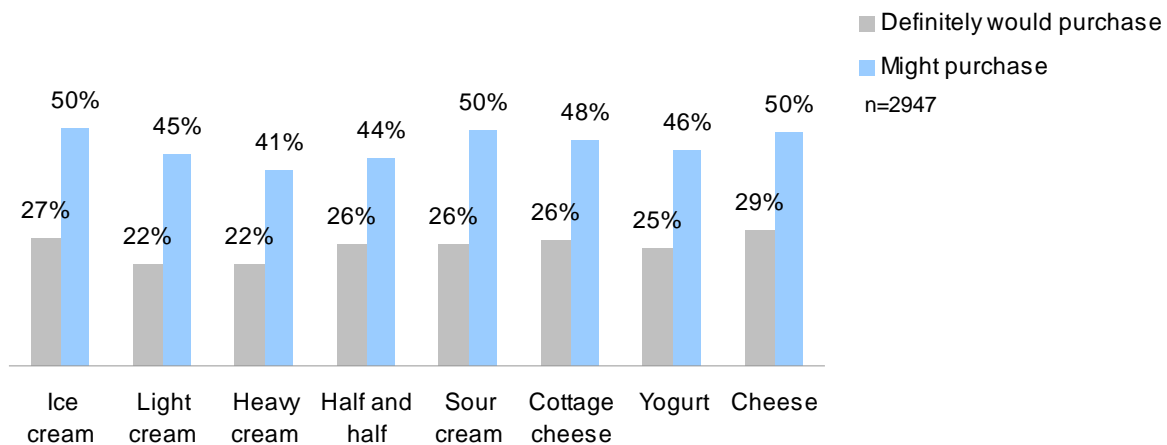
Figure 27: Anticipated frequency of purchasing “Fair Trade” milk



Interest in other “Fair Trade” milk products

All respondents were asked about their likelihood of purchasing other “Fair Trade” dairy products. About a quarter of respondents who usually buy the different types of dairy products report that they definitely would purchase a “Fair Trade” version, and an additional 41-50% said they might purchase these products. Cheese, ice cream, and sour cream received the highest scores (Figure 28).

Figure 28: Anticipated frequency of purchasing “Fair Trade” milk



“Fair Trade” milk descriptors and pricing

Respondents were presented with six different statements that could be used as descriptors for “Fair Trade” milk and they were asked to identify the statement that they most prefer. The two statements that were chosen most frequently were statements that echo general farm support: “By purchasing 'Fair Trade' milk, you are helping support dairy farms in your region” and “'Fair Trade' milk pays farmers a fair price so they can keep farming” were the most popular statements (selected by 24% and 23% of respondents.) The

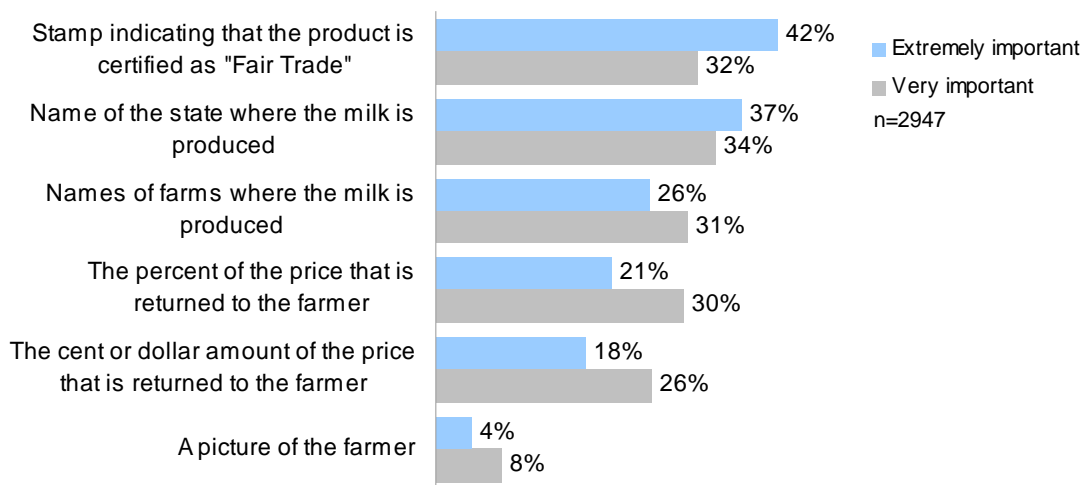


statement used to describe “Fair Trade” milk in the stated preference section received 19% of the vote: “Fair Trade’ milk provides a fair, stable price to farmers, helping them cover the cost of producing milk.”

When asked what level should be used to set the price for “Fair Trade” milk, half of the respondents (51%) selected “A price that ensures that farmers make a 5% profit,” and almost a quarter (23%) selected “A price that ensures that farmers make a 10% profit.”

Respondents were asked to rate the importance of including information on the label of “Fair Trade” milk. The key pieces of information most respondents rated as “extremely” or “very” important are a certification label and the name of the state or states where the milk is produced (Figure 29).

Figure 29: Importance of including information on the label of “Fair Trade” milk

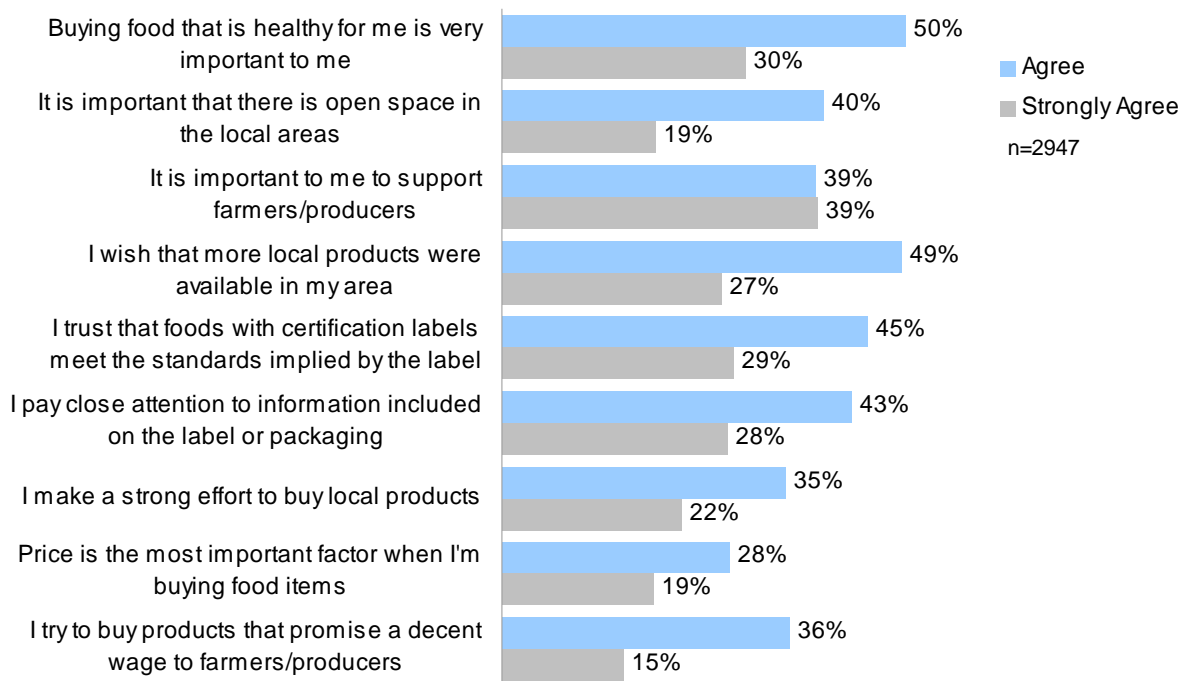


Attitudinal Statements

Respondents were asked to rate how strongly they agree or disagree with a series of sixteen attitudinal statements. These statements covered issues such as trust in certification labels, attitudes toward buying local products, price sensitivity, humane treatment of animals, recyclable packaging and brand loyalty. The highest rated statement was “Buying food that is healthy for me is very important to me,” with 80% of the sample strongly agreeing or agreeing. A selection of these statements is shown in Figure 30.



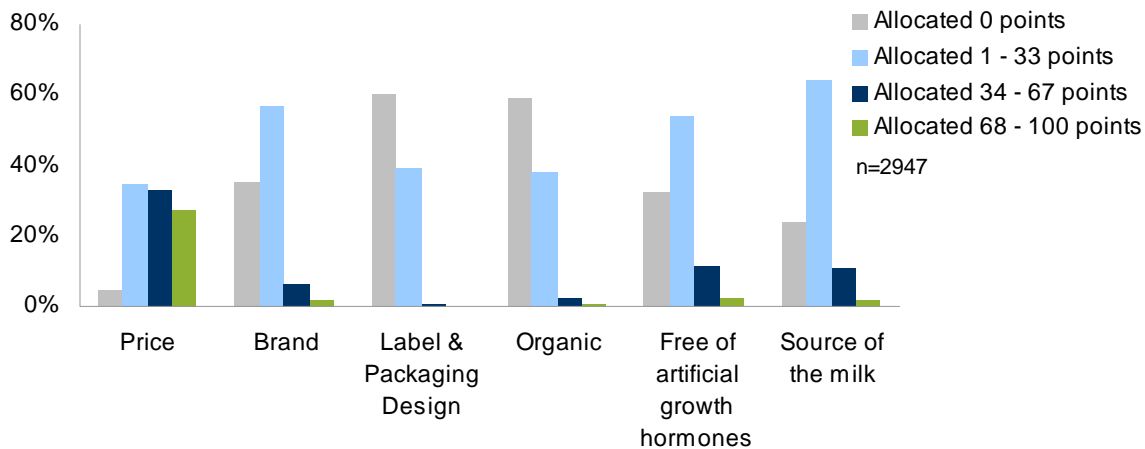
Figure 30: Percent of respondents who agree or strongly agree with selected statements



Point allocation exercise: factors that influence respondents when purchasing milk

Finally, respondents were asked to allocate points to indicate the value they place on price, brand, source of milk, organic/FoAGH status, and label and packaging design when purchasing milk. The highest mean score was given to price (46 points), followed by source of the milk (16 points) and FoAGH (16 points). The mean score for brand was 12 points and for organic, 6 points. Label and packaging design had the lowest mean score (4 points). The point distribution is shown in Figure 31.

Figure 31: Point allocation distribution



SURVEY DATA FILES

Two sets of survey data files are provided in SPSS and Excel format. All background data collected in the survey along with some summary variables are included in the SPSS data file named VTmilk_Bkg.sav and the Excel data file named VTmilk_Bkg.xls. These files contain one record for each of the survey respondents.

A second set of data files named VTmilk_StatedPref.sav and VTmilk_StatedPref.xls, contain all the stated preference data and corresponding background data. These files contain eight records per respondent with each record containing the data from one of the eight experiments presented to each respondent along with all background data.

MODEL ESTIMATION

This section of the report describes the approach used to estimate models using the data from the stated preference questions.

ALTERNATIVES

Each stated preference scenario consisted of three options for purchasing a milk product, as described in the survey questionnaire section of this report. Each option included the price of the milk and information about where the milk was produced, and whether it was organic, FoAGH, and/or “Fair Trade”.

The first option never varied and was always the respondent’s most recently purchased milk, as described by the respondent in the first section of the survey. The second and third options presented two alternatives that varied throughout the eight choice experiments. Respondents indicated which milk product they would buy considering the attributes and prices presented in each option. The stated preference options were customized for each respondent to reflect the package size and the fat content of the milk the respondent most recently purchased.

METHODOLOGY

Preliminary statistical estimation and specification testing was completed using a conventional maximum likelihood procedure that estimated a single set of coefficients for a multinomial logit model.¹ These coefficients were used to estimate aggregate level coefficients for each attribute and test the impacts of various transformations on the base coefficients.

¹ The multinomial logit model has the general form $p(i) = \frac{e^{U_i}}{\sum_{AllModes} e^{U_j}}$, where $p(i)$ is the probability that mode i will be chosen and U_i is

the “utility” of mode i , a function of service and other variables. See, for example, M. E. Ben-Akiva and S. R. Lerman, *Discrete Choice Analysis*, MIT Press, 1985, for details on the model structure and statistical estimations procedures.



GENERAL MODEL STRUCTURE

Several utility equation specifications were tested using the variables included in the stated preference survey as well as characteristics of the milk purchased most recently and characteristics of the respondents. Specification testing included the evaluation of the awareness of Fair Trade Certified™ products, attitudinal statement effects, frequency and volume of purchase effects, and transformations of price by household income. The structure of the model for which results are presented here includes fifteen coefficients. Coefficients were specified for the source of the milk, milk features (organic/FoAGH status), “Fair Trade” status, and price (Table 6).



Table 6: Model Specification

	Coefficient	Units	Alternatives		
			Most Recent Purchase	Alternative 1	Alternative 2
			X indicates the coefficients applied for each alternative's utility equation		
Source of milk	Comes from farms in your state	0/1	X	X	X
	Comes from farms in the Northeast	0/1	X	X	X
	Comes from farms outside of the Northeast	0/1	X	X	X
	Source is unknown	0/1	X	—	—
Milk features	Organic and FoAGH	0/1	X	X	X
	Free of Artificial Growth Hormones	0/1	X	X	X
	(Blank)	0/1	X	X	X
“Fair Trade” status	“Fair Trade” with short introduction	0/1	—	X	X
	“Fair Trade” with long introduction	0/1	—	X	X
	(Blank)	0/1	X	X	X
Price	Price level 1	Discount per quart	—	X	X
	Price level 2	Discount per quart or Premium per quart*	—	X	X
	Price level 3	Premium per quart	—	X	X
	Price level 4	Premium per quart	—	X	X
Constant	Inertia towards recently purchased milk	0/1	X	—	—

* If most recent purchase was organic, Price level 2 was a discount, otherwise it was a premium.



Several transformations of the price coefficients related to income were tested. These transformations can capture the tendency for sensitivity to cost to decrease as income increases. Transforming milk price by income (dividing cost by the natural log of income in thousands of dollars) did not significantly improve the overall model fit.

A constant was applied to the most recent purchase alternative to capture any inertia effects and other utility for the most recent purchase that is not explained by milk attributes and price alone.

MODEL COEFFICIENTS

After the optimal model specification was determined using multinomial logit modeling, Latent Choice modeling was used to identify latent “segments” within the data set- groups of respondents who made similar choices in the stated preference choice experiments.

Latent Choice modeling allowed estimation of segment level models and coefficients for each respondent. These individual coefficient estimates were used as inputs for market volume estimation. Several different segmentation approaches were tested using Latent Choice modeling, resulting in a final model that consisted of six separate classes of respondents: two classes of respondents whose most recent purchase was organic and four classes of respondents whose most recent purchase was not organic. It was necessary to separate organic respondents from non-organic respondents due to the different pricing levels presented to the two groups of respondents in their stated preference experiments. A total of 247 respondents comprised the organic segments, providing 1976 observations of stated preference choices. A total of 2,700 respondents comprised the non-organic segments, providing 21,600 stated preference choices.

Table 7 presents the results of the models with the specification shown in Table 6, for each of the six segments. The coefficients in the models are on a utility scale, so a larger positive value indicates increased utility (or attractiveness) of the coefficient. For example, for the “Thrifty Opportunists,” “farms in your state” has a higher value (2.15) than “farms in the Northeast” (1.41) indicating that milk sourced closer to the respondent is more attractive. The coefficients for each attribute have been “zero-based” so that their values are relative to the least attractive level in the attribute (which has a coefficient value of zero).

Differences in the coefficient values for the six segments will be discussed in the next section of the report, which details the characteristics of each of the six segments. The “Segment Names” presented in Table 7 are names applied to describe the segments based on their milk purchasing behavior, stated preference results, attitudes, and values. Specific information about each segment is included in the next section of the report.



Table 7: Coefficients for each segment

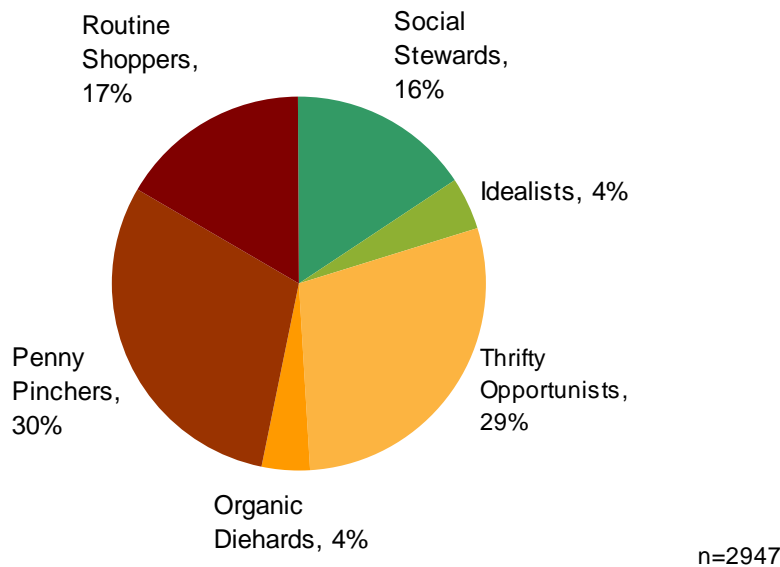
Coefficient	Non-organic Segments 21,600 observations; n=2700				Organic Segments 1976 observations; n=247	
	Thrifty Opportunists	Penny Pinchers	Routine Shoppers	Social Stewards	Idealists	Organic Diehards
Comes from farms in your state	2.15	1.07	1.90	2.71	1.66	2.20
Comes from farms in the Northeast	1.41	1.16	1.06	2.14	1.34	1.05
Farms outside of the Northeast	0	0.02	0	0.86	0	0
Source is unknown	0.32	0	1.46	0	0.32	0.41
Organic and FoAGH	1.17	0.62	0	1.20	1.81	4.71
Free of Artificial Growth Hormones	1.09	1.22	0.59	1.28	1.40	2.57
(Blank)	0	0	0.87	0	0	0
“Fair Trade” with short introduction	0.64	0.74	0	1.07	1.05	0.64
“Fair Trade” with long introduction	1.69	0.85	0.69	1.88	2.09	1.37
(Blank)	0	0	0.25	0	0	0
Price level 1	7.11	10.45	3.56	2.74	3.08	2.35
Price level 2	5.30	2.46	1.61	1.94	2.62	2.01
Price level 3	1.88	0.97	0.64	1.38	0.80	0.79
Price level 4	0	0	0	0	0	0
Inertia towards recently purchased milk	6.46	8.57	4.48	2.13	1.57	2.21

MARKET SEGMENTS

Latent choice modeling was used to identify segments within the sample based on the responses to the stated preference questions. Six distinct segments were identified: four segments of respondents whose most recent purchase was not organic and two segments of respondents whose most recent purchase was organic. The incidence of each segment in the sample is shown in Figure 32. A description of each segment follows.



Figure 32: Incidence of segments in sample



SUMMARY DESCRIPTIONS OF SEGMENTS

Table 8 contains a summary description of each segment. Table 9 summarizes significant differences among the segments, followed by a detailed discussion of the segments.

Table 8: Segments in order of preference for “Fair Trade” milk

Social stewards	<p>Social Stewards care about their community and the people in it. It is very important to them to buy local food products, support local farmers and producers, and support the local economy. They don’t usually buy organic milk and place equal value on milk FoAGH and organic milk. Most buy a ½ gallon to a gallon of milk per week.</p> <p>Most Social Stewards live in suburban areas, though they are more likely than other segments to be well represented in rural areas. A higher proportion of Vermont, New Hampshire, and Boston area residents are Social Stewards compared to proportions of Social Stewards in the other study areas.</p> <p>They love the idea of “Fair Trade” milk, whether or not they are educated about the concept. It is very important to the Social Stewards that “Fair Trade” milk comes from farms in their state or in the Northeast. Almost two-thirds (65%) of Social Stewards say they would buy “Fair Trade” milk every time they shop. They are also very interested in other “Fair Trade” dairy products.</p>
Idealists	<p>The Idealists have strong values- they want the best for the environment, their community, and their food. They currently buy organic milk, and value it slightly more than milk FoAGH</p>



	<p>s. Most buy a ½ gallon to a gallon of milk per week, and most buy the half-gallon size.</p> <p>They are more likely than other segments to live in urban areas and be well-educated, relatively high income, and younger. A higher proportion of Vermont, Rhode Island, New York City area, Boston area, and Connecticut residents are Idealists compared to residents of the other study areas. The Idealists are somewhat price sensitive, but are likely to be motivated to spend more by ethical arguments, e.g., “It’s the right thing to do.”</p> <p>They would probably prefer organic “Fair Trade” milk, though if educated about “Fair Trade,” they may value “Fair Trade” more than organic. About half (48%) said they would buy “Fair Trade” milk every time they shop, and they are interested in other “Fair Trade” dairy products.</p>
<p>Thrifty Opportunists</p>	<p>The Thrifty Opportunists care about supporting local farmers and producers and the local economy, but only when it fits within their budget. They tend to have larger households, buy one or more gallons of milk per week, and buy milk in the gallon size.</p> <p>They value “Fair Trade” milk, but are quite price sensitive and therefore are unlikely to switch unless “Fair Trade” milk is not too much more expensive than the milk they buy now. They are a decent target for “Fair Trade” milk, especially if it is sourced. From farms in their home state. About a third (32%) said they would buy “Fair Trade” milk every time they buy milk.</p>
<p>Organic Diehards</p>	<p>The Organic Diehards, like the Idealists, have strong values. They currently buy organic milk and value organic over all other attributes. They are buying a ½ gallon or more per week, and most buy the ½ gallon size.</p> <p>Organic Diehards tend to be highly educated, high income, and younger than the other segments. They are not very price sensitive, but they want milk that is sourced locally. They probably won’t consider buying “Fair Trade” milk unless it is organic.</p>
<p>Penny Pinchers</p>	<p>For the Penny Pinchers, it’s all about price. They shop for milk more frequently and buy more milk per week than any other segment. They tend to have children and large household sizes, and they are always looking for a deal- the lowest price. They rarely buy organic milk or milk FoAGH.</p> <p>The Penny Pinchers are more likely to be less educated and to live in suburban areas. They probably won’t buy “Fair Trade” milk unless it is the cheapest option.</p>
<p>Routine shoppers</p>	<p>The Routine shoppers are the oldest, least educated, and lowest income segment. They tend to live alone or with other adults in rural areas. They rarely, if ever, buy organic or any other type of specialty milk. They are unlikely candidates for buying “Fair Trade” milk.</p>



Table 9: Significant Differences among segments

Segment Name	Social Stewards	Idealists	Thrifty Opportunists	Organic Diehards	Penny Pinchers	Routine Shoppers
Model Coefficients	<ul style="list-style-type: none"> Value local milk more than others Also value organic, hormone-free milk 	<ul style="list-style-type: none"> Not brand loyal 	<ul style="list-style-type: none"> Value local and organic milk, but price sensitive and brand loyal 	<ul style="list-style-type: none"> Value organic and hormone-free milk the most Also value local milk 	<ul style="list-style-type: none"> Price Sensitive Brand loyal 	<ul style="list-style-type: none"> Somewhat brand loyal
Demographics	<ul style="list-style-type: none"> Rural Female 2 person household 	<ul style="list-style-type: none"> Urban Youngest mean age Live alone Bachelor's Degree Rhode Island, Boston 	<ul style="list-style-type: none"> Suburban Female Children & large household NYC area HHI: \$50-75k 	<ul style="list-style-type: none"> 25-39 year olds Masters Degree or higher Vermont Highest HHI 	<ul style="list-style-type: none"> Suburban Male Children & large household High School grad 	<ul style="list-style-type: none"> Rural Male 60+ years old Live alone Least educated Lowest HHI New York state (outside of NYC), Maine
Milk Purchasing	<ul style="list-style-type: none"> Sometimes buys organic, hormone-free, or specialty/enhanced milk Quart & ½ gallon per week & these sizes Light-block packaging 	<ul style="list-style-type: none"> Usually buys organic, hormone-free, or specialty/enhanced milk ½ gallon size Light-block & Cardboard Carton packaging 	<ul style="list-style-type: none"> Sometimes buys organic, specialty/enhanced milk Light-block packaging 	<ul style="list-style-type: none"> Usually buys organic, hormone-free, or specialty/enhanced milk ½ gallon size Cardboard carton, glass packaging 	<ul style="list-style-type: none"> Shops 2x per week Buys 2, 4, or 5+ gallons Never buys organic, hormone-free milk, or specialty Gallon size Regular plastic packaging 	<ul style="list-style-type: none"> Never buys organic, hormone-free milk, or specialty milk Quart size
Awareness of Fair Trade	<ul style="list-style-type: none"> Aware of FTC products 	<ul style="list-style-type: none"> Aware of FTC products Purchases frequently Extremely important to purchase 	No significant differences	<ul style="list-style-type: none"> Aware of FTC products Purchases frequently Extremely important to purchase 	<ul style="list-style-type: none"> Not aware of FTC products & never purchases 	<ul style="list-style-type: none"> Not aware of FTC products
Local Food Purchases	<ul style="list-style-type: none"> Purchase frequently Extremely important to purchase 	<ul style="list-style-type: none"> Purchase frequently Extremely important to purchase 	<ul style="list-style-type: none"> Occasional purchase Very Important to purchase 	<ul style="list-style-type: none"> Purchase frequently Extremely important to purchase 	<ul style="list-style-type: none"> Rarely purchase Not important to purchase 	<ul style="list-style-type: none"> Purchase frequently Not important to purchase
Perception of “Fair Trade” Milk	<ul style="list-style-type: none"> Purchase for quality, right thing to do, and fair wage for farmer 	<ul style="list-style-type: none"> Purchase because right thing to do, and fair wage for farmer 	<ul style="list-style-type: none"> Purchase for quality, right thing to do, and fair wage for farmer 	<ul style="list-style-type: none"> Purchase to provide fair wage for farmer 	<ul style="list-style-type: none"> Probably won't buy “Fair Trade” milk unless it is the cheapest 	No significant differences



Attitudes	<ul style="list-style-type: none"> Price is not an important factor 	<ul style="list-style-type: none"> Strongly agree with most statements 	<ul style="list-style-type: none"> Agree with most statements 	<ul style="list-style-type: none"> Strongly agree with most statements 	<ul style="list-style-type: none"> Brand loyal 	No significant differences
Point Value Allocation	<ul style="list-style-type: none"> Source Hormone-free Label/Packaging 	<ul style="list-style-type: none"> Organic Hormone-free Source 	<ul style="list-style-type: none"> More points on price, otherwise points evenly distributed 	<ul style="list-style-type: none"> Organic Hormone-free 	<ul style="list-style-type: none"> Brand Source Label/Packaging 	No significant differences

DIFFERENCES AMONG SEGMENTS IN MODEL COEFFICIENTS

The graphs in this section show the zero-based coefficients on the Y (vertical) axis. Coefficients are measured on a utility scale where a larger positive value indicates increased utility (or attractiveness) of the coefficient. The error bars show the 95% confidence interval for each coefficient. Error bars that overlap indicate that there is no significant difference between those coefficients, e.g., for the Penny Pinchers, there is no significant difference between the utility they place on “Comes from farms in your state” and “Comes from farms in the Northeast.”

The Social Stewards place the most value of any segment on milk that is sourced locally, either from farms in their state or farms in the Northeast (Figure 33). The Thrifty Opportunists and the Organic Diehards also value milk sourced from farms in their state.

Figure 33: Differences in utility for source attribute among segments

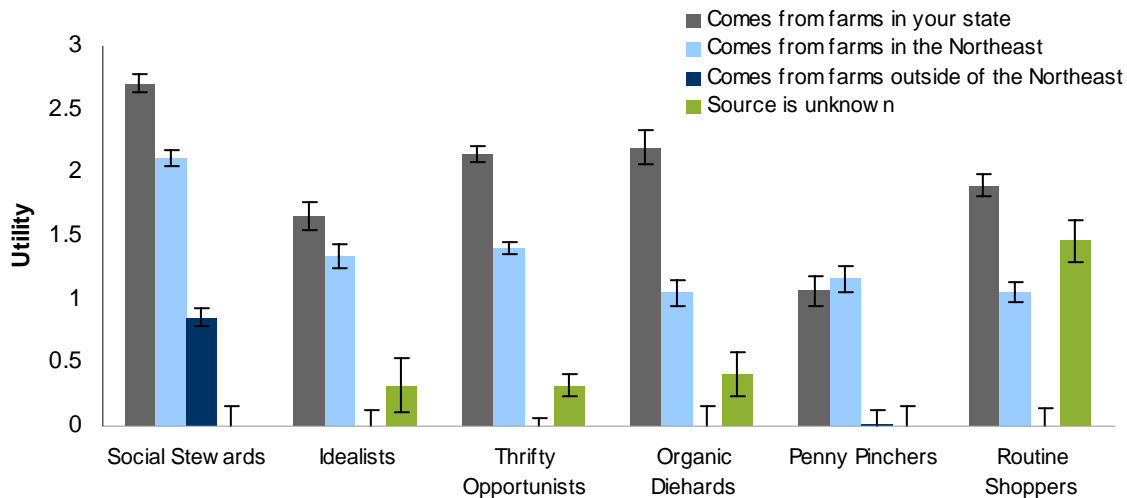
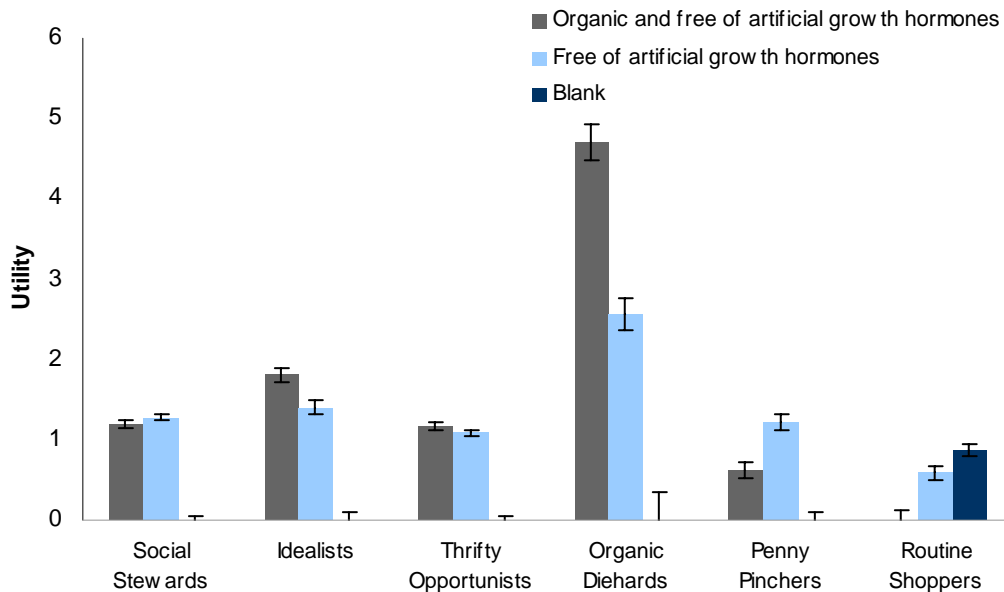


Figure 34 shows the coefficient values for the organic and free of artificial growth hormone status. As implied by the name, the Organic Diehards value the organic attribute over all the other attributes (see coefficient values in Table 7). The Idealists, the other segment whose most recent purchase was organic, also value the organic and FoAGH attributes, but not nearly as highly as the Organic Diehards. The Social Stewards and the Thrifty Opportunists place almost equal value on the organic and FoAGH attributes. The Penny Pinchers and Routine Shoppers place more value on milk FoAGH than on organic milk, and the Routine Shoppers



place little to no value on the organic attribute. Error bars indicate the 95% confidence interval for each coefficient.

Figure 34: Differences in utility for organic/free of artificial growth hormone attributes among segments

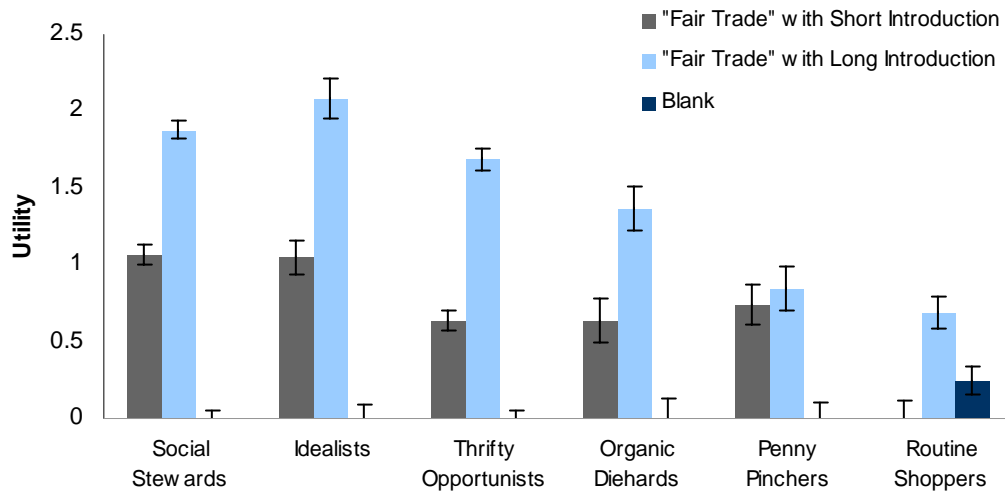


To reflect the split sample design which was used to simulate the impact of educating consumers about “Fair Trade”, the “Fair Trade” attribute was split into two coefficients, one for respondents who viewed the short introduction to the stated preference questions (Figure 3), and one for respondents who viewed the long introduction to the stated preference questions (Figure 4). The long introduction provided respondents with information about how milk is priced and why “Fair Trade” milk is being considered.

For the Social Stewards, the Idealists, the Thrifty Opportunists, and the Organic Diehards, being educated about “Fair Trade” milk (i.e. viewing the long introduction) nearly doubles the value these segments place on the “Fair Trade” attribute (Figure 35). The Social Stewards and the Idealists place the most value on the “Fair Trade” attribute. Routine Shoppers who viewed the short introduction place little to no value on the “Fair Trade” attribute. The Penny Pinchers, for whom price is the deciding factor, are not greatly influenced by the additional information provided in the long introduction. Error bars indicate the 95% confidence interval for each coefficient.

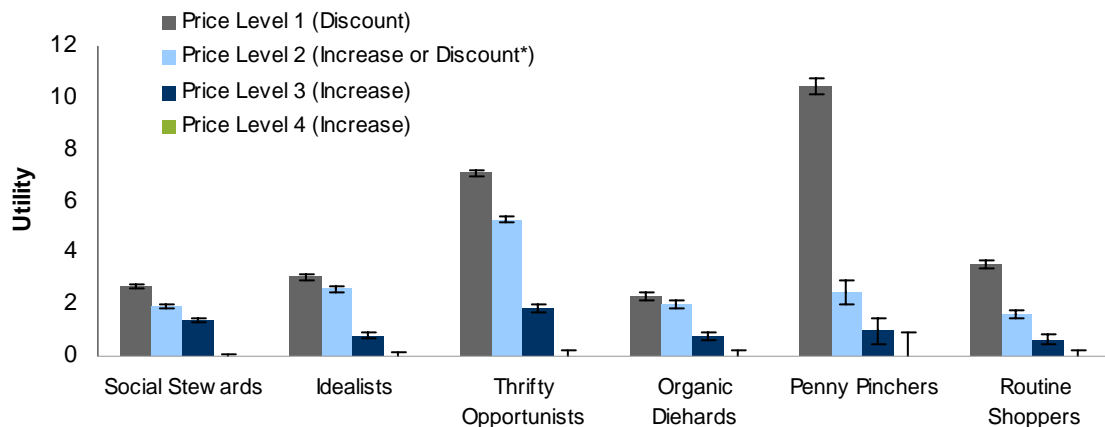


Figure 35: Differences in utility for “Fair Trade” attribute among segments



Considering the price attribute, the Thrifty Opportunists and the Penny Pinchers are the most price sensitive segments. The Penny Pinchers place strong value on discounted prices, as shown by the disproportionately strong coefficient value for Price Level 1 (Figure 36). Of the organic segments, the Idealists are a slightly more price-sensitive than the Organic Diehards. Error bars indicate the 95% confidence interval for each coefficient.

Figure 36: Differences in utility for price attribute among segments



* Price Level 2 was an increase for non-organic segments and a decrease for the two organic segments, the Idealists and the Organic Diehards

Finally, the Penny Pinchers place the most value on the milk they currently purchase, followed by the Thrifty Opportunists and the Routine Shoppers. The Social Stewards, the Idealists, and the Organic Diehards are less



tied to their current purchase, and therefore are more likely to be open to switching to a “Fair Trade” product (see “inertia towards most recently purchased milk in Table 7.)

DEMOGRAPHIC DIFFERENCES AMONG SEGMENTS

All segments have a mix of urban, suburban, and rural residents. The Idealists are slightly more urban than other segments and are more likely to live in the Boston area and in Rhode Island (Figure 37, Figure 38). The Thrifty Opportunists and the Penny Pinchers are more likely to live in suburban areas. The Social Stewards and the Routine Shoppers are more likely than the other segments to live in rural areas. A higher proportion of Organic Diehards live in Vermont than in other states. The Thrifty Opportunists are more likely to live in the New York City area than other segments.

Figure 37: Area of residence by segment

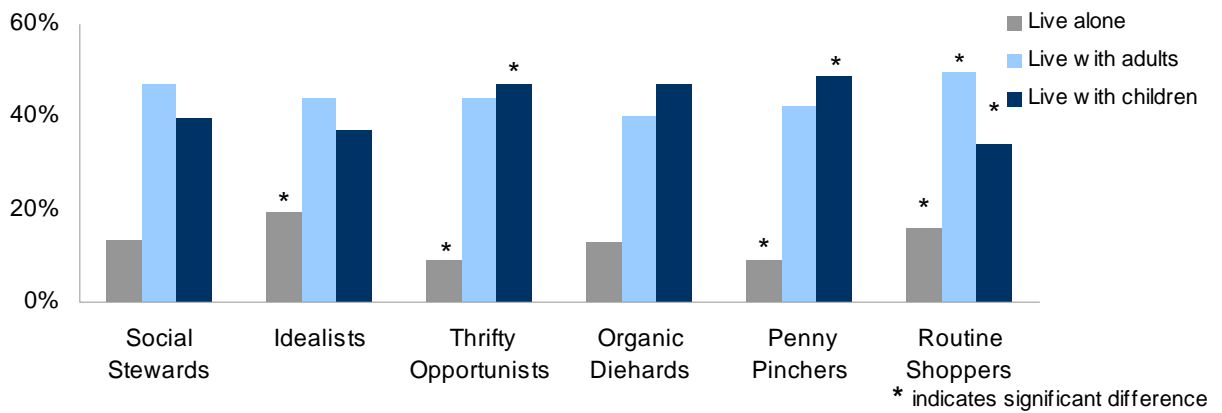
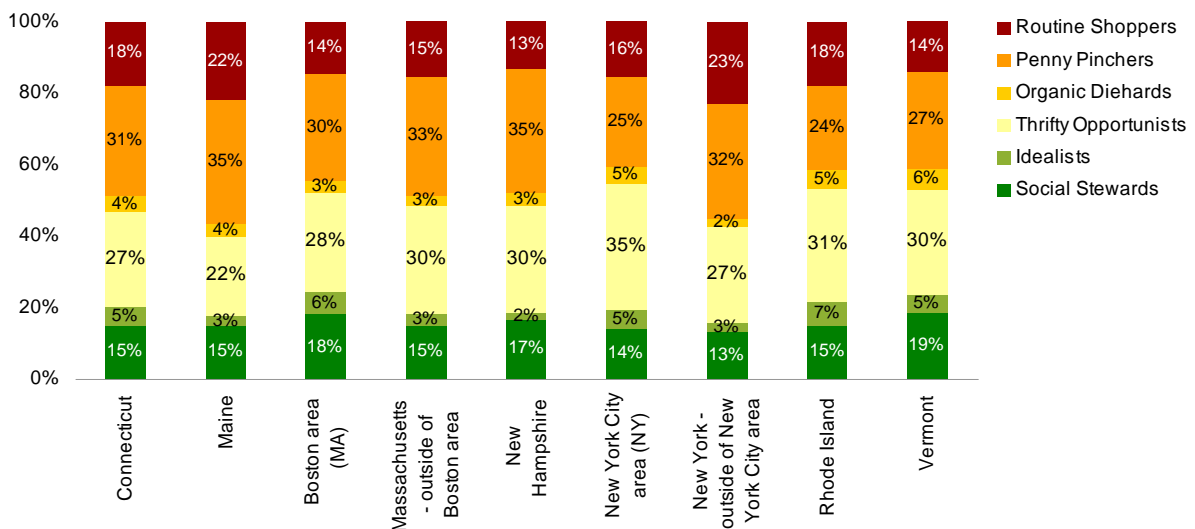
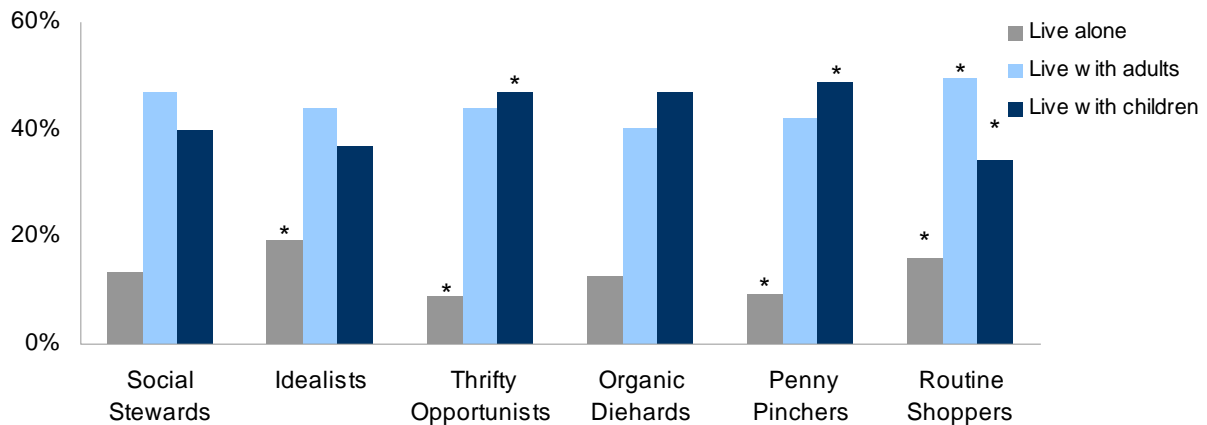


Figure 38: Geographic location by segment



The Thrifty Opportunists and the Penny Pinchers have larger household sizes than the other segments due to the presence of children in the household. The Penny Pinchers have the highest mean household size of all the segments. The Routine Shoppers tend to live alone or with other adults. The Social Stewards are more likely than any other segment to live alone, while the Organic Diehards show a mix of household types, including having children in the household (Figure 39).

Figure 39: Household type by segments



In terms of income and education, the target segments, the Social Stewards and the Idealists are not significantly different than the other segments. The Penny Pinchers and the Routine Shoppers have the lowest mean incomes and education levels, followed closely by the Thrifty Opportunists. The remaining segments have higher incomes and higher levels of education, and the Organic Diehards have the highest incomes and educations of all the segments (Figure 40, Figure 41).

Figure 40: Income across segments

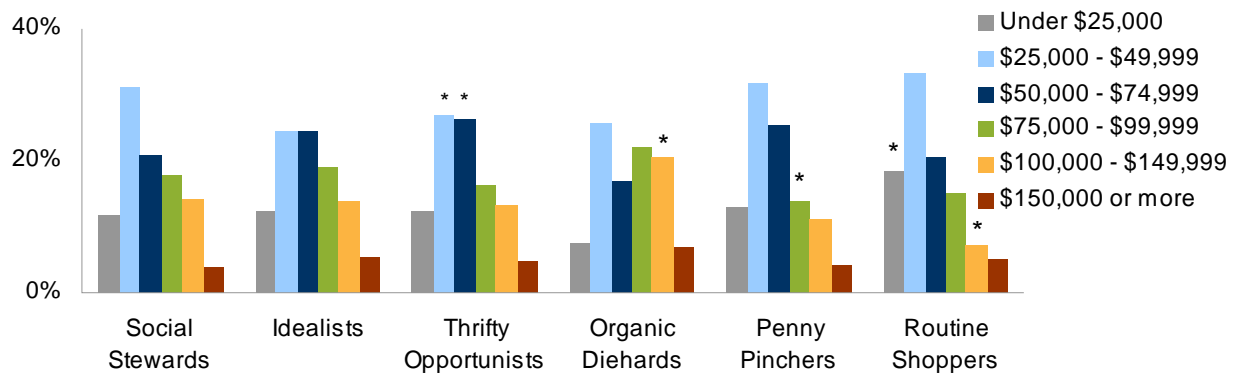
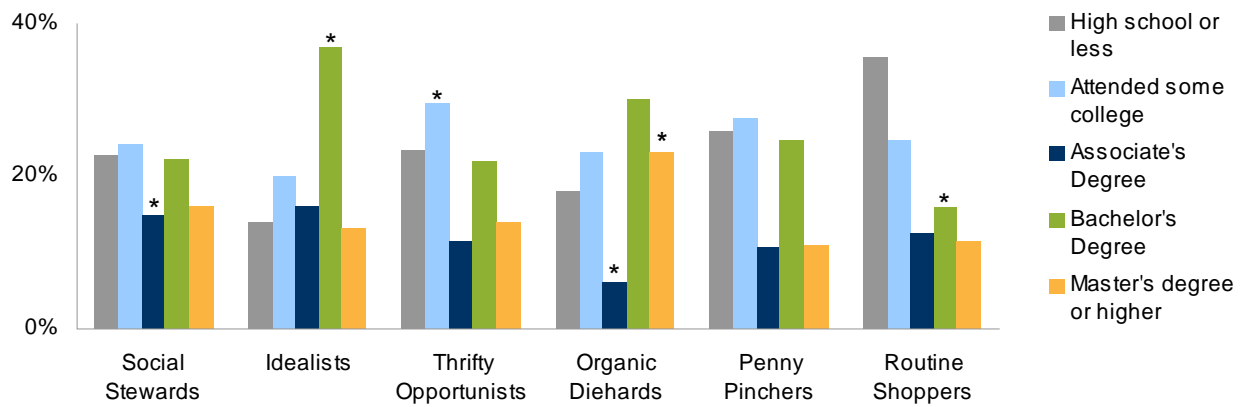
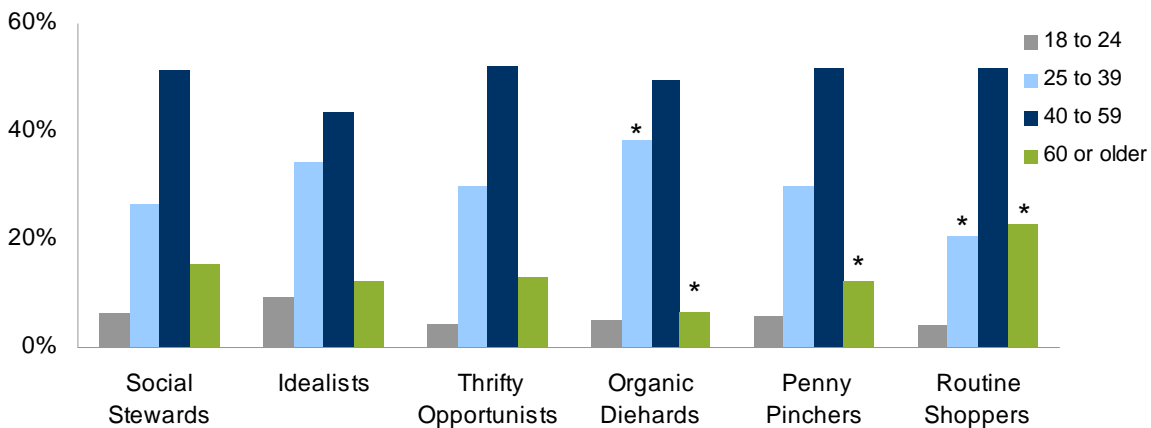


Figure 41: Education across segments



There are few significant differences in age among the segments, however the Routine Shoppers are significantly older than the other segments, and the Organic Diehards are more likely to be 25-39 years old (Figure 42). The Thrifty Opportunists and the Social Stewards are more likely to be female, and the Penny Pinchers and the Routine Shoppers more likely to be male.

Figure 42: Ages of segments

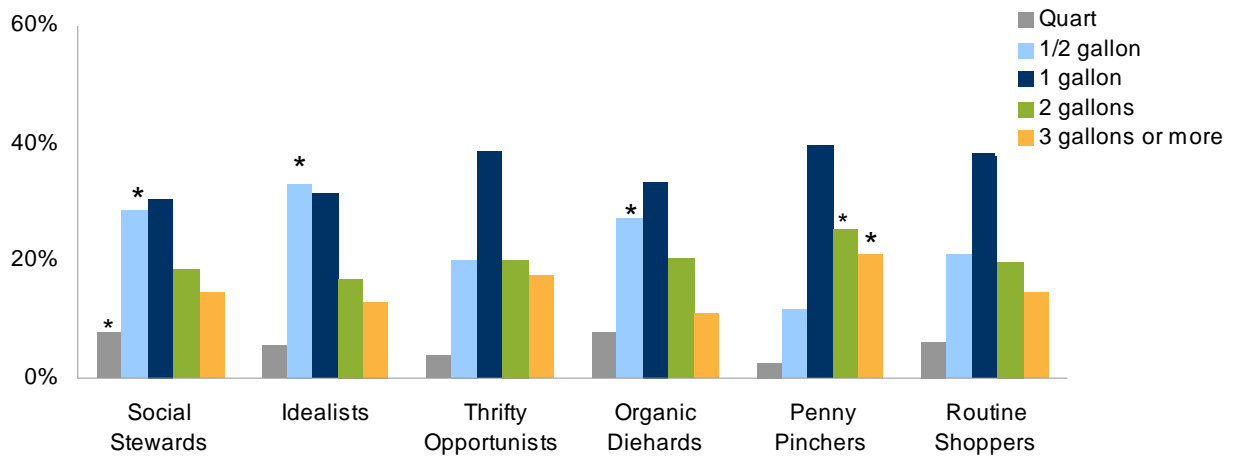


MILK PURCHASING DIFFERENCES AMONG SEGMENTS

The segments with the largest household sizes, the Thrifty Opportunists and the Penny Pinchers, are purchasing the most milk per week. The Penny Pinchers are purchasing significantly more than any of the other segments, and are most likely to be purchasing milk twice a week (Figure 43).

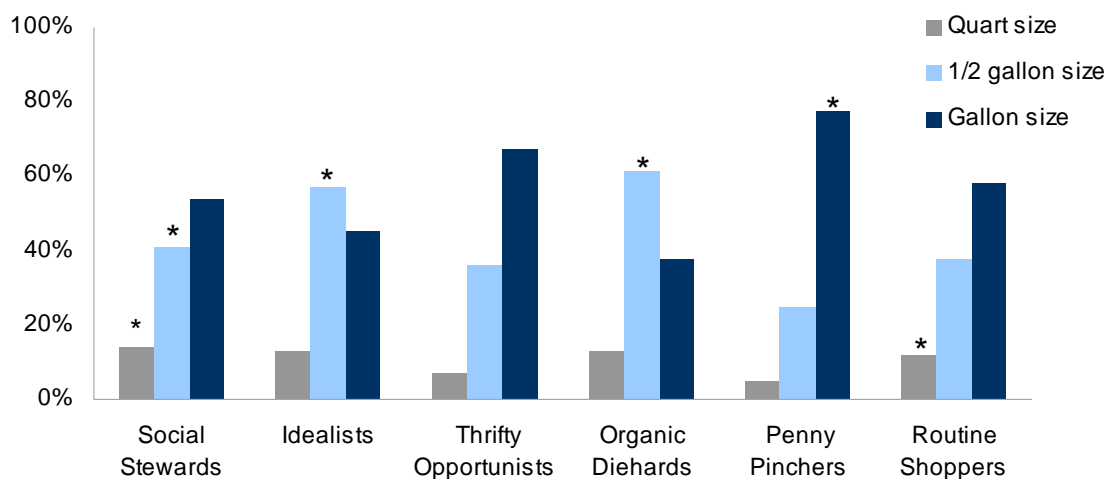


Figure 43: Volume purchased by week pre segment



All segments buy all sizes of milk, but the Penny Pinchers are more likely to buy the gallon size, the Routine Shoppers are more likely to buy milk in the quart size, and the Social Stewards, Idealists, and Organic Diehards are more likely to purchase milk in the half gallon size (Figure 44).

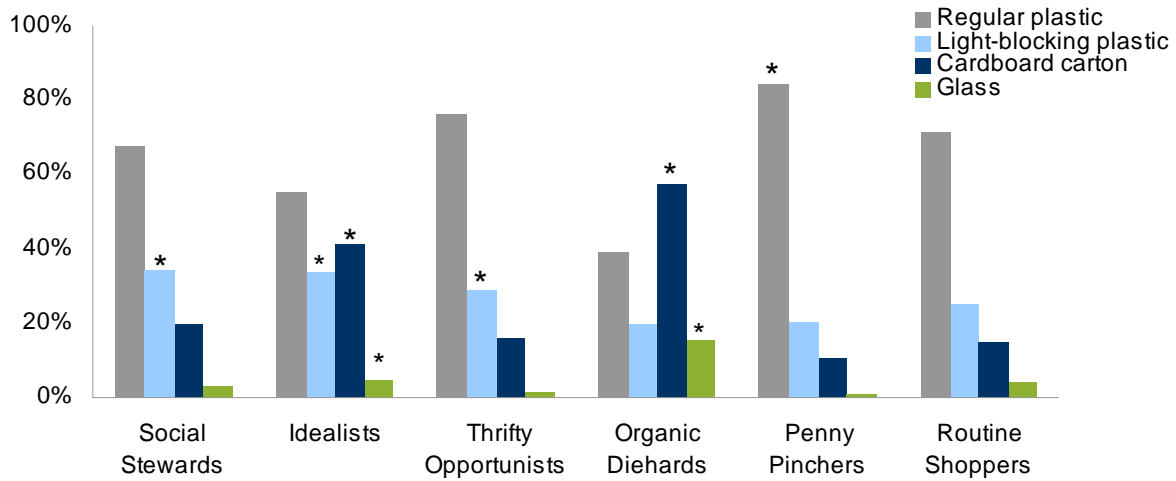
Figure 44: Sizes purchased by segments



All segments except for the Organic Diehards primarily purchase their milk in plastic containers. The two organic segments, the Idealists and the Organic Diehards, are more likely than others to purchase their milk in cardboard cartons or in glass containers (Figure 45).

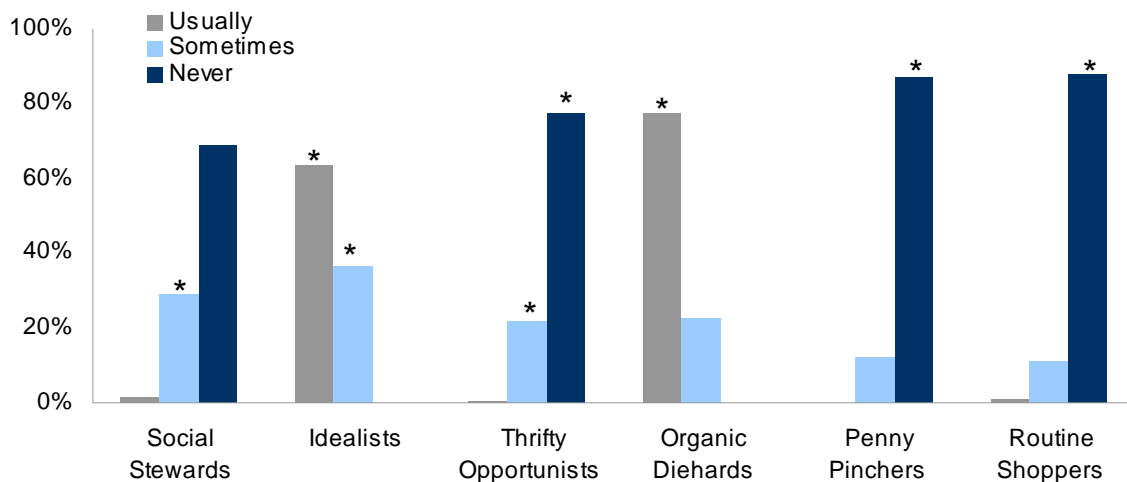


Figure 45: Packaging type by segment



The Penny Pinchers and the Routine Shoppers are most likely to never buy milk with special features. The Thrifty Opportunists and Social Stewards are more likely to sometimes buy organic milk or milk FoAGH. The Idealists and the Organic Diehards, as expected, are significantly more likely than the other segments to usually or sometimes purchase milk with special features.

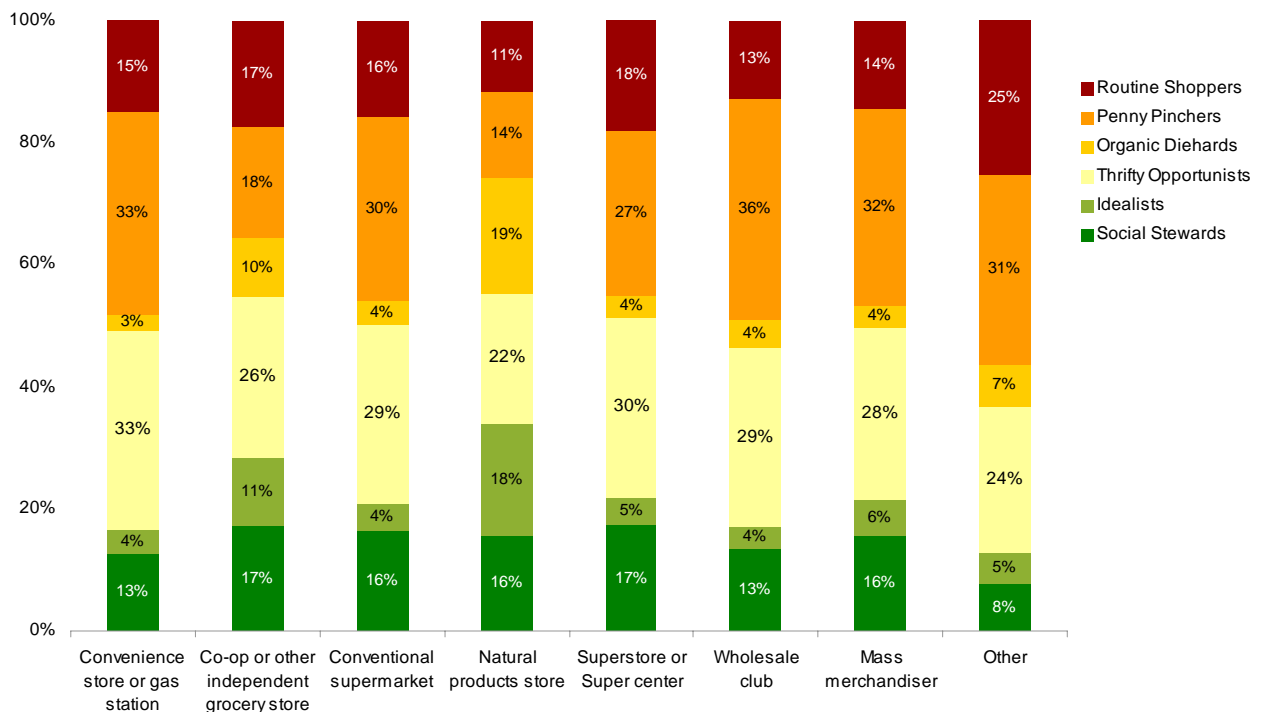
Figure 46: Frequency of purchasing organic milk by segment



The two most cost conscious segments, the Thrifty Opportunists and the Penny Pinchers, are significantly more likely than any of the other segments to buy store brand milk and to buy milk at convenience stores. The Penny Pinchers are also more likely than other segments to shop for milk at wholesale clubs. The Idealists and the Organic Diehards are more likely than other segments to purchase milk at Co-ops or other independent grocery stores and health food stores (Figure 47).



Figure 47: Usual shopping location by segment



DIFFERENCES IN AWARENESS OF FAIR TRADE CERTIFIED™ AMONG SEGMENTS

Among the non-organic segments, the Social Stewards are significantly more likely to have heard of Fair Trade Certified™ products and reported frequently or occasionally buying these products at a higher rate than the other non-organic segments. The Thrifty Opportunists followed the Social Stewards in experience with Fair Trade Certified™ products, though the differences were not significant.

Both organic segments, the Idealists and the Organic Diehards, were significantly more likely to have heard of Fair Trade Certified™ products, report purchasing them frequently, and consider purchasing Fair Trade Certified™ products to be “extremely important.” The Idealists were more likely than any of the other segments to select “It’s the right thing to do” as their reason for purchasing Fair Trade Certified™ products. A summary of significant differences in reasons for purchase of Fair Trade Certified™ products among segments is included in Table 10.



Table 10: Significant differences in reasons for purchase of Fair Trade Certified™ products among segments

NSD=No Significant Differences

	Reasons for Purchase
NSD for Thrifty Opportunists, Penny Pinchers, and Routine Shoppers	
Social Stewards	+Sustainable agricultural practices
Idealists	+Higher quality, living wage, sustainable agricultural practices, “Right” thing to do
Organic Diehards	+Living wage, decent working/living conditions, sustainable agricultural practices

DIFFERENCES IN PURCHASES OF LOCAL FOODS AMONG SEGMENTS

Both the Thrifty Opportunists and the Penny Pinchers reported purchasing local food products occasionally, though the Thrifty Opportunists rated purchasing local food as “very important” while Penny Pinchers rated it only “somewhat,” “not very,” or “not at all” important. The Routine Shoppers and the Social Stewards reported purchasing local food frequently, though the Routine Shoppers considered purchasing local “not at all” important and were more likely than any other segment to choose “Trendy, a popular choice” as the reason for purchasing local. In contrast, the Social Stewards consider purchasing local “extremely” or “very” important.

Both organic segments reported frequently purchasing local food and both consider it “very” or “extremely” important. Significant differences in purchases of local food products among segments are summarized in Table 11.



Table 11: Significant differences in reasons for purchase of local food products among segments

NSD=No Significant Differences

	Reasons for Purchase
Social Stewards	+Know where food comes from, higher quality, fresher, maintain open space, reduce environmental impact, support local economy
Idealists	+Know where food comes from, higher quality, fresher, tastes better, support local farms, maintain open space, reduce environmental impact, “right” thing to do
Thrifty Opportunists	+Know where food comes from, fresher, support local farms, maintain open space, reduce environmental impact, support local economy
Organic Diehards	+Know where food comes from, higher quality, fresher, tastes better, support local farms, maintain open space, reduce environmental impact, “right” thing to do, support local economy
Penny Pinchers	NSD
Routine Shoppers	+Trendy, a popular choice

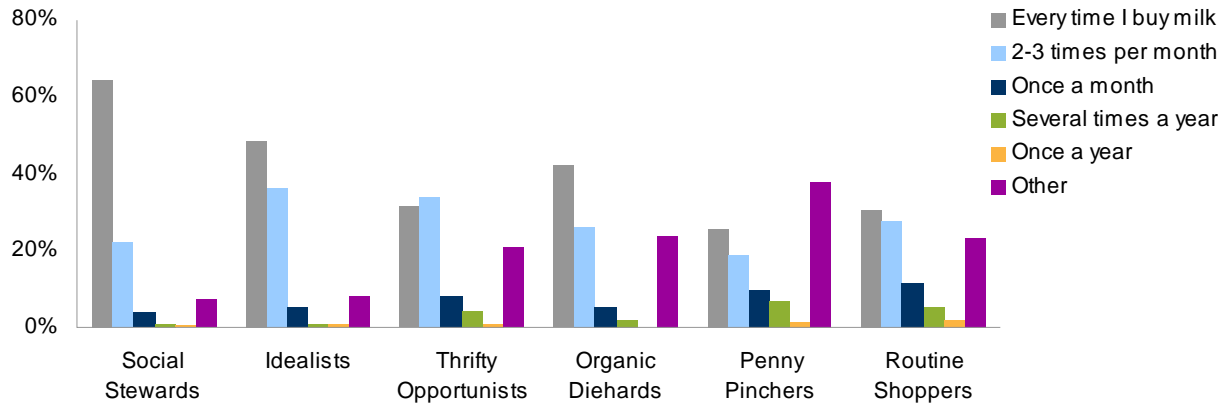
DIFFERENCES IN PERCEPTION OF “FAIR TRADE” MILK AMONG SEGMENTS

Almost all respondents within the Social Stewards (100%), the Idealists (100%), the Thrifty Opportunists (98%), and the Penny Pinchers (97%) chose at least one “Fair Trade” milk option in the stated preference section, while only 33% of the Routine Shoppers and 79% of the Organic Diehards chose a “Fair Trade” option. The Penny Pinchers were significantly more likely than any other segment to choose “Lower price” as their reason for selecting a “Fair Trade” option.

The Social Stewards were more likely than the other non-organic segments to indicate that they would purchase “Fair Trade” milk every time they shop. Almost half (48%) of the Idealists indicated they would purchase “Fair Trade” milk every time they buy milk, and over a third (36%) indicated they would purchase it 2-3 times per month (**Error! Reference source not found.**). Most “other” responses to this question indicated that the anticipated frequency of purchasing “Fair Trade” milk depended on the price.



Figure 48: Anticipated frequency of purchasing “Fair Trade” milk by segment



Respondents were asked to rate their likelihood of purchasing other “Fair Trade” dairy products. The Social Stewards were more likely than other segments to state that they would “definitely purchase” these products. The Thrifty Opportunists and the Penny Pinchers were more likely to indicate that they “might purchase” other “Fair Trade” products.

Significant differences regarding “Fair Trade” milk across segments are summarized in **Error! Not a valid bookmark self-reference..**



Table 12: Significant differences regarding “Fair Trade” milk among segments

NSD=No Significant Differences

	Reasons for selecting “Fair Trade” milk	Anticipated frequency of purchasing “Fair Trade” milk	Interest in other “Fair Trade” dairy products
Social Stewards	+Higher quality, provides farmer a living wage, it’s the “right” thing to do	+Every time I buy milk	+Definitely would purchase any of the products
Idealists	+Provides farmer a living wage, it’s the “right” thing to do	+Every time I buy milk, 2-3x per month	+Definitely would purchase any of the products
Thrifty Opportunists	+Higher quality, provides farmer a living wage, it’s the “right” thing to do	+2-3x per month	+Might purchase any of the products
Organic Diehards	+Provides farmer a living wage	NSD	+Definitely would purchase any of the products
Penny Pinchers	+Lower price	+Once a month, several times a year, Other (depends on price)	+Might purchase ice cream and cheese
Routine Shoppers	+Not sure	NSD	NSD

DIFFERENCES IN ATTITUDINAL STATEMENTS AMONG SEGMENTS

Respondents were asked to rate how strongly they agree or disagree with a series of attitudinal statements covering a range of attitudes toward purchasing products, providing a livable wage to producers, humane treatment of animals, recyclable packaging, and the importance of price when making purchase decisions (Table 13).

Table 13: List of Attitudinal Statements

Scale: Strongly Disagree, Disagree, Neither agree nor disagree, Agree, Strongly Agree
Buying food that is healthy for me is very important to me
It is important to me to support farmers/producers
I wish that more local products were available in my area
I trust that foods with certification labels meet the standards implied by the label
I pay close attention to information included on the label or packaging
I make a strong effort to buy environmentally friendly products



I do my best to select food items that are packaged in recyclable materials
It is important that there is open space in the local areas
I make a strong effort to buy local products
I'm a brand-loyal customer
I try to buy healthier food than what I would normally buy when I am serving it to children
I try to buy products that promise a decent wage to farmers/producers
I'm willing to pay a premium price for high-quality foods
Price is the most important factor when I'm buying food items
I tend to buy food products that come from humanely treated animals
I try to buy organic food whenever it is available

Within the non-organic segments, the Social Stewards were significantly more likely to rate most statements as “strongly agree” or “agree” and the Thrifty Opportunists were significantly more likely than the Penny Pinchers and the Routine Shoppers to “agree” with most statements. The Routine Shoppers were significantly more likely to “strongly agree” with the statement “I’m a brand loyal customer.” The Penny Pinchers were significantly more likely to “strongly agree” with the statement “Price is the most important factor when I’m buying food items” while the Social Stewards were more likely to “disagree” or “strongly disagree” with that statement.

Like the Social Stewards, the Idealists and the Organic Diehards were significantly more likely to “strongly agree” with most statements. Differences between the Idealists and the Organic Diehards include that the Organic Diehards are more likely to “strongly agree” with the statement “I’m a brand loyal customer.”

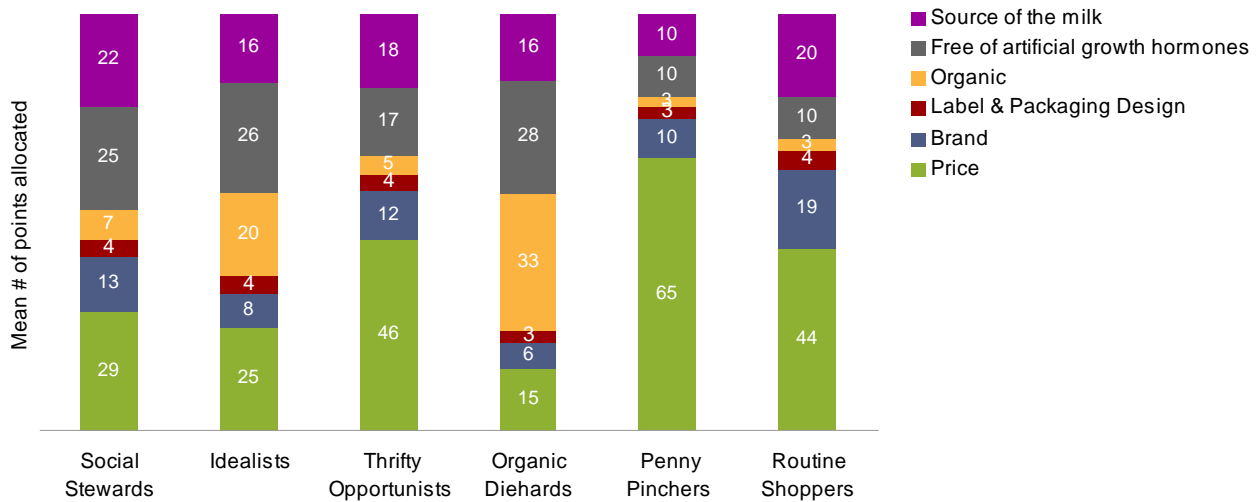
DIFFERENCES IN POINT VALUE ALLOCATION AMONG SEGMENTS

Respondents were asked to allocate points to the importance of price, brand, source of the milk, organic and FoAGH statuses, and label and packaging design when they are buying milk.

The Thrifty Opportunists and the Penny Pinchers allocated the most points to price. The Routine Shoppers were more likely to allocate more points to brand and source than the other segments. The Routine Shoppers and the Social Stewards were more likely to allocate points to source of the milk. The Penny Pinchers and the Routine Shoppers were least likely to allocate points to organic and FoAGH, while The Thrifty Opportunists and the Social Stewards were likely to allocate points to both organic and FoAGH. The Social Stewards were likely to allocate more points to FoAGH than to organic. The Idealists and the Organic Diehards were most likely to allocate points to organic and FoAGH (Figure 49).



Figure 49: Mean points allocated by segment



SALES VOLUME ESTIMATION

Sales volumes for a new “Fair Trade” milk product have been estimated using the most recent milk purchase data from the survey and the latent choice models estimated using the stated preference information collected in the survey. This section of the report describes the approach used and assumptions made to produce these volume estimates, and presents forecasts of volumes and revenues for a range of product specifications and pricing scenarios. A revenue maximizing product specification and price point, in terms of maximizing the incremental revenue from the “Fair Trade” premium over the base price (current sale price), is recommended.

APPROACH

The sales volumes and revenues for a new “Fair Trade” milk product were estimated by simulating the most recent purchase made by respondents to the survey, but with the addition of the new product into the set of milks that they chose from.

This most recent purchase made by each respondent in the sample represents some part of the total volume of milk purchased by the population of the study region each week. How much each respondent’s purchase represents was estimated based on the number of milk buying households in the different parts of the study region. This meant that the likely purchases of the new “Fair Trade” milk product made by the sample could be expanded to likely purchases made by the full population of milk buyers.

The latent choice models estimated using the survey data were used as the basis for the purchase simulation. The models were estimated using data from a choice context where respondents were asked to choose between their most recent purchase and two other milks with the same fat content and package size, but varying prices, sources, and organic/FoAGH status.



This choice context was retained in the simulation. Based on their most recent purchases, respondents were divided into 12 markets, defined as the 12 combinations of three package sizes and four fat contents. Within each market, a choice set of nine existing products was defined, for each combination of three milk sources and three organic/FoAGH statuses.

The current situation (i.e. without the addition of any new products) was simulated first. Each respondent was allowed to choose between the nine products in their package size/fat content market. Using the latent choice models, the probability that each respondent had of choosing each product was calculated. By converting this probability to a likely weekly volume for each product, and summing the results for all respondents, a simulated volume for each product was derived. Small adjustments were made to the simulation to calibrate it so that the simulated volumes for each product matched exactly with actual current volumes.

A new “Fair Trade” milk product was then added into each of the 12 markets, making 10 products that each respondent now had to choose between. Depending on the price, source, and organic/FoAGH status of this new milk, the probability that each respondent would buy the new milk varied. A series of price points were tested for each combination of source and organic/FoAGH status that the new milk might have. For each of the possible specifications of the new milk, volumes and revenues were calculated to allow a recommendation to be made for the price, source, and organic/FoAGH status.

The next few paragraphs highlight some of the assumptions made and tabulate various inputs used during each step of the forecasting process. This is followed by results and recommendations.

CURRENT MILK PURCHASING BEHAVIOR IN THE SAMPLE

Data were collected in the survey about two types of purchases: the most recent milk purchase made by the respondent and the typical purchase made by the respondent. Table 14 is a matrix comparing most recent purchases and typical purchases for each fat content and package size combination. The table shows that there is relatively little deviation between the two purchases.



Table 14: Comparison of most recently purchased milk and milk usually purchased

Type of milk usually purchased		Type of milk most recently purchased											
		Quart				Half Gallon				Gallon			
		Whole	2%	1%	Skim	Whole	2%	1%	Skim	Whole	2%	1%	Skim
Quart	Whole	76%	6%	5%	0%	3%	1%	1%	0%	0%	0%	0%	0%
	2%	3%	78%	8%	0%	1%	2%	0%	0%	0%	0%	0%	0%
	1%	0%	0%	75%	3%	0%	0%	1%	1%	0%	0%	1%	0%
	Skim	0%	0%	3%	92%	0%	1%	1%	3%	0%	0%	0%	0%
Half Gallon	Whole	7%	0%	0%	0%	82%	6%	2%	0%	4%	2%	0%	1%
	2%	0%	13%	0%	0%	4%	79%	5%	1%	2%	6%	1%	0%
	1%	0%	0%	8%	0%	1%	5%	81%	2%	0%	1%	3%	1%
	Skim	3%	0%	0%	5%	1%	1%	4%	88%	0%	0%	0%	4%
Gallon	Whole	7%	3%	3%	0%	7%	3%	1%	0%	85%	8%	2%	1%
	2%	3%	0%	0%	0%	1%	3%	1%	1%	6%	81%	3%	1%
	1%	0%	0%	0%	0%	1%	1%	3%	0%	1%	3%	87%	3%
	Skim	0%	0%	0%	0%	1%	0%	1%	5%	1%	0%	3%	89%

The choice context of the stated preference experiments presented in the survey asked respondents to trade-off between alternative milks of the same fat content and package size, i.e. it was assumed that they would not (under circumstances where milk was available in the size and fat content that they preferred) switch to another size or fat content. This assumption was retained in the volume estimation.

Respondents were assigned to one of the 12 fat content and package size combination categories based on their most recent purchase and it was assumed that they only choose between products with that same fat content and package size. Table 15 shows the proportion of respondents in the sample that fell into each of the 12 categories. Table 16 shows the proportion weighted by volume of milk purchased each week by each respondent. Over 60% of respondents purchase milk in gallon packages, with a relatively even distribution across the four fat content categories. Once the purchases are weighted by weekly volume, gallons account for almost 80% of the weekly volume, and the proportion of the market for skim drops below 20%.

Table 15: Proportion of respondents by fat content and package size of most recent purchase

Fat Content	Package Size			Total
	Quart	Half Gallon	Gallon	
Whole	1.83%	6.62%	15.85%	24.30%
2%	1.59%	8.99%	15.44%	26.03%
1%	1.80%	8.01%	18.32%	28.13%
Skim	1.87%	8.28%	11.40%	21.55%
Total	7.09%	31.90%	61.01%	100.00%



Table 16: Proportion of weekly milk volume purchased by respondents by fat content and package size

Fat Content	Package Size			Total
	Quart	Half Gallon	Gallon	
Whole	0.69%	4.08%	21.06%	25.83%
2%	0.61%	5.31%	20.53%	26.45%
1%	0.64%	4.49%	23.23%	28.36%
Skim	0.78%	4.96%	13.63%	19.36%
Total	2.72%	18.85%	78.44%	100.00%

MILK BUYERS AS A PROPORTION OF THE POPULATION

In order to weight choices made by respondents to the survey (the sample) up to choices made by all residents in the study region (the population), it was necessary to identify the proportion of households in the study region that consume milk. Data from the screening questions at the beginning of the survey were used to do this. Respondents were screened to ensure that they were members of a household that purchases at least a quart of milk at least once a week. The proportion of respondents who met these criteria was used as the proportion of milk consuming households. Overall, 63% of respondents were from milk consuming households.

The number of households in each state was obtained from 2000 Census data. Multiplying total households by the proportion of milk consuming households gives the total number of milk consuming households in each state. The ratio of milk consuming households and households in the sample is then the weight, which is the number of households that each respondent in the sample represents. These calculations are shown in Table 17. The calculations show that there are 7.5 million milk consuming households in the study region and that, on average, each respondent in the sample represents 2,563 households.

Table 17: Calculation of proportion of milk buying households and sample weights by state

State	Potential Respondents (a)	Respondents meeting screening criteria (b)	Proportion of milk drinking households (c=a/b)	Total Households (d)	Milk Drinking Households (e=c*d)	Weight (f=e/b)
Connecticut	682	402	59%	1,323,838	780,327	1,941
Maine	451	301	67%	542,158	361,839	1,202
Massachusetts	1,187	705	59%	2,448,032	1,453,970	2,062
New Hampshire	466	301	65%	497,054	321,058	1,067
New York	1,016	600	59%	7,114,431	4,201,436	7,002
Rhode Island	387	229	59%	406,089	240,296	1,049
Vermont	522	409	78%	248,825	194,961	477
Total	4,711	2,947	63%	12,580,427	7,553,887	2,563



MARKET SIZE: EXPANSION TO TOTAL WEEKLY MILK VOLUME IN THE STUDY REGION

The final step in sizing the market, in terms of total weekly milk volume purchased in the study region, is straightforward. Each respondent has a weight, showing how many households they represent, and a weekly volume of milk that they purchase. The total volume of milk purchases that the respondent represents is their weight multiplied by their weekly volume of purchases, as shown in Table 18. The total weekly market for milk in the study region is 11,277,456 gallons.

Table 18: Calculation of market size in gallons of milk per week by state

State	Respondents (a)	Volume in gallons per week (b)	Volume per respondent (c=b/a)	Weight (d)	Market Volume (e=b*d)
Connecticut	402	558.25	1.39	1,941	1,083,625
Maine	301	499.25	1.66	1,202	600,160
Massachusetts	705	1098.25	1.56	2,062	2,264,997
New Hampshire	301	490.75	1.63	1,067	523,453
New York	600	872.5	1.45	7,002	6,109,588
Rhode Island	229	365.5	1.60	1,049	383,529
Vermont	409	654.75	1.60	477	312,104
Total	2,947	4539.25	1.54	2,563	11,277,456

CALIBRATION TO EXISTING SALES VOLUMES

Within each of the 12 fat content and package size markets, nine products were defined for each combination of the three milk sources and the three organic/FoAGH statuses tested in the survey. The existing sales volumes for each of these 108 existing products were estimated using the most recent purchases described by respondents. Table 19 shows the share of the total market (in terms of volume) that each product currently holds.



Table 19: Existing sales volumes as a proportion of the total market

Package Size and Fat Content		Source of Milk and Organic/FoAGH Status									Total
		Local			Regional			National			
		Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular	
Quart	Whole	0.01%	0.00%	0.16%	0.03%	0.05%	0.20%	0.13%	0.13%	0.15%	0.9%
	2%	0.00%	0.07%	0.32%	0.03%	0.02%	0.20%	0.03%	0.05%	0.14%	0.9%
	1%	0.04%	0.00%	0.11%	0.01%	0.01%	0.10%	0.01%	0.13%	0.14%	0.6%
	Skim	0.06%	0.03%	0.38%	0.00%	0.01%	0.24%	0.00%	0.00%	0.33%	1.1%
Half Gallon	Whole	0.09%	0.28%	0.95%	0.22%	0.10%	1.29%	0.14%	0.12%	1.14%	4.3%
	2%	0.04%	0.35%	2.00%	0.45%	0.24%	1.28%	0.42%	0.09%	1.73%	6.6%
	1%	0.12%	0.51%	1.28%	0.15%	0.44%	0.99%	0.05%	0.05%	1.34%	4.9%
	Skim	0.26%	0.11%	1.19%	0.87%	0.54%	1.45%	0.05%	0.22%	1.73%	6.4%
Gallon	Whole	0.50%	1.01%	4.71%	0.36%	1.10%	4.90%	0.51%	0.93%	5.63%	19.6%
	2%	0.32%	0.82%	5.59%	0.56%	0.95%	5.39%	0.36%	0.93%	7.79%	22.7%
	1%	0.09%	0.74%	5.42%	0.15%	1.17%	4.47%	0.11%	0.70%	6.46%	19.3%
	Skim	0.21%	0.47%	3.55%	0.50%	1.17%	2.83%	0.17%	0.17%	3.71%	12.8%
Total		1.7%	4.4%	25.7%	3.3%	5.8%	23.3%	2.0%	3.5%	30.3%	100.0%

NB: products with over 1% of the market are shaded

The first step of the simulation was to calibrate the simulation to match these existing volumes. The simulation was run with the pricing shown in Table 20 (held constant across the four fat contents within each combination of package size, source and organic/FoAGH status). Small adjustments were then made to account for discrepancies between simulated and existing volumes until the simulation matched the existing volumes.

Table 20: Pricing used for existing products

Package Size	Source of Milk and Organic/FoAGH Status								
	Local			Regional			National		
	Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular
Quart	\$2.10	\$1.52	\$1.40	\$2.00	\$1.42	\$1.30	\$1.90	\$1.32	\$1.20
Half Gallon	\$3.50	\$2.53	\$2.33	\$3.34	\$2.37	\$2.17	\$3.17	\$2.20	\$2.00
Gallon	\$5.25	\$3.80	\$3.50	\$5.00	\$3.55	\$3.25	\$4.75	\$3.30	\$3.00

VOLUMES ESTIMATES FOR NEW “FAIR TRADE” PRODUCT

A new “Fair Trade” milk product was added in to each of the 12 fat content and package size markets. Sales volumes were estimated for the new product with it described in turn by each of the nine combinations of



source and organic/FoAGH status. Scenarios were run for a series of price points from 20 cents per gallon less than the equivalent non-fair trade milk to one dollar per gallon more. Sales volumes and revenue presented in this report assume that the product is available to all milk purchasers, i.e. it is placed in all stores where milk is sold.

Table 21 shows the shares that the new “Fair Trade” milk product is forecast to achieve based on each variation of source and organic/FoAGH status. Table 22 converts the shares to weekly volumes. The tables show that the largest shares are won by the mass market products, Regional/Regular and National/Regular, at the lowest price premium levels. At higher price premium levels, higher value products, such as Local/FoAGH and Regional/FoAGH achieve the highest shares. No product gains a share of the market over 2% once the price premium exceeds 60 cents per gallon.

The tables also show that organic “Fair Trade” milk does not achieve a very large overall market share. It gains some part of the (relatively) small organic market, but only a very small part of the current non-organic market.

Table 21: Estimated share of volume for “Fair Trade” products at a series of price premiums

Price Premium (per gallon)	Source of Milk and Organic/FoAGH Status								
	Local			Regional			National		
	Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular
\$0.00	0.61%	8.45%	9.74%	0.62%	11.70%	23.82%	0.30%	16.30%	26.84%
\$0.20	0.33%	4.72%	4.65%	0.36%	6.33%	7.05%	0.22%	5.02%	12.35%
\$0.40	0.19%	2.71%	2.13%	0.18%	3.19%	3.14%	0.12%	2.36%	2.63%
\$0.60	0.15%	2.13%	1.51%	0.13%	2.41%	1.87%	0.08%	1.15%	1.29%
\$0.80	0.12%	1.45%	0.81%	0.08%	1.47%	0.95%	0.04%	0.85%	0.61%
\$1.00	0.09%	0.86%	0.49%	0.06%	0.93%	0.50%	0.02%	0.47%	0.30%

NB: products with over 2% of the market are shaded



Table 22: Volume estimates in 1000's of gallons per week for “Fair Trade” products at a series of price premiums

Price Premium (per gallon)	Source of Milk and Organic/FoAGH Status								
	Local			Regional			National		
	Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular
\$0.00	69	953	1,098	70	1,320	2,686	34	1,838	3,027
\$0.20	37	532	524	41	714	796	24	566	1,392
\$0.40	22	306	241	21	359	354	14	266	297
\$0.60	17	240	171	15	272	211	9	129	145
\$0.80	14	163	91	9	166	107	5	95	69
\$1.00	11	96	56	7	105	56	3	53	34

NB: products with over 2% of the market are shaded; units of volumes are 1000's gallons per week

REVENUE ESTIMATES FOR A NEW “FAIR TRADE” PRODUCT

Total revenue can be estimated using a simple approach of forecast volume multiplied by price per gallon. This slightly underestimates revenue given that approximately 20% of the sales across the market are made in smaller package sizes at a slightly higher equivalent cost per gallon.

Table 23 shows that estimated weekly revenues for the new product, assuming placement in stores throughout the study region. With a price premium in the 40 – 60 cent range, total weekly sales revenue could reach \$1 - \$1.5 million.

Table 23: Revenue estimates in \$1000's per week for “Fair Trade” products at a series of price premiums

Price Premium (per gallon)	Source of Milk and Organic/FoAGH Status								
	Local			Regional			National		
	Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular
\$0.00	\$363	\$3,621	\$3,845	\$352	\$4,685	\$8,729	\$161	\$6,064	\$9,080
\$0.20	\$202	\$2,130	\$1,940	\$213	\$2,676	\$2,745	\$121	\$1,982	\$4,455
\$0.40	\$123	\$1,285	\$938	\$112	\$1,420	\$1,291	\$70	\$983	\$1,010
\$0.60	\$100	\$1,057	\$699	\$82	\$1,130	\$812	\$46	\$504	\$523
\$0.80	\$81	\$750	\$392	\$50	\$723	\$433	\$26	\$391	\$262
\$1.00	\$66	\$463	\$250	\$40	\$476	\$239	\$16	\$228	\$135

NB: products with over 2% of the market are shaded; units of revenue are \$1000's per week

The “Fair Trade” product’s incremental or additional revenue is the total value of the price premium, the additional price of the product on top of the price for an otherwise similar non-”Fair Trade” milk.

Table 24 shows that, for the product types that achieve a reasonable market share, incremental revenue of \$120,000 to \$280,000 per week could be reached. For the less expensive products such as National/Regular



and Regional/Regular, incremental revenue is maximized when the price premium is low, at 10 - 20 cents per gallon and then reduces relatively quickly as the price premium is increased. For the higher value products, such as Local/FoAGH and Regional/FoAGH, incremental revenue is maximized for a price premium between 30 and 60 cents per gallon, and reduces relatively slowly as the price premium is increased further.

Table 24: Incremental revenue estimates in \$1000's per week for “Fair Trade” products at a series of price premiums

Price Premium (per gallon)	Source of Milk and Organic/FoAGH Status								
	Local			Regional			National		
	Organic	FoAGH	Regular	Organic	FoAGH	Regular	Organic	FoAGH	Regular
\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0.10	\$5	\$63	\$81	\$6	\$89	\$172	\$3	\$79	\$217
\$0.20	\$7	\$106	\$105	\$8	\$143	\$159	\$5	\$113	\$278
\$0.30	\$9	\$140	\$121	\$9	\$170	\$166	\$6	\$121	\$232
\$0.40	\$9	\$122	\$96	\$8	\$144	\$142	\$5	\$106	\$119
\$0.50	\$10	\$139	\$99	\$9	\$159	\$138	\$6	\$103	\$104
\$0.60	\$10	\$144	\$102	\$9	\$163	\$127	\$5	\$78	\$87
\$0.70	\$11	\$125	\$71	\$7	\$126	\$86	\$4	\$76	\$64
\$0.80	\$11	\$130	\$73	\$7	\$133	\$86	\$4	\$76	\$55
\$0.90	\$11	\$104	\$70	\$7	\$111	\$81	\$3	\$53	\$37
\$1.00	\$11	\$96	\$56	\$7	\$105	\$56	\$3	\$53	\$34

NB: products with over 2% of the market are shaded; units of revenue are \$1000's per week

VOLUMES AND REVENUES BY SEGMENT AND REGION

The segments that were found to have strong preferences towards “Fair Trade” milk make most of the purchases of the new product according to the results of the simulation. Figure 50 plots the share of the total weekly revenue for a local, FoAGH product by segment for different price premiums. Once the price being tested exceeds the non-“Fair Trade” price until a price premium of 90 cents is reached, Social Stewards account for the largest part of the purchases. Revenue from Thrifty Opportunists becomes very small as the price premium increases. The share of the revenue from Idealists grows as the price premium increases, until they become the majority purchasers at a price premium of 90 cents per gallon.



Figure 50: Revenue by segment for local/FoAGH “Fair Trade” milk

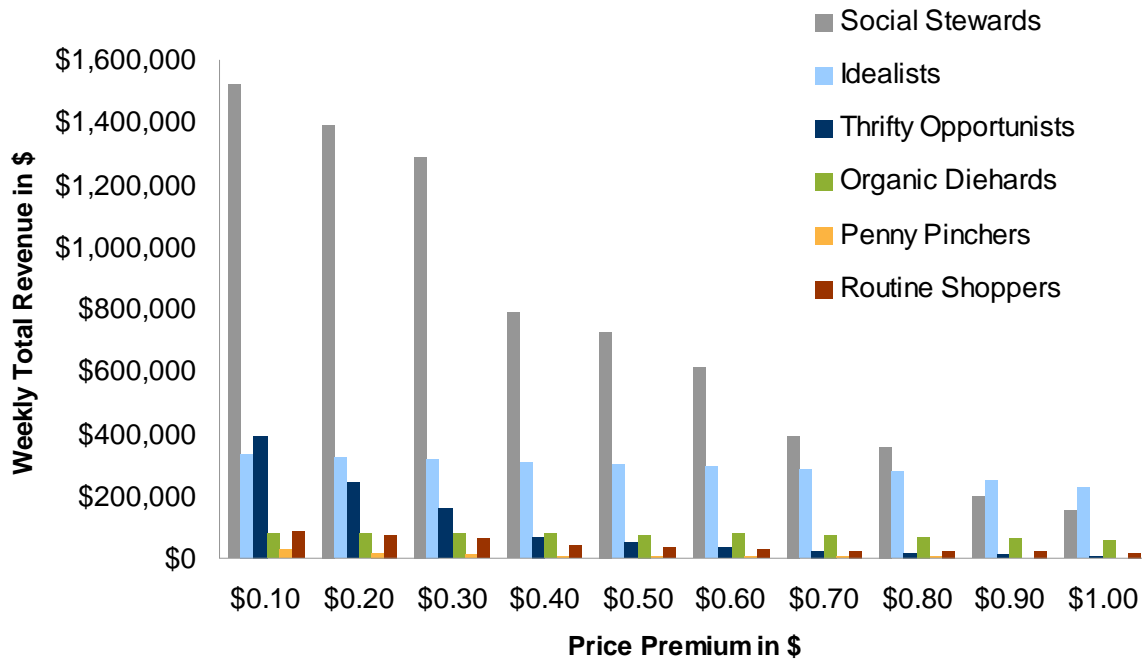
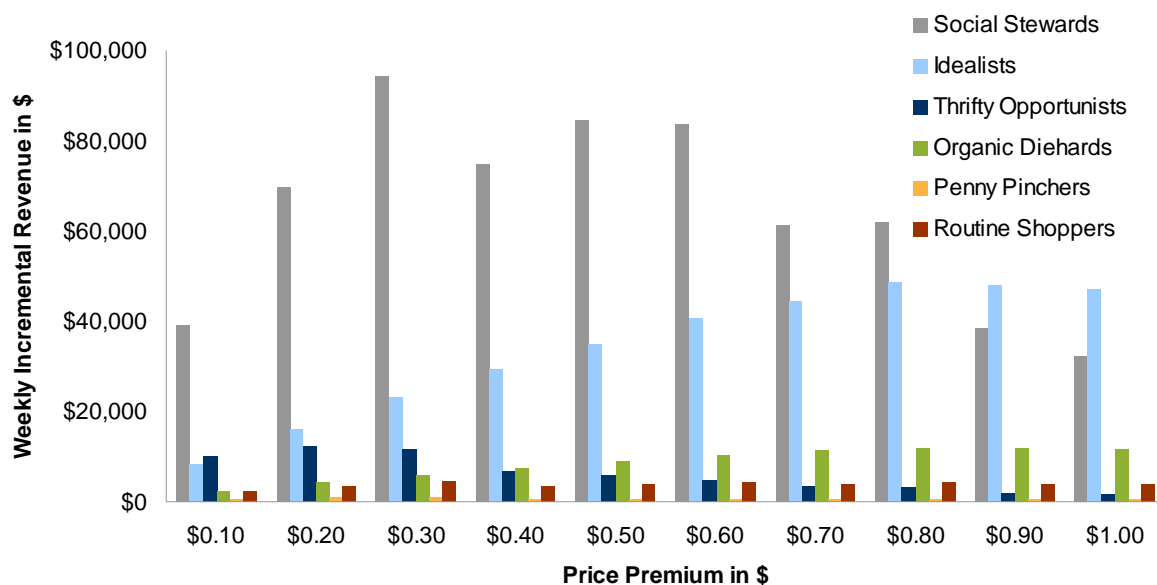


Figure 51 shows the incremental revenue for the same product by segment. At lower price premiums, almost all of the extra revenue comes from Social Stewards, with Idealists contributing more to the incremental revenue at higher price premiums. A similar pattern in revenue by segment can be seen for the other higher value product that performed well in the simulation, a Regional/FoAGH milk.



Figure 51: Incremental revenue by segment for Local/FoAGH “Fair Trade” milk



In addition to significant variation in volumes and revenues by segment, there are some (much smaller) variations in revenue and revenue maximizing price points by region. Table 25 shows that residents of Connecticut, Maine, Massachusetts (Boston), Rhode Island and Vermont are slightly more willing to pay for the “Fair Trade” product than New York, New Hampshire and Massachusetts (outside Boston) residents.

Table 25: Incremental revenue by region for Local/FoAGH “Fair Trade” milk

Price Premium (per gallon)	Connecticut	Maine	MA - Boston	MA – outside Boston	New Hampshire	NY – New York City	NY – outside NYC	Rhode Island	Vermont
\$0.00	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
\$0.10	\$7.1	\$3.7	\$8.7	\$5.8	\$3.3	\$14.7	\$15.8	\$2.2	\$1.5
\$0.20	\$12.9	\$5.5	\$15.1	\$9.8	\$5.4	\$25.0	\$26.7	\$3.8	\$2.4
\$0.30	\$17.9	\$7.4	\$20.7	\$13.3	\$7.5	\$31.7	\$33.6	\$5.2	\$3.2
\$0.40	\$14.7	\$7.2	\$17.4	\$10.4	\$5.7	\$28.9	\$30.1	\$5.2	\$2.9
\$0.50	\$16.8	\$8.3	\$19.8	\$11.8	\$6.5	\$32.4	\$33.7	\$6.0	\$3.3
\$0.60	\$18.7	\$8.8	\$21.3	\$12.9	\$7.1	\$31.0	\$34.0	\$6.7	\$3.6
\$0.70	\$14.7	\$8.6	\$17.7	\$10.0	\$4.8	\$27.2	\$33.0	\$6.0	\$3.0
\$0.80	\$15.6	\$9.1	\$18.5	\$10.8	\$5.0	\$27.6	\$34.3	\$6.4	\$3.1
\$0.90	\$13.0	\$7.9	\$13.5	\$9.2	\$4.1	\$26.4	\$21.4	\$6.0	\$2.9
\$1.00	\$12.0	\$5.4	\$12.9	\$8.6	\$3.9	\$25.0	\$20.8	\$5.5	\$2.3

NB: revenue maximizing price level for each state is shaded, units of revenue are \$1000's per week



SUMMARY: RECOMMENDED PRODUCT SPECIFICATION AND PRICE POINT

The sales volume estimation has demonstrated that a significant market exists for a new “Fair Trade” milk product. The results presented above show that several product specifications would result in a share of the market in the study region in excess of 2% even with a significant “Fair Trade” price premium added to the price of the product.

Of the products tested, the recommended specification to maximize extra revenue that could be passed back to farmers is either locally sourced FoAGH milk or regionally sourced FoAGH milk. While a less expensive product specification (nationally sourced milk, not FoAGH) was found to gain the highest market share, this product generates relatively small amounts of extra revenue per gallon, and as the price premium is increased its market share falls very rapidly. The two recommended products appeal strongly to the target segments identified in this research, and the forecasts for extra revenue are stable across a relatively wide range of price premiums. For both products, extra revenue is maximized with a price premium in the range of 30 cents to 60 cents per gallon above a similar non-“Fair Trade” product.

