

**Consumers' Demand for Local Food Products:  
An investigation into the power of label information**

A Project Paper

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## **ABSTRACT**

The local food movement continues to grow as consumers around the world become increasingly conscientious about where their foods come from. While it has been observed that consumers are willing to pay higher prices for local food products, the reasons driving the premium are not fully understood. The purpose of this research project is to investigate how different locally-related marketing messages and different product-origin information influence consumers' valuation of locally-produced food products. To do this, we employ an incentive-compatible experiment designed to measure participants' willingness-to-pay (WTP) for five locally produced foods under different information treatments. Results indicate that both product-origin information and local-related marketing information have significant effect on consumers' willingness-to-pay, with participants willing to pay significantly more for food that they are told originates from their region. These results can inform how local brands develop their value proposition, target valuable customer segments, create effective marketing communications with appealing labels that call-for-action, and come up with profitable pricing strategies.

## **BIOGRAPHICAL SKETCH**

Biying Chang, Mengjia Li and Liuyanyuan Yang are graduate students at Cornell University, pursuing a Master of Professional Studies degree in Applied Behavioral Economics and Individual Choice, with a concentration in Behavioral Marketing. They share a passion for food marketing. Through this research, they hope to utilize behavioral economics principles to analyze consumer behavior and help local food brands get off the ground and flourish.

## **ACKNOWLEDGMENT**

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## INTRODUCTION

The current food marketplace is competitive and challenging for local farmers and producers because consumers continue to expect both higher quality and greater value from products while retailers demand lower prices and sometimes pass along operational costs to producers. To combat these increasing pressures, states are enacting agricultural policies and developing state-funded programs to help protect local farmers and producers. These programs are generally aimed at promoting and identifying all agricultural products produced within the state, creating a sense of belongingness and “loyalty to one’s state or region.” As these programs only entail authorizing producers to use certain logos and claims, they are relatively inexpensive means to stimulate economic activity and therefore very attractive policy tools (Jekanowski, Williams II, Schiek, 2000). Examples of some popular state programs include: “Ohio Proud”, “Jersey Fresh” and Virginia’s Finest”, which rely heavily on the use of a standardized logo or slogan, which can be displayed on point-of-purchase (POP) or printed on product label (Williams, 1995).

These state programs work under the premises that: consumers prefer, or at least have an interest in supporting local economics; consumers believe that local products are fresher; and/or that locally sourced products have fewer environmental concerns. These preferences for local foods have been shown to result in a higher willingness-to-pay (WTP) of about 23% (Lang, Stanton, Qu, 2014). According to and Jekanowski, Williams II, Schiek (2000) the strong willingness to purchase local products positively affects local sales and benefits the state’s producers. One of the most successful state branding program has been the “Jersey Fresh” campaign, credited with doubling consumer awareness of New Jersey agriculture and led to comparably more inelastic demand for products in the program (Brown, 1988). That said, not all

programs have met with universal success. According to Brown (1988), the “Arizona Grown” program was less successful in increasing awareness for locally-sourced food products. The difference in performance raised the question of whether the logos and slogans are perceived correctly and identified before purchase decisions.

While there is a noticeable preference for local food products, there are no clear or universal standards for the definition of “local”. This can lead to considerable confusion for consumers, as well as hurt producers who are trying to market their products as local. For example, if consumers are only willing to pay a premium for food products that are produced within a 50-mile radius of them, they might not react (or react negatively) to local messages that market the product as being from one’s state. This research aims to understand the relationship between consumers’ willingness-to-pay and *revealed* product geographic origin information, and to examine the effectiveness of different local-related marketing messages displayed on product labels. Furthermore, the study intends to discover the effect of the interactions between product geographic origin information and local-related marketing message to consumers’ willingness-to-pay. The two local-related marketing messages examined in this paper would likely to reduce the level of confusion so that consumer receive the core values that producers want to emphasize and use as differentiators. This research can provide local producers with a broader understanding of how their consumers react to different levels of geographic origins and the effects of “local-related” marketing messages. The knowledge will be useful for promoting their products and gaining competitive advantage in the highly challenging market environment.

## LITERATURE REVIEW

Previous studies have demonstrated consumers' arising interests and preferences for locally produced foods. The lack of a universally agreed upon definition of "local" has raised problems for both consumers and food marketing researchers. Especially in the context of foods, the meaning of "local" is expressed and perceived differently. For example, one company might define "local" to mean being sourced in-state, while another might define "local" as being produced within 100-mile from point of purchase. In lieu of neither a colloquial definition of "local origin" nor a legal standard existing, many studies use state boundaries as a boundary of geographic scope for "local" foods (Darby, 2008; Feldmann, Hamm, 2015). Although definitions for "local" vary widely from government to retailers, it is widely accepted that consumers' willingness-to-pay for food products decrease as miles food travelled decreases (Adams and Salois, 2010). Consumers buy local food for several reasons, one being (perceived) greater transparency of the food origin and the production process (Feldmann, Hamm 2015). Besides what Feldmann and Hamm (2015) discovered, the emotional appeal, in most the cases, loyalty to one's state of residence is an important factor in a consumer's purchase decisions for foods (Jekanowski, Williams II, Schiek, 2000).

A contingent valuation framework revealed that South Carolina consumers are willing to pay 27% more for local produced foods and 23% premium for local animal products (Carpio, Isengildina-Massa, 2009). U.S. customers in general have a particularly strong positive preference to local products, and are willing to pay 9%-15% more compared to non-local alternatives (Onozaka, McFadden, 2011). The generally held preference to purchase food products produced in-state, when properly recognized and leveraged, is expected to have positive effect on sales for local producers and farmers (Jekanowski, Williams II, Schiek, 2000).

Recently, research has focused on the marketing materials of local food products, and has yielded valuable insights for domestic and local producers. Understanding the product claim-location interactions may illustrate the best marketing opportunities, especially for small and mid-size farms (Onozaka, McFadden, 2011). There are interesting insights about how consumers preferences are influenced by different claim wordings for local food products. Specifically, consumers prefer relatively vague terminologies, such as “from the local region”, that leave them space to interpret and identify meanings (Wageli, Janssen, Hamm, 2015). While the existing literature has examined the influences of different marketing messages, the literatures has not tested the relative effectiveness (or importance) of different product-origin claims on raising consumers’ WTP, nor have they addressed the importance of including local-related messages and the combined effect of using both, which are increasingly widespread in the market.

## HYPOTHESIS

The objective of this research is to examine the effects of marketing messages on consumer's willingness-to-pay for local food products. Through an auction experiment method, this research study assesses different labeling elements and attributes, including product origins and locally related marketing messages, to provide marketers and retailers valuable marketing insights in local food category. For product-origin information, the study specifically examines the following two product-origin levels:

- a. Constrained regional level: Finger Lakes Area
- b. State level: New York State

Besides, using the "local-related" marketing messages, independently or combined with product-origin information could influence consumers WTP in different ways. In this research, the authors came up with two marketing messages:

- a. Local pride message: "Proudly produced locally"
- b. Community support message: "Support your local community"

To assess the two dimensions related to conveying the core values from the producers to consumers, this study is designed to answer the four research questions:

RQ1. What are consumers' WTPs for the five local products?

RQ2. Does consumers' WTP vary by product-origin levels?

RQ3. For the two local-related marketing messages designed to encourage and motivate consumers, whether and how do those messages influence consumers' WTP?

RQ4. Does WTP vary by different combinations of proposed information?

The following Hypothesis will be tested through lab experiment, to see whether labeling the products differently (in two dimensions and combined) would have effects on consumer's purchasing behaviors. The analysis will cover the two dimensions and the interactions of the two.

***H1. Consumers are willing to pay more for products that they know are coming from a constrained local region compared to products that they know are coming from the state level region.***

“State programs” work because consumers are thought to have loyalty in the state where they live, or are born. Recognizing and correctly perceiving the program will have positive effect on their WTP when they face multiple options on the retailer's shelf. While cultural and emotional factors play critical roles when it comes to “local”, physical factors like distance are also important that influence consumers choice. That is, the more intimate and constrained the areas are to the consumer, the more loyal they could be. The hypothesis above will allow us to determine and then compare consumer's values under different level of “local”: the state level and the constrained regional level.

***H2. Consumer's Willingness-To-Pay will be significantly different when given different marketing messages.***

Marketing message acts like a product's slogan, which “speaks” to its prospect. To reach the target customer and attract more potential customer, companies always design different kinds of marketing messages. Ideally, proper marketing message will lead to higher willingness-to-pay. The authors want to see, by testing this hypothesis that whether and how the marketing message would affect consumer's WTP.

***H3. There are significant difference in the interactions between the marketing messages and product-origin information.***

And more specifically

- a. The combination of constrained regional level product-origin information and community support message
- b. The combination of state level product-origin information and local pride message are interesting interactions that will impact consumer's willingness-to-pay.

Research from Mintel shows that community support is the leading reason for buying local (Mintel Academic, 2014). The more specific the product origin statement is, the sense of community should be stronger. "Support your local community" message combined with specific community level origin statement highlights the community consumer knows, and connects them with local producers and businesses. Buying such products directly shows customers their contribution made to the local community. Consumers are willing to pay a premium to make a positive impact on their local economy, and to contribute to their community.

Since state is a broader origin identification, consumers are less likely to obtain a general sense of community support. "Proudly produced locally" message will be more effective to combine with state level origin. The state origin statement honors the land of a state, which its citizens should be proud of. The message of "proudly produced locally" highlights civic consumer pride stake (Mintel Academic, 2014). However, labelling with the word "proud" would sometimes confuse consumers with what the exact "proud" means, will lead us to the interesting interaction between these two treatments.

## **EXPERIMENT**

In this experiment, participants were asked to bid on five different food products. To incentivize participants to reveal their true willingness-to-pay, we used the demand-revealing Becker-DeGroot-Marschak method (Becker, DeGroot, Marschak, 1964). Participants were given small samples of the food, along with nutrition and ingredient information (as labeled on the products themselves) to reduce uncertainty about the products they were bidding on. Participants made independent and sequential bids for the five products. The experiment leveraged a between-subjects design, in which participants were randomly assigned to different treatment cells that were composed of two dimensions of orthogonal variation: (1) a local-related marketing message treatment, and (2) product-origin information treatment. Each treatment had three unique levels that were implemented in a fully factorial design, resulting in nine distinct treatment cells (see Table 3 for details). The overarching goal of the experiment was to use the experimenter-induced variation in message and location treatments to explain differences in WTP across the different treatment groups.

### **Becker-DeGroot-Marschak Mechanism**

The objective of the experiment is to measure the effect of different message and location treatments on WTP for various food products. There is a long literature on eliciting WTP, with different mechanisms being better in different contexts. Since we wish to obtain independent and anonymous observations from each participant, we must use a sealed bid auction. One approach would be to use the theoretically demand-revealing second-price or Vickrey Auction (Vickrey, 1961). However, experiments using induced values have shown that, on average, participants in second price auctions overbid and experience does not seem to reduce overbidding (Kagel et al., 1987, Kagel and Levine, 1993, and Harstad, 2000). A compelling alternative is to use the



Becker-DeGroot-Marschak method to elicit demand. This method is incentive compatible, private, as well as non-competitive (Becker, DeGroot, Marschak, 1964). Unlike a traditional auction where participants are bidding against one another for one or more products, in the BDM mechanism, every participant has a chance to win the item, and their chances are not affected by the bids of other participants. The most common way of implementing the BDM procedure is to ask participants to formulate their maximum WTP for the item being auctioned. After the participant's WTP has been submitted, the price for the product is determined by a random number generator (that is independent of the participants bid). If the subject's stated WTP is greater than the randomly drawn price, they win the item and have to pay the randomly drawn price. If the subject's stated WTP is lower than the price, they do not win the product and do not have to pay anything. It can be easily shown that the utility maximizing decision is for participants to bid their true value (Becker, DeGroot, Marschak, 1964).

A second concern relating to the design of the experiment is the cost. It is in the experimenter's interest to collect as much information as possible while fairly compensating the participants. In the context of this experiment, we want participants to truthfully participate in many auctions. At the same time, we do not necessarily want to implement every auction, for multiple reasons. First, we don't want there to be competition between products, i.e. if participants know that all five auctions are going to be implemented, they may bid more truthfully for products they have higher valuations for -- this would destroy independence between bids. Second, a necessary condition for independence is that budget cannot persist across different products. That is, if we were to pay out every round, we would need to provide participants with a new starting balance every round, which would be very expensive. To alleviate these concerns, after participants have submitted their bids for all five, we can randomly

implement one of the five rounds to be implemented for real. If participants do not know which round will be randomly implemented, they should treat each round as if it were real. This strategy gives us independence of bids as well as reduces costs.

### **Setup And Logistic**

72 Cornell employees (at least 21 years old) were recruited to participate in a lab experiment that asked them to bid on chances to win different food products. The experiment itself was broken down into two Phases. In Phase I, the calibration phase, participants bid on tokens that could be redeemed for cash. In Phase II, participants bid on actual food products, henceforth referred to as “items.” Participants received a cash balance of \$2 at the beginning of Phase I, and a cash balance of \$18 in Phase II. These cash balances could only be used in their respective phases and were non-transferable between phases. Any money not spent by the participant would be kept by the participant. In both phases, the BDM mechanism was used to determine whether or not a participant won the item. After a participant submitted his or her WTP for a given round, the price was determined by a random number generator. If the subject's stated WTP is greater than the randomly drawn price, he or she will win the item and has to pay the randomly drawn price. If the subject's stated WTP is lower than the price, he or she will not win the product and does not have to pay anything. The minimum bid was \$0 and a bid could not exceed a participant's endowment.

Phase I constituted five rounds of a bidding task where participants were asked to bid on virtual tokens that could be redeemed for cash. See Table 1 for a breakdown of token values. After each round, the participant was shown the results of the round -- the randomly drawn price, and whether or not they won the product. The purpose of these rounds was to familiarize

participants with the BDM mechanics and give them feedback on their bidding strategies towards the goal of eliciting more-accurate evaluations in Phase II.

<u>Token</u>	<u>Cash Value</u>	<u>Expected Bid</u>
1	\$0.25	\$0.25
2	\$0.50	\$0.50
3	\$0.75	\$0.75
4	\$1.00	\$1.00
5	\$1.50	\$1.50

Table 1. Token Values

In Phase II, participants bid on actual local food items. The five items were chosen such that (a) They could be obtained from a local food retailer in bulk, (b) They were made or produced in the Finger Lakes region, (c) The true valuation of the product was between \$2 and \$15, (d) The products had to be transportable, and (e) The products would be appealing.

Participants bid on all five items, but to control for possible order effects in bidding behavior the order in which items were presented were randomized for each participant, e.g. one participant may have seen {Item 5, Item 3, Item 2, Item 1, Item 4} while another may see {Item 2, Item 5, Item 3, Item 4, Item 1}. Descriptions of the five items can be found in Table 2.

<u>Item</u>	<u>Description</u>	<u>Price</u>
Honey	1 lb. Honey Produced in Finger Lakes Area	\$6.89
Oats	12 Oz Oats Produced in Finger Lakes Area	\$5.49
Cheese	8 Oz Sharp Cheddar Produced in Finger Lakes Area	\$7.19
Cookies	2 Oz, 56g Cookies Produced in Finger Lakes Area	\$2.49
Juice	12 fl. Oz Juice Produced in Finger Lakes Area	\$2.99

Table 2. Phase Two Products and Actual Values

For each session, 24 subjects were recruited in one room. Three experimental sessions were run, yielding a total of 72 Cornell employ participants. See the Appendix A and Appendix

B for a complete set of experiment instructions and survey materials.

## Treatment

In Phrase II, participants were presented with five food products one by one on screen. Each product was showed with a product front picture, and a detailed product description on the side. There were two treatments for presented products: product-origin information treatment and “local-related” marketing message treatment (As shown in Figure 1).

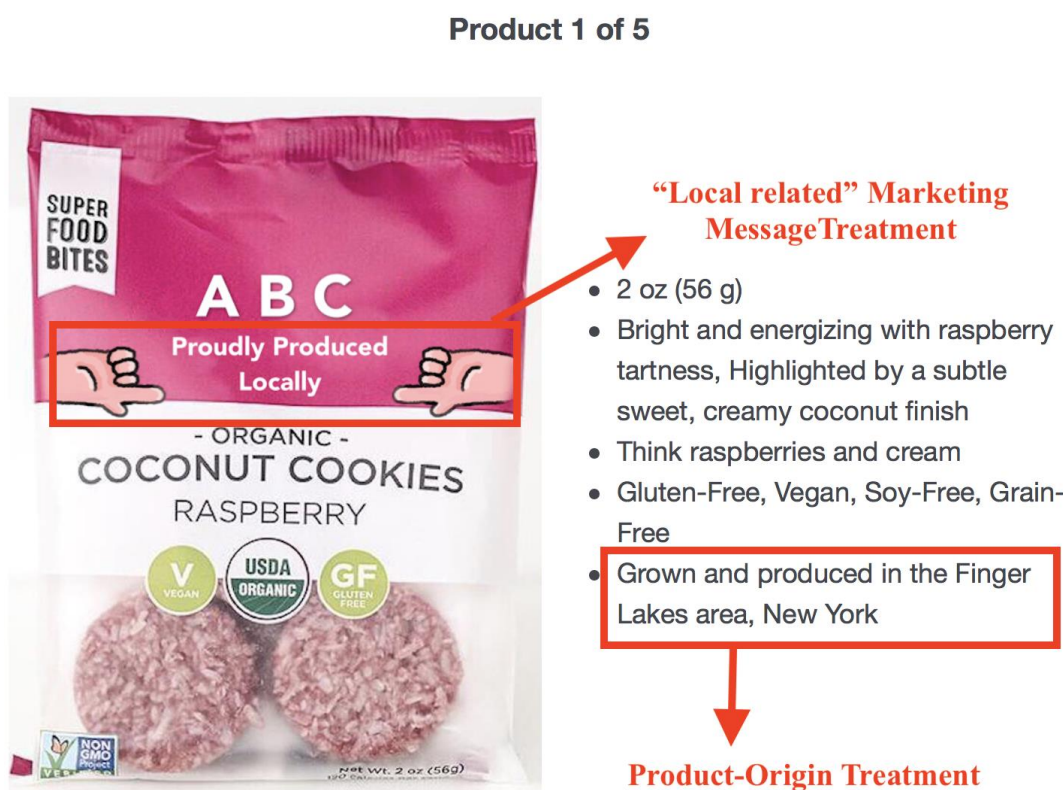


Figure 1. Experiment Screen Display: Product Treatments

The product-origin treatment is designated to evaluate customer’s willingness-to-pay on a food product given the product-origin information. Participants were randomly presented with one of three scenarios with product-origin statements. Participants in the first scenario group were presented with a statement of “Produced in Finger Lakes Area” in product description

section on screen. Participants in the second scenario group were presented with a statement of “Produced in New York” in product description section on screen. Participants in control group were presented with the same product description for each product, but without the product-origin information.

The “local-related” marketing message treatment is to investigate the change of customer’s willingness-to-pay with marketing messages. Similar to product origin treatment, participants were randomized into one of the three “local-related” marketing message treatments. In the first treatment, participants were showed the product picture with an added message of “Proudly Produced Locally” on product label. The second treatment was to add a message of “Support Your Local Community” on product label. The control treatment presented the genetic product picture without any “local-related” marketing message.

Each participant was randomized in to one product origin and one “local-related” marketing message treatment group. There were 9 treatment groups each lab experiments. Table 3 below shows the treatment classifications:

		<b>Product Origin Treatment</b>		
		<b><u>Finger Lakes</u></b>	<b><u>NY</u></b>	<b><u>Control (None)</u></b>
<b>Marketing Message Treatment</b>	<b><u>Proud</u></b>	Proud \ Finger Lakes	Proud \ NY	Proud \ Control
	<b><u>Support</u></b>	Support \ Finger Lakes	Support \ NY	Support \ Control
	<b><u>Control (None)</u></b>	Control \ Finger Lakes	Control \ NY	Control \ Control

Table 3. Experiment Treatment Design

## Empirical Model

In the real world, there is little exogenous variation in the treatments (local marketing message and product-origin information) we are interested in. This makes it very difficult to evaluate the causal effects of these treatments. The lab, however, provides the perfect environment for introducing and evaluating this type of variation. Since participants are randomized into treatment cells, the only thing (in expectation) different about these groups is the treatments they saw. Thus, any differences in outcome measures that we observe should be attributable to different treatments. These ideas are captured in the following reduced-form model of bidding behavior:

$$WTP_{ik} = \alpha_k + \beta x_i + \gamma z_i + \delta x_i \times z_i + \varepsilon_{ik}$$

Where  $WTP_{ik}$  is participant  $i$ 's willingness-to-pay for item  $k$ .  $\alpha_k$  is item-specific constant,  $\beta$  is a vector of local-related marketing message treatment effects,  $x_i$  is a dummy vector describing participant  $i$ 's local-related marketing message treatment,  $\gamma$  is a vector of product-origin treatment effects,  $z_i$  is a dummy vector describing participant  $i$ 's product-origin treatment,  $\delta$  describes the marginal effect of the interaction between the marketing message and product origin treatments, and  $\varepsilon_{ik}$  captures residual noise. The coefficients of interest reside in  $\beta$ ,  $\gamma$  and  $\delta$ .

## RESULTS

### Phase I Results

This study's dependent variable of interest, willingness-to-pay (WTP), is measured by participants' bids in the experiment. Therefore, it is prudent that we make sure that the bids actually reflect the participants' true WTP. We can do this by evaluating participants' "Phase I" bids, where they bid virtual "tokens" with induced values that are redeemable for cash. The intuition is that the induced value setup gives us an objective baseline to measure their bidding behavior against: A perfectly rational individual *should* bid the value of each token. Therefore, what we are looking for is that participants *should* bid the value of the token (or very close to it).<sup>1</sup>

Figure 2 below depicts the average bids of participants by token value. A least squares linear model (blue) summarizes how participants actually behaved while the red 45 degree line illustrates perfectly rational bidding. With the exception of a few bids below the true value of the token, the actual and predicted behaviors very closely align. This provides strong evidence that most participants in this experiment understand the bidding mechanism and are revealing their true WTP. Deductively, it is safe for us to expect that participants understand the mechanism and have the potential to provide accurate WTP in Phase II.

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<sup>1</sup> If we observe participants bidding erratically, or consistently higher or lower than the true value of each token, we can interpret that behavior as them not understanding the mechanism or not caring enough to provide true valuation measures. Since these metrics are collected prior to their treatments being revealed, we would not be biasing our results by not including such individuals in the final analysis, and doing so would likely improve the validity of the results.

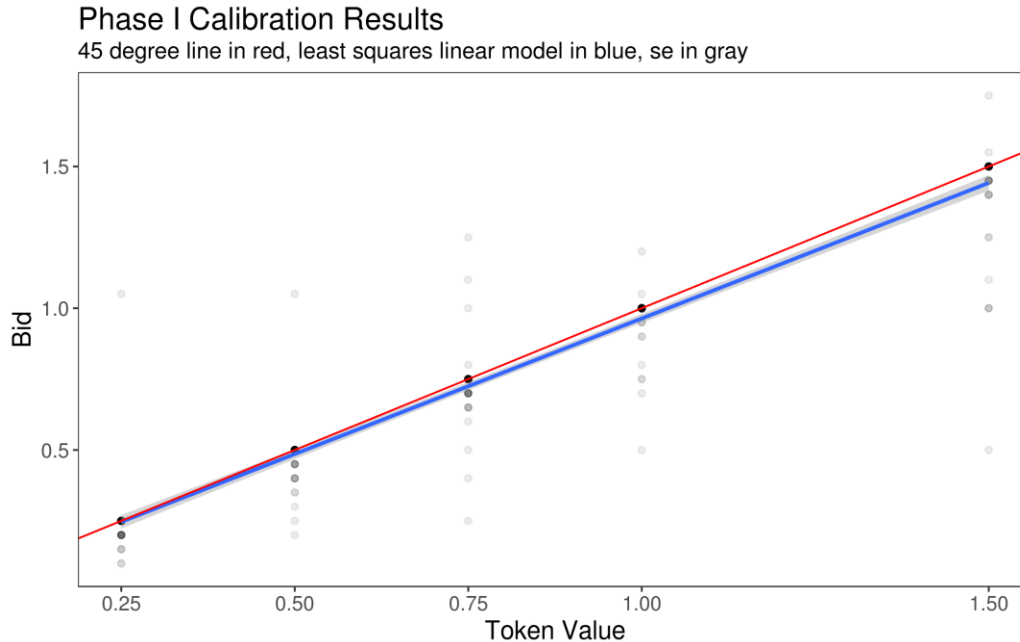


Figure 2. Experiment Phase I Calibration Results

## Phase II Results

Before evaluating the full model, we will first look at descriptive statistics that will illustrate the overall trends in how participants bid for different products and in different treatments. We will then evaluate our hypotheses using a linear regression.

Average bids by products with exact values shown in the Table 4 and are depicted in Figure 3. The average bids for the five products are all lower than their listed retail prices. The greatest discrepancy is for Cheese, which had an average bid of only \$4.08 while being listed at \$7.19 per 8-Oz, a 43.3% gap. The fact that participants bid lower for the products than their retail price is not a serious cause for concern, it means these people are (on average) would not be interested in buying these products in the store.



Variable	Avg. Bid (\$)
<b>Product-Origin Treatment</b>	
Control	3.3008
Finger Lakes	4.1472
New York	2.9955
<b>Local-Related Message Treatment</b>	
Control	3.9231
Proud Message	2.5813
Support Message	4.0720
<b>Product</b>	
Cheese	4.0754
Cookies	2.3971
Honey	5.0558
Juice	2.5667
Oats	3.5000

Table 4. Average Bids by Treatments and Products

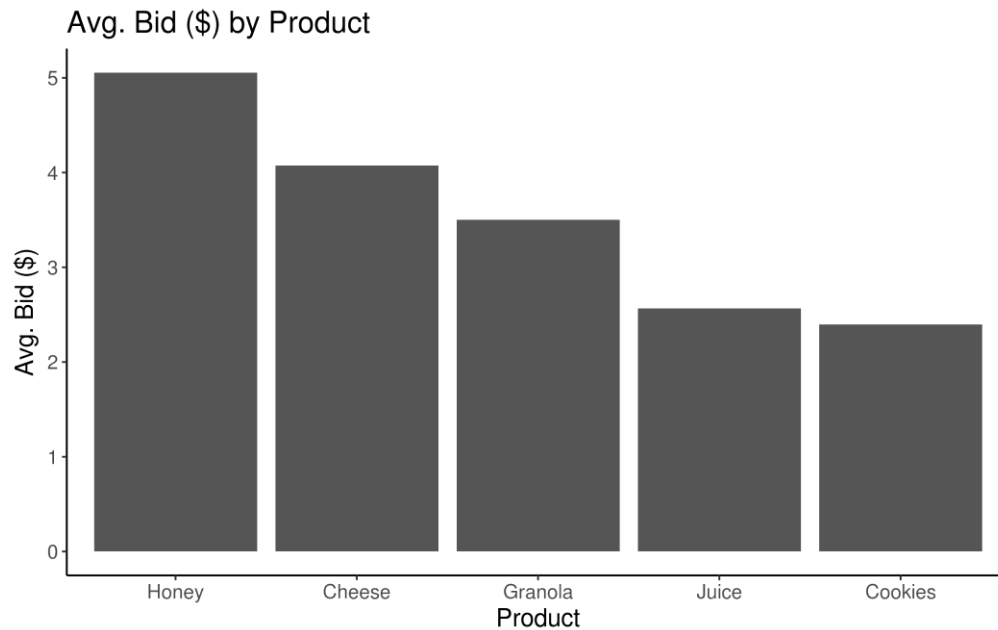


Figure 3. The Average Bids By Product

Figure 4 shows the average bid for each product-origin treatments. The participants who saw the Finger Lakes treatment had the highest average bid at \$4.14. The average bid for participants in the honey group was \$3.30, while participants in New York treatment group had

lowest average bid of \$2.99. The 25% increase in WTP between the control group and the Finger Lakes treatment group is similar in magnitude to the 27% increase found by Carpio and Isengildina-Massa (2009) and the 9%-15% increase observed in Onozaka and McFadden (2011).

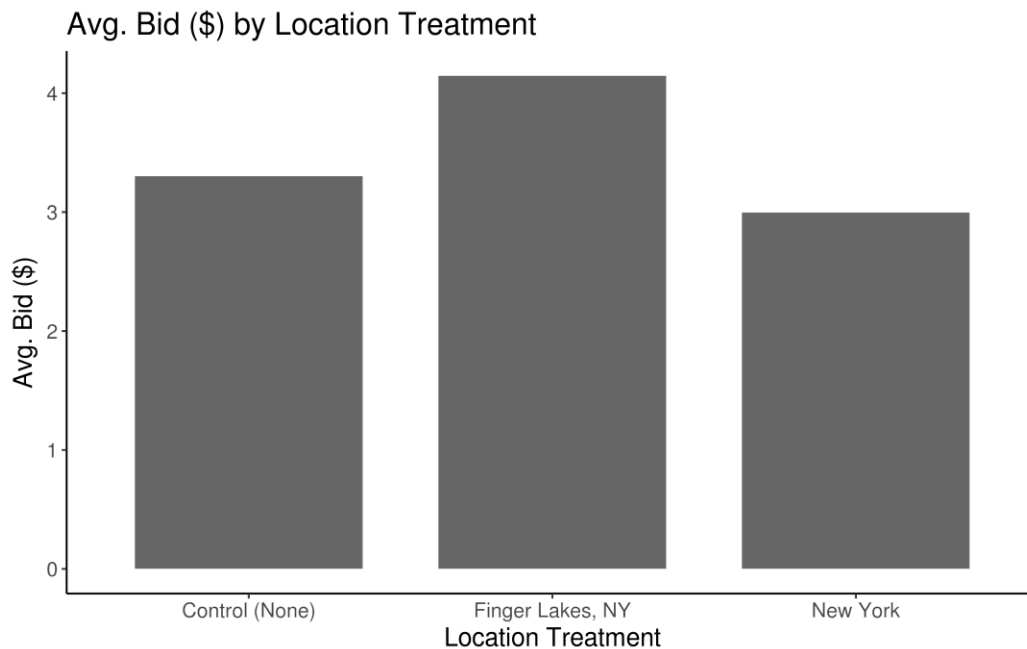


Figure 4. Average Bid by Product-Origin Treatment

Figure 5 presents the average bid for each of the local-related marketing message treatments. It is obvious that the averages bids are different in the three message treatments as we expected. When the community support marketing message is presented, the average bid is slightly higher than the control treatment. However, unexpectedly, when the local pride marketing message is presented, the average bid reduces tremendously to \$2.58.

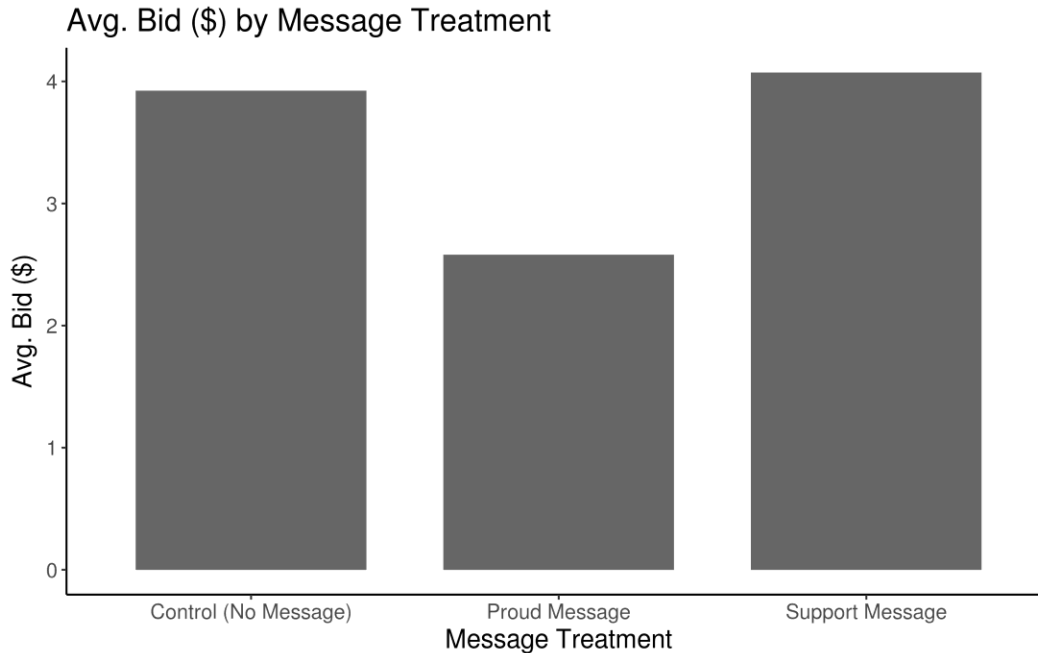


Figure 5. Average Bid by Local-related Marketing Message Treatment

To evaluate our hypotheses rigorously, we will now turn to the regression estimates. While the regression results will parallel the summary statistics, they have the added benefit of allowing us to control for variation in bids across different products, which will give us more power to detect the significance of the treatment effects. Table 5 presents the result of our linear regression model. The model includes the two independent treatments of local-related marketing messages and product-origin information as well as the interactions between the two treatments. The model uses a dummy variable for each treatment except the “controlled” and dummy variables for each food products except for “Cheese”, so the intercept of the regression model is the average bid for “Cheese” in both control groups. This approach allows us to discuss the hypothesis that the treatments are effective by showing which of the hypotheses (that WTP will be different from the controlled group) cannot be rejected for any significant treatment. The coefficients on the dummy variables for the other four different products give the WTP’s difference from the WTP for “Cheese”. The unit of observation in the regression is a participant-

product bid. The coefficients should be interpreted as marginal effects of the treatment on participants' bids.

The first two coefficients of interest are those for the product-origin treatments with controlled local-related marketing message -- the statement with "Produced in Finger Lakes Area" and statement with "Produced in New York" treatments -- are likewise captured by two dummy variables. The coefficient of control "Finger Lakes" treatment is 1.88 ( $p < 0.001$ ), which means participants, knowing the product is produced in Finger Lakes Area, on average are willing to pay \$1.88 higher. "Finger Lakes" product-origin treatment placed a significant positive effect on participant's willingness-to-pay for products. Interestingly, the coefficient of controlled New York treatment is -1.57 ( $p < 0.01$ ), which means participants, with "New York" treatment, on average bid \$1.57 less for products. These are evidence for **H1**, in that we observe that participants are willing to pay more for products when they know the product-origin is at the regional level (Finger Lakes Area) compared to when it is at the state level (New York State).

To evaluate Hypothesis **H2**, we will turn to the coefficients for the "local-related" message with controlled product-origin treatments. As shown in Table 5, the coefficient of controlled local pride message is -1.48 ( $p < 0.01$ ), which means participants with controlled local pride message treatment, on average bid \$1.48 dollar LESS for products, a highly significant negative effect on participant's willingness-to-pay. The coefficient of controlled community support message is 0.60, which means participants, with community support message, bid on average \$0.60 higher for products, although the difference was not statistically significant. Together, these results support Hypothesis **H2**.

In order to evaluate Hypothesis **H3**, which stated that there are significant differences in the interactions between the marketing messages and product-origin information, we need to

examine the cross-effects of two local-related and product-origin treatment messages. As shown in the model, there are several interesting interactions we looked into. But none of these interactions are significant in our model. However, it is still interesting to interpret the coefficients for the interactions and evaluate our hypothesis accordingly.

The interaction of local pride message and Finger Lakes treatment decreases participants' willingness-to-pay. The coefficient of this interaction is -1.04, meaning participants, in the interaction treatment of local pride message and Finger Lakes Area product-origin information, on average bid \$1.04 lower for products. And the interaction of local pride message and New York treatment also decreases the bids for \$0.66 with the coefficient at -0.66. As for the community support message combined with the Finger Lakes or New York treatments, the two interactions both increase consumer's willingness-to-pay with coefficients at 0.02 and 0.69, meaning that participants, in the interaction treatment of community support message and product-origin information, on average bid \$0.02 more and \$0.69 more.

Different from our original hypothesis H3, the interactions of treatments are not significantly different from other treatment groups. Since it is just a pilot study, we do not have enough data to evaluate and estimate the interactions between treatments and different food products. In the following part, we will talk about our research limitations and recommendations based on the result.

<b>Variable</b>	<b>B/SE</b>	
Intercept	4.2376 (0.4909)	***
Control / Finger Lakes	1.8838 (0.5443)	***
Control / New York	-1.5688 (0.5738)	**
Local Pride / Control	-1.4824 (0.5576)	**
Local Pride / Finger Lakes	-1.0441 (0.5939)	
Local Pride / New York	-0.6641 (0.5939)	
Community Support / Control	0.6016 (0.5939)	
Community Support / Finger Lakes	0.015 (0.5738)	
Community Support / New York	0.6967 (0.6542)	
Cookies	-1.6783 (0.4369)	***
Honey	0.9804 (0.4369)	*
Juice	-1.5087 (0.4369)	***
Rolled Oats	-0.5754 (0.4369)	

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

Table 5. Regression Results

## CONCLUSION

In the study, we first explored the effects of product-origins and local-related marketing messages respectively on consumer's willingness-to-pay on local products. We found that a marginal positive effect of revealed product-origin information on consumer's WTP while a slight negative effect of state level. A surprising result we found in the marketing message analysis is that local pride message has a significant negative impact on consumer's WTP. Although community support message helps increase the WTP, it only effects in a small degree. Thus, we conclude that both different geographic product-origin levels and local-related marketing messages have effects on consumer's WTP. As for product-origins, knowledge that the product is from the local regional is more valued to customers than knowledge that the product is from their state. As for marketing messages, things are more interesting. Consumers weigh more heavily on community support message than the controlled groups; and local pride message is weighed the least among the three treatments.

We also found that consumer's willingness-to-pay decreases when combined with local pride message and product-origin label. The WTP falls larger when local pride message is combined with "Finger Lakes Area" than with "New York State". However, community support marketing messages have a positive impact, specifically, the WTP grows much higher when combined with "New York State" than with "Finger Lakes Area".

Based on the above findings, we come up with several recommendations:

1. Product-origin level: As consumers are more willing to buy products (that they know are produced) from constrained regional level than state level, the local stores should supply more local foods, for example, local producers should label the food product as produced in constrained regional area (e.g. Cayuga Lake Area); food stores in Ithaca may provide

more products produced from Finger Lakes Area. A larger range of demographic level may not be a good choice to label on products sold in local stores.

2. Local-related marketing message: It starts with knowing the wants, fears, problems, and needs of your target market and ends by crafting a message that speaks to those problems in a compelling and believable way. Although it may have positive effects to appeal more consumers, we should pay more attention on its wording and range of application, for example, aggressive, offensive and exaggerated words should not be included in the marketing message, in contrary, words that closes the consumers and gives them a strong sense of community should be presented on the noticeable area of the product.
3. Interaction of product-origin level and local-related marketing message: We should be more careful when combining marketing messages and product-origins together. Our recommendation is that before the interaction of marketing message and product-origin is officially launched on the local products, we should conduct sufficient sample tests on its effect of application among consumers.

### **Limitations and Future Research**

Now we have got answers to all four of our research questions raised in the beginning and have tested our hypothesis. The result of the research has revealed some interesting insights that are not discussed before, which, from marketers' standpoint, can be highly useful when applied in actual marketing practices. But there are still some limitations of this research that we have identified.

Even we have designed the lab experiment in many aspects to make it as close as possible to the real-life shopping scenario, there are still unavoidable factors such as the environment and the physical setting of the lab, the time when the experiments are conducted and the number of



brands and product categories available that could possibly deviate participants from recognizing their true feeling towards the products and then affect their bids accordingly. Also, neither can we guarantee that people all have a standard to evaluate the product, nor can we be sure that whether the bids are biased by participants' personal preferences for the limited products we selected. In this study, there are only two local-related marketing messages tested, which were originally and intuitively created by us, based on our own experience. Given the background of this research, the three sessions of lab experiment were all conducted on Cornell University campus with Cornell faculties and staffs as the participants. There were only 72 participants across three sessions. While the data points were sufficient to generate a high power of the test with several significant results, it would be better to conduct experiments with more participants with diverse demographic backgrounds.

For future researches, it would be interesting to bring in some non-food local products. Also, as the effects of different local-related marketing messages dramatically vary, it is recommended to test the proposed messages before launching them.

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## APPENDIX

### Appendix A. Sample Phase I Instruction & Experiment Design

#### INSTRUCTIONS

Please take a few minutes to carefully read the instructions below.

This experiment has two **Phases**. In Phase 1, you will be asked to value virtual "Tokens" that can be redeemed for cash. In Phase 2, you will be asked to value various food products. You will receive a cash balance of \$2.00 at the beginning of Phase 1, a cash balance of \$18.00 in Phase 2, and \$5.00 just for showing up (but this cannot be used in either phase). These cash balances can only be used in their respective phases and are non-transferable between phases.

In both phases, we will ask you for your maximum willingness-to-pay (WTP) for tokens or food products.

The next few screens will explain why it is always in your best interest to enter the true maximum value that you are willing-to-pay.

In summary, in the first phase, you will be bidding for virtual "Tokens" than can be redeemed for money; while in the second phase, you will be bidding for actual goods. The \$2.00 cash balance in Phase 1 is for that phase alone. Phase 2 will start with a separate \$18.00 cash balance.

Next

## PHASE 1 INSTRUCTIONS

You have been given a \$2.00 cash balance. In the following 5 rounds, you will enter your maximum willingness-to-pay for different tokens. Only one of the 5 rounds will be randomly selected to be implemented for real. We will do this after you have completed all 5 rounds. This means that every round is independent of the others, and that you should treat every round as if it were real.

After you've have entered your maximum willingness-to-pay for a token, we will randomly generate a price,  $P$ . If your willingness-to-pay is greater than  $P$ , then you buy the token for  $P$  from your starting balance. If the randomly generated price,  $P$ , is greater than your willingness-to-pay, then you don't buy the token and you get to keep your starting balance. If you buy the token, the value of the token is automatically added to your balance.

Next

---

## WTP INSTRUCTIONS

You might think that your best strategy is to enter an amount less than your true maximum willingness-to-pay. This is incorrect. The price you will pay for the product will be determined by a random number generator, and NOT by the value you enter. Thus, if you enter a value less than your true willingness-to-pay, you would not be able to affect the price you pay, but might end up losing the opportunity to buy at a "good" price.

We will now illustrate this with an example.

Next

## WTP EXAMPLE

Suppose a particular food product is worth \$10 to you. If you enter your true maximum willingness-to-pay for this item (i.e. \$10), then one of two things happens: (1) if the randomly drawn price,  $P$ , is below your stated willingness-to-pay, you will win the food product that you value for \$10.00 for only  $P$ ; or (2) if the randomly drawn price is above \$10, you don't have to pay for the product and you get to keep your starting balance. It follows that by stating your maximum willingness-to-pay, you make a "profit" since you always end up paying less for the product than what it's worth to you.

You should never enter more than your maximum willingness-to-pay, as you may end up paying more for the product than it's worth to you.

What happens if you enter an amount less than your true value? For example, suppose you enter only \$1 (for the product that you value at \$10), and the randomly drawn price is \$5. As your stated value is less than the randomly drawn price, you would miss out on the opportunity to buy the product for only \$5!

Long story short: you will maximize your payout for participating when you enter your true valuation as precisely as possible!

We will now begin Phase 1 of the experiment where you will state your WTP for tokens of different values.

Next

## INPUTTING YOUR WTP

There is a two-step procedure for entering your willingness-to-pay. In the first step, you will be asked, "For product X, would you be willing to pay...". Below the question will be a price list with Yes/No responses. You can answer each Yes/No question individually, or you can click the highest price you would be willing to pay. Any time you say Yes, all Yesses below that price and all Nos above that price will be automatically selected.

For example, suppose you want to say Yes to \$4.55 or below; that is, you decide that \$4.55 is the maximum price you would be willing to pay. You could either click on the button \$0, \$1, \$2, \$3, and \$4, and then No to \$5, \$6, \$7, ... \$20. Or, you could just click \$5, and everything else would fill in automatically. Once your final choices are made, click "continue" to proceed to the second step.

For the product described above,  
would you be willing to pay:

\$0.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$1.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$2.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$3.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$5.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$6.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$8.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$9.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$10.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$11.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$12.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$13.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$14.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$15.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$16.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$17.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$18.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$19.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$20.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

The second stage is the same as the first, but involves finer price points. Continuing the example from before, after we select \$4 and press continue, we will be shown a price list ranging from \$4.00 to \$5.00. Again, you would answer the Yes/No questions such that you say Yes to everything up to \$4.55, but No to any higher price.

For the product described above,  
would you be willing to pay:

\$4.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.05	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.10	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.15	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.20	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.25	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.30	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.35	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.40	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.45	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.50	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.55	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.60	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.65	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.70	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.75	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.80	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.85	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.90	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.95	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$5.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

If at any time you want to go back (or if your prompted that your input is too high) you can press the "Reset" button to go back to the original grid.

If you have any questions about the experiment or experiment procedure, now is a great time to ask!

Please wait for the instructor to give you a code.

Next



**Token 1 of 5**

Token value  
**\$0.75**

The most you are willing to pay for  
this token is (max \$2.00):

0

For the token described above, would  
you pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Results

Please enter your maximum  
willingness to pay for this token.

Reset

Continue

### Token 1 of 5

Token value

**\$0.75**

For the token described above, would you pay:

The most you are willing to pay for this token is (max \$2.00):

**\$0.00**

\$0.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$1.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$2.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$3.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$4.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$5.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$6.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$8.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$9.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$10.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$11.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$12.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$13.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$14.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$15.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$16.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$17.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$18.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$19.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$20.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

Results

Please enter your maximum willingness to pay for this token.

Reset

Continue

Token 1 of 5

Token value

\$0.75

For the token described above, would you pay:

The most you are willing to pay for this token is (max \$2.00):

\$0.75

\$0.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.05	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.10	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.15	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.20	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.25	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.30	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.35	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.40	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.45	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.50	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.55	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.60	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.65	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.70	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.75	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.80	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.85	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.90	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.95	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$1.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

Results

Please enter your maximum willingness to pay for this token.

Reset

Finalize

### Token 1 of 5

Token value

**\$0.75**

For the token described above, would you pay:

\$0.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.05	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.10	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.15	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.20	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.25	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.30	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.35	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.40	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.45	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.50	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.55	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.60	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.65	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.70	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.75	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$0.80	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.85	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.90	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$0.95	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$1.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

The most you are willing to pay for this token is (max \$2.00):

**\$0.75**

#### Results

The randomly drawn price was \$0.88 which is greater than your price, so you don't buy the token and get to keep all of your starting budget.

Next

## Token 2 of 5

Token value

**\$1.00**

For the token described above, would you pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

The most you are willing to pay for this token is (max \$2.00):

**0**

### Results

Please enter your maximum willingness to pay for this token.

Reset

Continue

### Token 3 of 5

Token value

**\$0.25**

For the token described above, would you pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

The most you are willing to pay for this token is (max \$2.00):

0

#### Results

Please enter your maximum willingness to pay for this token.

Reset

Continue

### Token 4 of 5

Token value

**\$0.50**

The most you are willing to pay for  
this token is (max \$2.00):

**0**

For the token described above, would  
you pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Results

Please enter your maximum  
willingness to pay for this token.

Reset

Continue

### Token 5 of 5

Token value

**\$1.50**

The most you are willing to pay for  
this token is (max \$2.00):

**0**

For the token described above, would  
you pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Results

Please enter your maximum  
willingness to pay for this token.

Reset

Continue



Below is table that summarizes the results from the five rounds in Phase 1. We are now going to choose one of these rounds to be implemented for real. Click the "Select Random Round" button below. The selected round will become highlighted, and the result will automatically be added to your final balance. When you have finished, please click the "Next" button to proceed to Phase 2.

Round	Token	WTP	Price	Earnings
1	\$0.75	\$0.75	\$0.88	\$2.00
2	\$1.00	\$1.75	\$1.76	\$2.00
3	\$0.25	\$0.25	\$1.00	\$2.00
4	\$0.50	\$0.15	\$0.23	\$2.00
5	\$1.50	\$1.75	\$1.89	\$2.00

Select Random Round

Below is table that summarizes the results from the five rounds in Phase 1. We are now going to choose one of these rounds to be implemented for real. Click the "Select Random Round" button below. The selected round will become highlighted, and the result will automatically be added to your final balance. When you have finished, please click the "Next" button to proceed to Phase 2.

Round	Token	WTP	Price	Earnings
1	\$0.75	\$0.75	\$0.88	\$2.00
2	\$1.00	\$1.75	\$1.76	\$2.00
3	\$0.25	\$0.25	\$1.00	\$2.00
4	\$0.50	\$0.15	\$0.23	\$2.00
5	\$1.50	\$1.75	\$1.89	\$2.00

Select Random Round

Next

## Appendix B Sample Phrase II Experiment Design

### PHASE 2 INSTRUCTIONS

You have been given a \$18.00 cash balance. In the following 5 rounds, you will enter your maximum willingness-to-pay for different food products. Only one of the 5 rounds will be randomly selected to be implemented for real. We will do this after you have completed all 5 rounds. This means that every round is independent of the others, and that you should treat every round as if it were real.

After you've have entered your maximum willingness-to-pay for a given food product, we will randomly generate a price, \$P. If your willingness-to-pay is greater than \$P, then you buy the product for \$P from your starting balance. If the randomly generated price, \$P, is greater than your willingness-to-pay, then you don't buy the product and you get to keep your starting balance.

We have provided samples of all of the food item for you to try in the plate in front of you, along with complete ingredient lists and nutritional information.

Now is the time to ask questions if you have any.

Please wait for the instructor to give you a code.

Next

Product 1 of 5



- 1 lb
- Contains all of the natural enzymes and trace amounts of pollen, optimizing the health benefits of this natural sweetener
- With high levels of vitamins, minerals and antioxidants, can use it on cuts and burns to help aid the healing process
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

The most you are willing to pay for this product is (max \$18.00):

0

Results

Please enter your maximum willingness to pay for this product.

Reset

Continue

Product 1 of 5



- 1 lb
- Contains all of the natural enzymes and trace amounts of pollen, optimizing the health benefits of this natural sweetener
- With high levels of vitamins, minerals and antioxidants, can use it on cuts and burns to help aid the healing process
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

\$0.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$1.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$2.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$3.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$4.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$5.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$6.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$8.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$9.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$10.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$11.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$12.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$13.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$14.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$15.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$16.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$17.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$18.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$19.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$20.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

The most you are willing to pay for this product is (max \$18.00):

**\$7.00**

Results

Please enter your maximum willingness to pay for this product.

Reset

Continue

Product 1 of 5



- 1 lb
- Contains all of the natural enzymes and trace amounts of pollen, optimizing the health benefits of this natural sweetener
- With high levels of vitamins, minerals and antioxidants, can use it on cuts and burns to help aid the healing process
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

\$7.00	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.05	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.10	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.15	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.20	<input checked="" type="radio"/> Yes	<input type="radio"/> No
\$7.25	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.30	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.35	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.40	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.45	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.50	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.55	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.60	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.65	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.70	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.75	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.80	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.85	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.90	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$7.95	<input type="radio"/> Yes	<input checked="" type="radio"/> No
\$8.00	<input type="radio"/> Yes	<input checked="" type="radio"/> No

The most you are willing to pay for this product is (max \$18.00):

**\$7.20**

Results

The randomly drawn price was \$7.93 which is greater than your WTP of \$7.20, so you don't buy the product and get to keep all of your starting budget.

Next

Product 2 of 5



- 8 oz
- Made with fresh organic milk from pastured local farm cows, and aged for at least 6 months
- With an increase bite nice creamy texture
- This sharp cheddar is perfect with crackers, fruit, on sandwiches, or just by itself!
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Reset

Continue

The most you are willing to pay for this product is (max \$18.00):

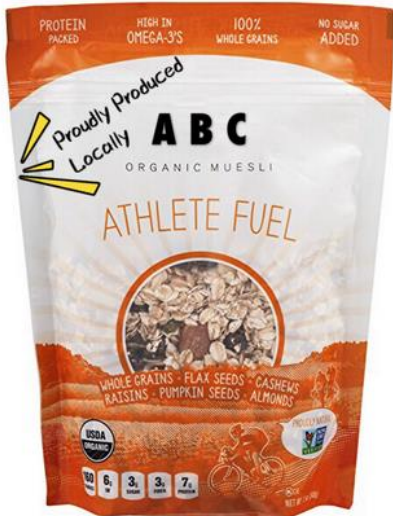
0

Results

Please enter your maximum willingness to pay for this product.



Product 3 of 5



- 12 oz
- Contains Gluten Free Oats, Raisins, Almonds, Flaxseeds, Cashews, Pumpkin Seeds
- Perfect to mix in with a cup of yogurt, enjoy with your favorite milk, or cook in the microwave
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Reset

Continue

The most you are willing to pay for this product is (max \$18.00):

0

Results  
Please enter your maximum willingness to pay for this product.



Product 4 of 5



- 2 oz (56 g)
- Bright and energizing with raspberry tartness, Highlighted by a subtle sweet, creamy coconut finish
- Think raspberries and cream
- Gluten-Free, Vegan, Soy-Free, Grain-Free
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

Reset

Continue

The most you are willing to pay for this product is (max \$18.00):

\$2.00

Results

Please enter your maximum willingness to pay for this product.

Product 5 of 5



- 12 fl oz
- Cold-pressed
- Without artificial flavors or added preservatives
- Apple apricot
- Grown and produced in the Finger Lakes area, New York

For the product described above, would you be willing to pay:

- |         |                           |                          |
|---------|---------------------------|--------------------------|
| \$0.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$1.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$2.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$3.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$4.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$5.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$6.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$7.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$8.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$9.00  | <input type="radio"/> Yes | <input type="radio"/> No |
| \$10.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$11.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$12.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$13.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$14.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$15.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$16.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$17.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$18.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$19.00 | <input type="radio"/> Yes | <input type="radio"/> No |
| \$20.00 | <input type="radio"/> Yes | <input type="radio"/> No |

The most you are willing to pay for this product is (max \$18.00):

0

Results

Please enter your maximum willingness to pay for this product.

Reset

Continue

Below is table that summarizes the results from the five rounds in Phase 2 We are now going to choose one of these rounds to be implemented for real. Click the "Select Random Round" button below. The selected round will become highlighted, and the result will automatically be added to your final balance. When you have finished, please click the "Next" button to proceed to continue with the experiment;

Round	Product	WTP	Price	Earnings
1	Honey	\$7.20	\$7.93	\$18.00
2	Cheese	\$4.20	\$3.02	\$14.98
3	Rolled Oats	\$5.05	\$9.18	\$18.00
4	Cookies	\$2.05	\$1.47	\$16.53
5	Juice	\$1.95	\$4.20	\$18.00

Select Random Round

Below is table that summarizes the results from the five rounds in Phase 2 We are now going to choose one of these rounds to be implemented for real. Click the "Select Random Round" button below. The selected round will become highlighted, and the result will automatically be added to your final balance. When you have finished, please click the "Next" button to proceed to continue with the experiment;

Round	Product	WTP	Price	Earnings
1	Honey	\$7.20	\$7.93	\$18.00
2	Cheese	\$4.20	\$3.02	\$14.98
3	Rolled Oats	\$5.05	\$9.18	\$18.00
4	Cookies	\$2.05	\$1.47	\$16.53
5	Juice	\$1.95	\$4.20	\$18.00

Select Random Round

Next

Below are the results from the experiment. Please write these results on the piece of paper in front of you. The administrators will check your info against theirs at the end of the experiment.

Phase	\$ Won	Product Won
1	2.00	NA
2	14.98	Cheese
Total	21.98	Cheese

I am finished recording

## Appendix C: Sample Demographic Information Survey

### POST-EXPERIMENT SURVEY

---

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
  - High school graduate (high school diploma or equivalent including GED)
  - Some college but no degree
  - Associate degree in college (2-year)
  - Bachelor's degree in college (4-year)
  - Master's degree
  - Doctoral degree
  - Professional degree (JD, MD)
- 

Choose one or more races that you consider yourself to be:

- |   |  |
|---|--|
| <input type="checkbox"/> White                            | <input type="checkbox"/> Asian                               |
| <input type="checkbox"/> Black or African American        | <input type="checkbox"/> Native Hawaiian or Pacific Islander |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Other                               |

---

What is your sex?

- Male
  - Female
- 

Information about income is very important to understand. Would you please give your best guess?

Please indicate the answer that includes your entire household income in (previous year) before taxes.

- Less than \$19,999
  - \$20,000 to \$49,999
  - \$50,000 to \$99,999
  - \$100,000 to \$149,999
  - \$150,000 or more
-

---

Are you the member of a coop?

- Yes
- No

---

In which country were you born?

---

If you were born in the United States, in which state were you born?

Next