# Availability, Attitudes and Willingness to Pay for Local Foods: Results of a Preliminary Survey

DC Adams[1] & AE Adams[2]

[1] Assistant Professor, Department of Agricultural Economics, Oklahoma State University
[2] PhD Student, Department of Sociology, Oklahoma State University

**Contact:**
**Damian C. Adams**
Department of Agricultural Economics
Oklahoma State University
316 Agricultural Hall
Stillwater, OK 74078
Phone: 405-744-6172
Email: damian.adams@okstate.edu

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*Introduction*

In response to USDA labeling loopholes and corporate involvement in organic foods, many consumers are touting 'locally-produced' as the new organic. 'Local' products are sought by those interested in supporting small farms, community agriculture, sustainability, animal welfare and a host of issues once identified with organic products (Brown, 2003; Darby et al., 2006). There is still very little literature on the economics of local food. A few studies have estimated willingness to pay (WTP) for local foods (e.g., Buchardi et al., 2005); yet these studies assume that local foods are as accessible, or are the same as their counterparts on all characteristics except for taste, price and other factors that do not capture many of the ideological motivations for buying local.

This paper presents the results of a *preliminary* intercept survey of consumers at farmers' markets in Gainesville, Florida in 2007. We developed survey questions to identify: (1) how much fruit and vegetable produce respondents buy from local sources; (2) attitudes regarding local foods; (3) definitions of local by distance and ownership; (4) WTP for local foods; (5) perceptions of the availability and cost of local products; and (6) demographic information. In addition to WTP, we employed several tools—a Likert scale, a cost/availability matrix, and other investigatory and demographic questions—to analyze factors affecting purchasing decisions. These include relative cost, accessibility, attitudes and perceptions of the term 'local.' In the following sections, we report and describe the results of the survey, including a regression analysis of WTP as a function of attitudinal, behavioral, and demographic variables. Given the small sample size, the results are largely not statistically significant. Yet, they are useful for refining the survey instrument for a larger study. In the following sections, we report the results of the preliminary survey.

*Survey Pre-Test and Administration*

We specifying a Likert scale, cost/availability matrix, demographic questions, WTP question, and questions to define local in terms of miles and farm ownership. These are discussed in more detail in Table 1 below and in the following sections. We pre-tested and refined the survey using student volunteers (n=77), consumer interviews at a local grocery store (n=13) and survey experts (n=4). The survey was administered by student teams in mid-July, 2007 at two farmers' markets for two hours each. Ninety-seven respondents completed surveys during this initial round (n=97).

Table 1. Description of Survey Questions and Variables of Interest.

| Survey Question | Variable Code | Values | Description |
|---|---|---|---|
| 1 | Mi | 1 = within 10 miles<br>2 = within 30 miles<br>3 = within 50 miles<br>4 = within 100 miles<br>5 = in Florida<br>6 = in SE USA<br>7 = in USA | "I consider fruits and vegetables to be local ONLY if they… are produced _____ from my home." |
| 2 | Ow | 1 = True, 0 = False | "local produce can ONLY come from farms *owned* locally" |
| 3 | InS | 1 = Infrequent | Does not shop anywhere at least once/week |
| 3 | LC, AS, FM, RS, DM, UP, OT | 1 = Never<br>2 = Twice a year or more<br>3 = Once a month or more<br>4 = Once a week or more | Shops at large grocery chain (LC), alternative grocery stores (AS), farmers' market (FM), roadside stand (RS), direct marketing program (DM), U-pick farm (UP), and "other" source (OT) |
| 3 | FM>2, FM4, LC<3, AS>2 | 1 = Never<br>2 = Twice a year or more<br>3 = Once a month or more<br>4 = Once a week or more | Shops at FM at least once a month (FM>2), FM at least once a week (FM4), large chain less than once a month (LC<3), or alternative store at least once a month (AS>2) |
| 3 | DMY, UPY, OTY | 1 = Never<br>2 = Twice a year or more<br>3 = Once a month or more<br>4 = Once a week or more | Any of the following were used at all: direct marketing (DMY), U-pick (UPY), and other (OTY) |
| 4 | WTP | Continuous. | "I would be willing to pay _____ for the local item" of "similar quality, appearance, and freshness" when the non-local item cost $1.00 |
| 5 | LkS | 1 = Strongly disagree<br>2 = Disagree<br>3 = Neutral<br>4 = Agree<br>5 = Strongly agree. | "Please indicate your level of agreement or disagreement with each of the following statements. |

| | | | |
|---|---|---|---|
| 6 | FVP | 1 = None<br>2 = Some<br>3 = Don't know<br>4 = Most<br>5 = All | "How much of the fruits and vegetables you purchase is GROWN locally?" |
| 7 | CDA | Averaged across 9 categories of FV, where each CD = sqrt(C*D).<br>1 = Much more (difficult/costly)<br>2 = More<br>3 = Slightly more<br>4 = Same or less | "How much MORE difficult is it to find the following fruits and vegetables from LOCAL sources?" and "How much MORE costly is it to buy the following LOCAL fruits and vegetables?" Included apples, bananas, berries, grapes, greens, carrots, tomatoes, and onions/garlic |
| 8 | PA | Averaged across 9 categories of FV.<br>1 = None<br>2 = Less than 25%<br>3 = 25 – 50%<br>4 = More than 50% | "What percentage of the following fruits and vegetables you purchased in the last year were produced LOCALLY?" |
| 7 & 8 | ISA | Continuous. Ratio of PA to CDA. Higher score means higher intensity. | Score that approximates the intensity of the respondent's local food purchases. |
| 9 | Gen | 1 = Male, 0 = Female | "Please circle your gender." |
| 10 | Age | Continuous. | "Please write in your age." |
| 11 | Ed | 1 = High school<br>2 = AA or technical<br>3 = Bachelor's<br>4 = Master's<br>5 = Higher than master's<br>6 = None of the above | "Please indicate your highest completed degree." |
| 12 | Ch | Continuous. | "Please indicate how many children under 12 you have." |
| 13 | Et | 1 = Asian/Pacific Islander<br>2 = Black/African Am.<br>3 = Hispanic/Latino<br>4 = Native Am.<br>5 = White/Caucasian | "Please indicate your ethnicity." |
| 14 | In | 1 = Less than $20,000<br>2 = $20,000 - $30,000<br>3 = $30,000 - $45,000<br>4 = $45,000 - $70,000<br>5 = $70,000 - $100,000<br>6 = More than $100,000 | "Please indicate your household's level of annual income." |
| 15 | Gr | 1 = Yes, 0 = No | "Are you involved in any environmental, agricultural, or civic groups or clubs?" |

*Definition of "Local" by Miles and Ownership*

The term 'local' is relatively fluid (See Table 2 and Figure 1 below); for example, only 8.43% stated that local food could come from over 100 miles, 28.41% said within 10 or 30 miles, 42.1% within 50 miles, and 21.05% within 100 miles. Ownership is also an important characteristic of local food—69.89% said it could only come from farms *owned* locally.
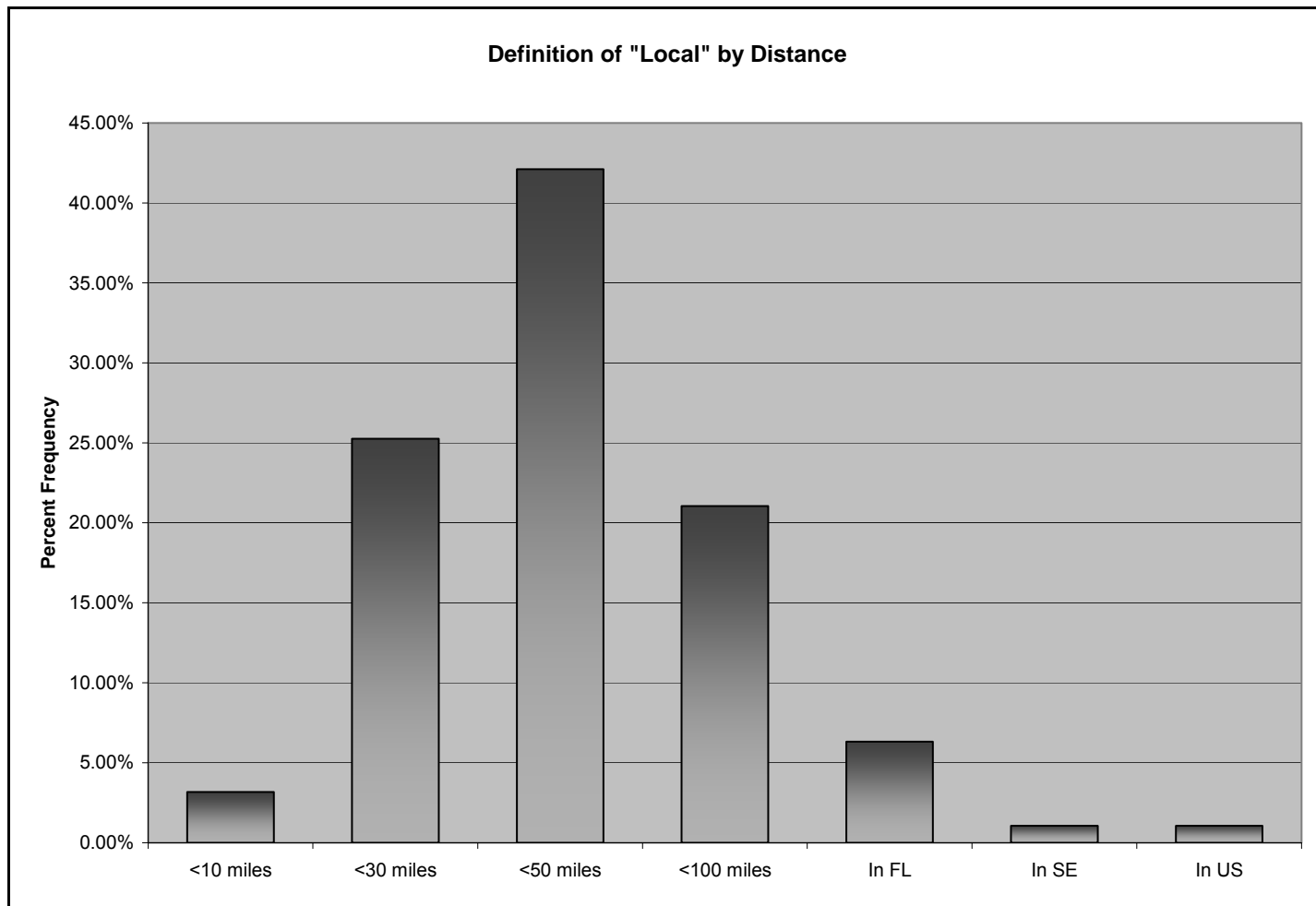


Figure 1. Definition of Local by Distance and Ownership

Table 2. Definition of "Local" by Food Miles and Ownership

| Question 1. I consider fruits and vegetables to be local ONLY if they are produced… | Distance | Percent Frequency |
|---|---|---|
| | <10 miles | 3.16% |
| | <30 miles | 25.26% |
| | <50 miles | 42.11% |
| | <100 miles | 21.05% |
| | In FL | 6.32% |
| | In SE | 1.05% |
| | In US | 1.05% |
| **Question 2. Local produce can ONLY come from farms *owned* locally** | **Ownership** | **Percent Frequency** |
| Implies - Not local unless owned locally | True | 69.89% |
| Implies - Can be local even if not owned locally | False | 30.11% |

*Frequency of Fruit & Vegetable Purchases by Venue*

Respondents were asked to indicate how frequently they buy fruits and vegetables from the following sources: (1) Large chain grocery stores (e.g., Publix, Winn-Dixie, Albertson's); (2) Alternative grocery stores (e.g., Mother earth, Ward's); (3) Farmers' markets; (4) Roadside stands; (5) Direct marketing programs (e.g., community supported agriculture); (6) U-pick farms; and (7) Other (*please write in your source*). The results are reported in Table 3 and Figure 2 below. Respondents favored large chain and "alternative" grocery stores for their vegetable and fruit shopping. Over 82% indicated buying those products from a large chain grocer "once a month or more" (40.63%) or "once a week or more" (41.67%), and over 67% indicated buying at an alternative grocery either "once a month or more" (31.25%) or "once a week or more" (36.46%). Over 62% of respondents frequently bought at farmer's markets, visiting "once a month or more" (27.08%) or "once a week or more" (35.42%). Other sources for fruits and vegetables included home gardens, U-Pick, and community-supported agriculture programs (CSAs). Interestingly, 10.42% of respondents "never" purchased fruits or vegetables at a farmer's market over the last year, perhaps visiting the markets for entertainment or products other than fruits and vegetables.

Table 3. Frequency of Fruit and Vegetable Purchases by Venue

**Frequency of purchases of fruits or vegetables by venue**

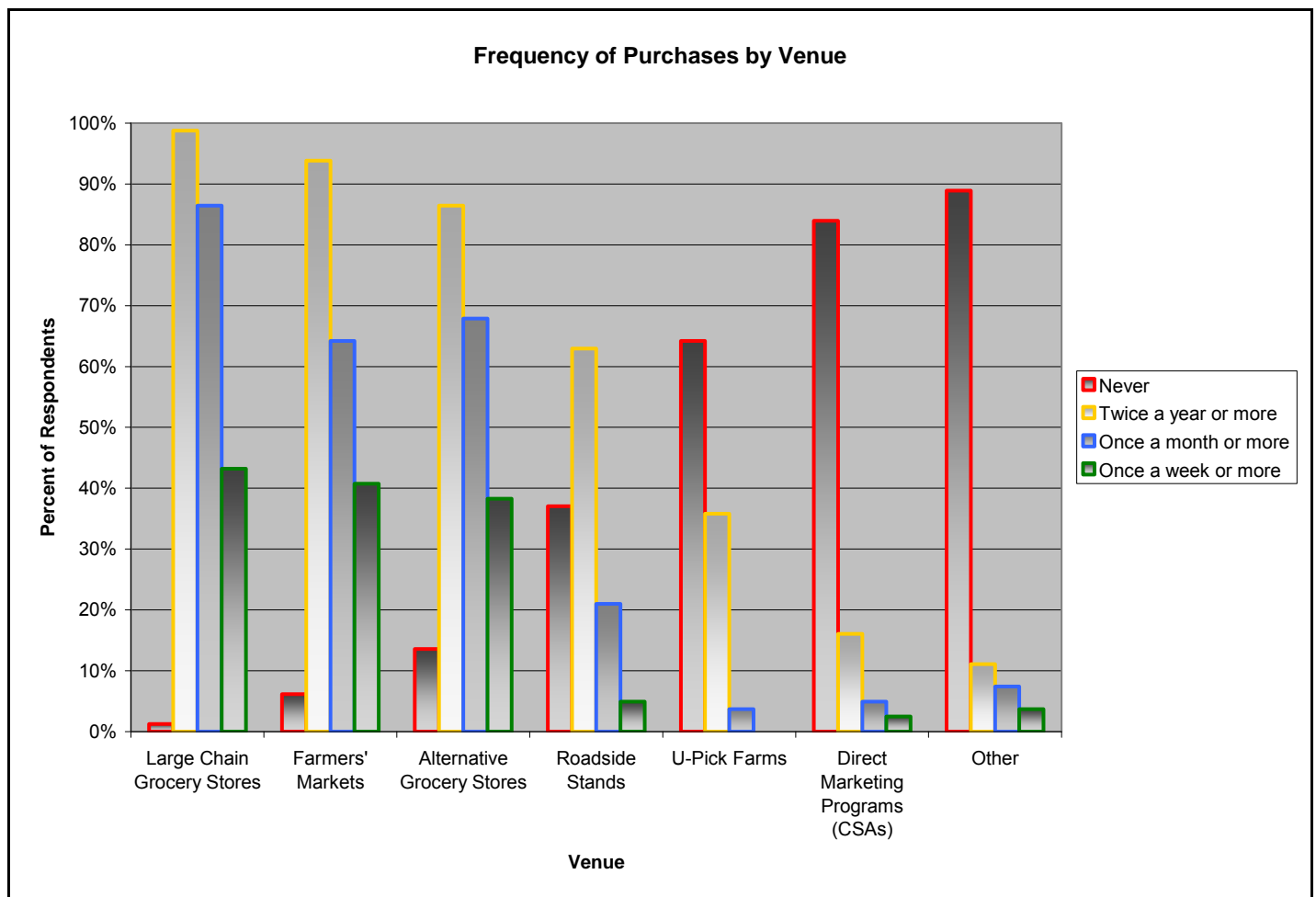| | 1- Never | 2- Twice a year or more | 3- Once a month or more | 4- Once a week or more | Frequent visitor (Group 3 & 4) |
|---|---|---|---|---|---|
| **Large Chain** | 6.25% | 11.46% | 40.63% | 41.67% | 82.29% |
| **Alternative Grocery** | 14.58% | 17.71% | 31.25% | 36.46% | 67.71% |
| **Farmer's Markets** | 10.42% | 27.08% | 27.08% | 35.42% | 62.50% |
| **Roadside Stands** | 41.67% | 38.54% | 15.63% | 4.17% | 19.79% |
| **Direct Marketing** | 83.33% | 12.50% | 2.08% | 2.08% | 4.17% |
| **U-Pick** | 68.75% | 28.13% | 3.13% | 0.00% | 3.13% |
| **Other** | 89.58% | 3.13% | 3.13% | 4.17% | 7.29% |



Figure 2. Reported Frequency of Fruit & Vegetable Purchases by Venue, Gainesville, FL.

*Simple Willingness-to-Pay Estimate*

The survey included one simple, open-ended willingness-to-pay question. Respondents were asked to consider "two fresh produce items of similar quality, appearance, and freshness"—one non-local and costing $1.00 and the other local. We then asked how much they would be willing to pay for the item that was grown locally. The results are reported in Table 4, Figure 3 and Figure 4 below. Most respondents indicated that they were willing to pay more for a generic "local" product of "similar quality, appearance and freshness" to a non-local counterpart. Only 13.98% of respondents indicated no increased WTP for the local characteristic, while 18.28% were willing to pay up to 1/3 more, 31.18% were willing to pay between 1/3 and 2/3 more, 25.81% were willing to pay between 2/3 and 1 times more, and 10.75% of respondents were willing to pay over 2 times as much for the local version of the generically described product.
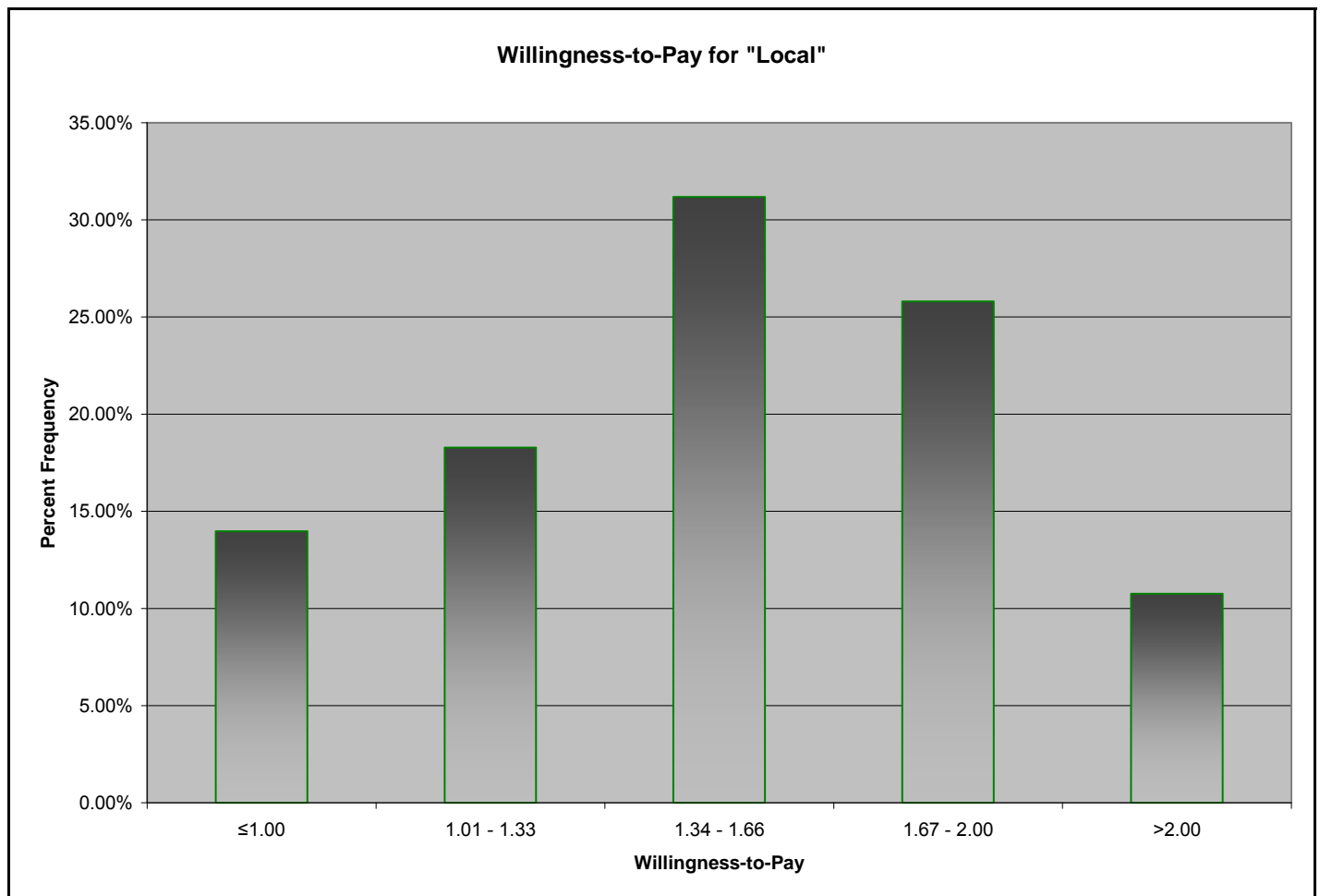


Figure 3. Willingness-to-Pay Premium for "Local" Produce

Table 4. Willingness to Pay for "Local"

| Questions 4-- simple WTP | Percent Frequency |
|---|---|
| ≤1.00* | 13.98% |
| 1.01 - 1.33 | 18.28% |
| 1.34 - 1.66 | 31.18% |
| 1.67 - 2.00 | 25.81% |
| >2.00 | 10.75% |

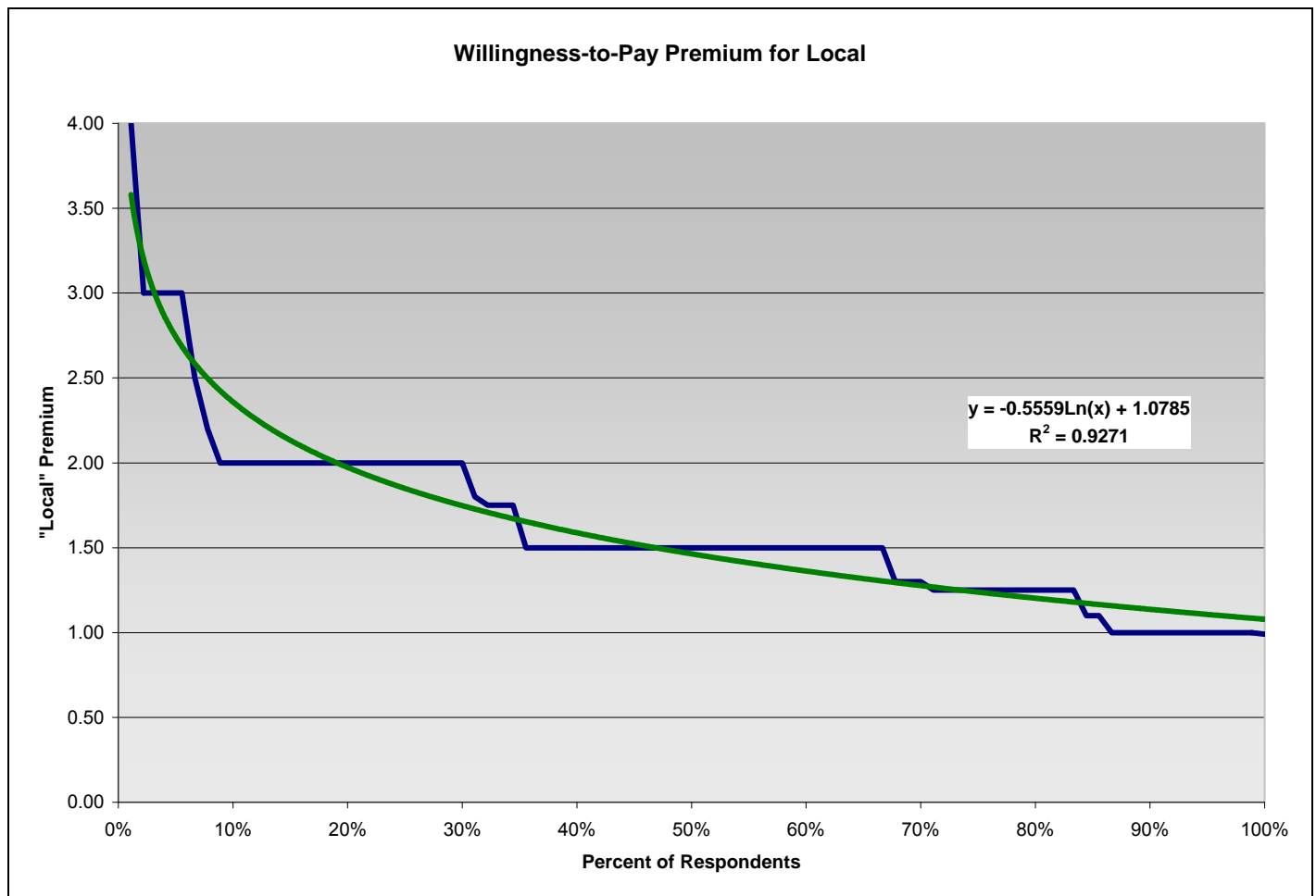*note: only one respondent reported WTP less ($.99) for local.



Figure 4. Willingness-to-Pay Premium for "Local"

The chart titled "Willingness-to-Pay Premium for Local" shows the trend line equation:

$$y = -0.5559 \ln(x) + 1.0785$$
$$R^2 = 0.9271$$

*Likert Scale*

A literature review and discussion with 17 experts revealed 20 factors driving purchases of local over non-local products. From this list, we developed 97 positive and negative statements about local foods and used two rounds of screening tests to eliminate questions with inconsistent answers according to an accepted methodology (Spector, 1991). After the second round, we had 15 statements for our Likert scale with a Cronbach's alpha of 0.931, considered strong (Spector, 1991). Broadly speaking, the Likert scale included questions on five factors: (1) the environment; (2) product quality; (3) farm-worker welfare; (4) Health; and (5) Income. All 15 statements were positive, giving us a uni-directional Likert scale (see Table 5).

Each respondent was asked their level of agreement with each of the 15 questions (1- Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree). We calculated summated scores for each respondent where those with scores above 45 expressed agreement or strong agreement with the positive statements, and those with scores below 45 disagreed or strongly disagreed with the 15 positive statements about local food. Since the scale was uni-directional, we could not measure negative attitudes toward local

Table 5. Local Foods Likert Questions.

| | 1 Strongly Disagree | 2 Disagree | 3 Neutral | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|
| The production of local fruits and vegetables is great for the environment. | 1 | 2 | 3 | 4 | 5 |
| More food-related illnesses are associated with NON-local produce. | 1 | 2 | 3 | 4 | 5 |
| Fruits and vegetables that are grown locally taste a great deal better than produce that is grown far away. | 1 | 2 | 3 | 4 | 5 |
| Produce that comes from local sources is healthier for you. | 1 | 2 | 3 | 4 | 5 |
| Local fruits and vegetables are NOT likely to have been grown with the use of pesticides. | 1 | 2 | 3 | 4 | 5 |
| Local fruits and vegetables are grown in a way that is better for the environment. | 1 | 2 | 3 | 4 | 5 |
| Local produce is usually nicer looking than NON-local produce. | 1 | 2 | 3 | 4 | 5 |
| Local produce has less risk of disease. | 1 | 2 | 3 | 4 | 5 |
| Local farmers treat their employees better than corporate agricultural businesses. | 1 | 2 | 3 | 4 | 5 |
| You can avoid GMO (genetically modified organism) produce if you buy local. | 1 | 2 | 3 | 4 | 5 |
| Buying local produce can help you save money on groceries. | 1 | 2 | 3 | 4 | 5 |
| Produce that comes from local sources is more nutritious. | 1 | 2 | 3 | 4 | 5 |
| Local fruits and vegetables are usually NOT GMO (genetically modified organisms). | 1 | 2 | 3 | 4 | 5 |
| Buying local produce can help support farm workers. | 1 | 2 | 3 | 4 | 5 |
| Local produce usually has a nice color. | 1 | 2 | 3 | 4 | 5 |

food, merely the strength of positive attitudes. Respondents generally agreed with the 15 statements (Likert score mean = 54.18, s = 9.19). A graph of respondents' scores is reported in Figure 5 along with a normal distribution with the same standard deviation (for comparison). Only 12.9% of respondents had Likert scores that indicated a negative perception of local food.

Statements drawing the most disagreement among those with Likert scores above 45 were: (1) "Local fruits and vegetables are NOT likely to have been grown with the use of pesticides" [33.3%]; (2) "Local produce is usually nicer looking than NON-local produce" [24.7%]; (3) "Buying local produce can help you save money on groceries" [21.5%]; and (4) "Produce that comes from local sources is more nutritious" [21.5%].
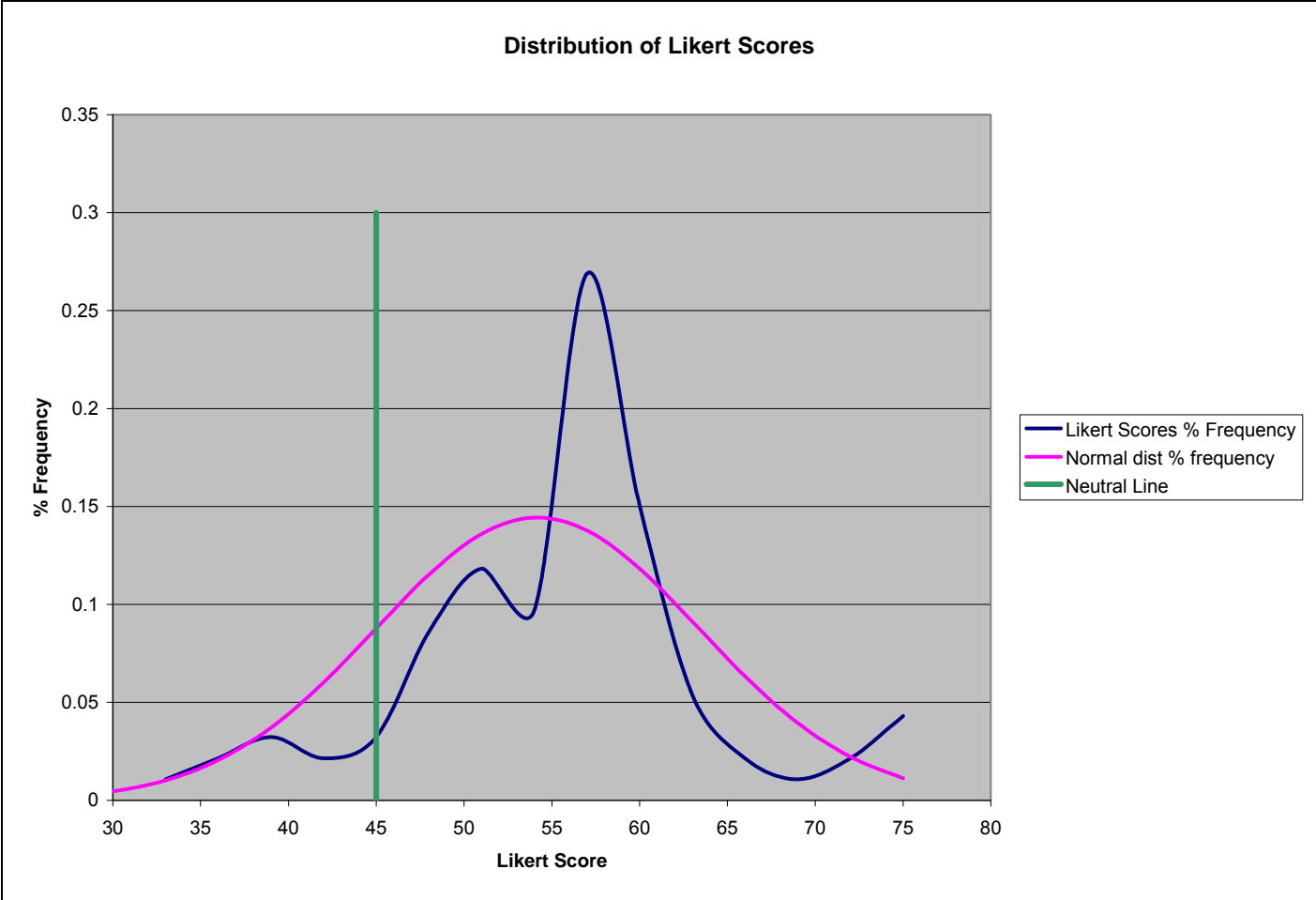


Figure 5. Graph of Raw Likert Scores on Local Food (Note: respondents with scores above 45 are considered to have a positive view of local food; scores < 45 are negative.

*Percent Grown Locally*

We asked respondents to indicated how much (1 – None, 2 – Some, 3 – Don't Know, 4 – Most, 5 – All) of the fruits and vegetables (FV) that they purchase is grown locally. This question serves as a check of internal consistency with later questions on the frequency of purchase of 9 categories of fruits and vegetables. The responses are reported in Figure 6 below. Only 2.2% indicated that "All" and 3.3% indicated that "None" of their FV purchases were grown locally. An equal percent (38.46%) stated that "Some" and "Most" of their FV were grown locally; only 17.58% chose "Don't Know."
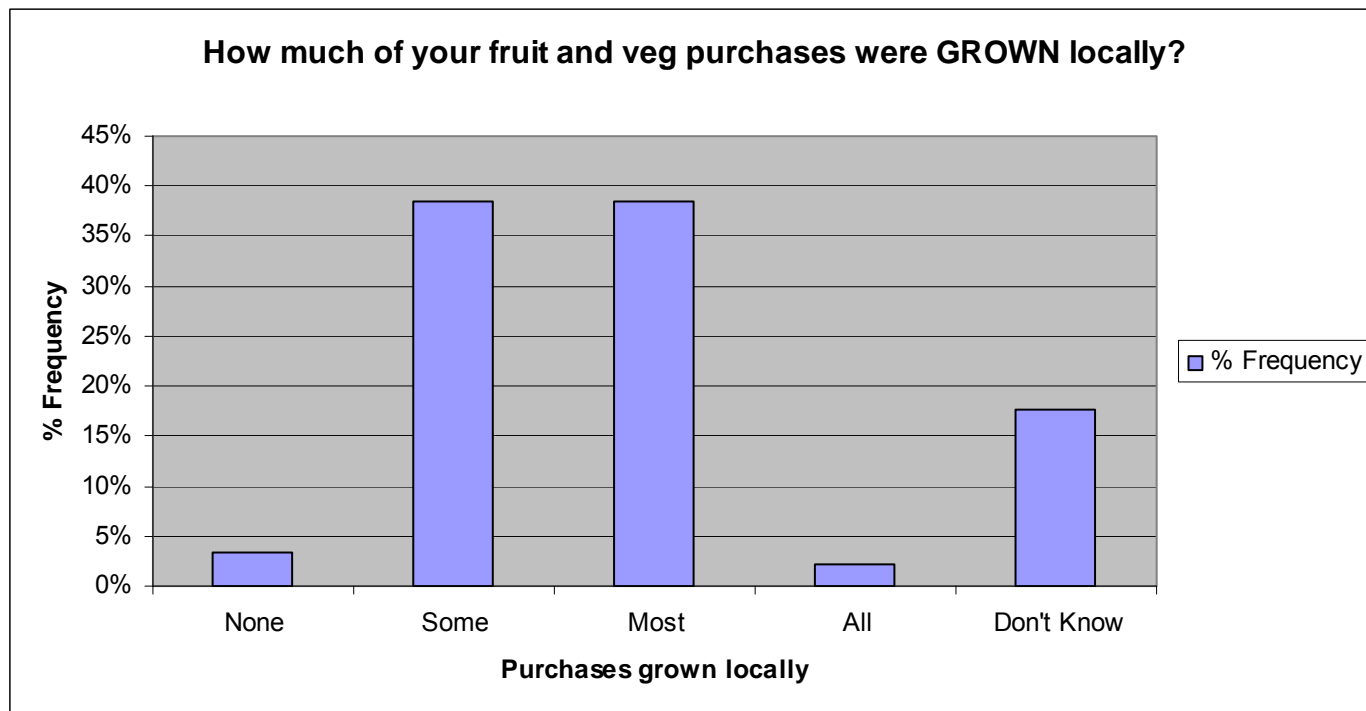


Figure 6. Responses to "How much of the fruits and vegetables you purchase is GROWN locally?

*Cost-Availability Matrix*

We then asked 75 volunteers to list the top ten fruits and vegetables they bought in Alachua County, Florida over the last year. Nine categories were dominant (the ninth lowest was reported by over 42% of respondents). These included apples, bananas, berries, citrus, grapes, greens, carrots, tomatoes, and onions (incl. garlic, leeks). For the nine products, we designed a "cost/availability matrix" to be paired with responses on purchase levels as developed and applied by Swisher [personal communication] to measure each respondent's intensity of local foods purchases. We asked each respondent *i* to indicate how difficult (*d* = 1- *"Just as easy to find"*, 2- *"Slightly more difficult"*, 3- *"More difficult"*, or 4- *"Much more*

*difficult"*) and costly (*c = 1 "Same price or less", 2- "Slightly more costly", 3- "More costly", or 4- "Much more costly"*) local sources of the nine categories of fruit and vegetables were. Non-responses to particular questions on difficulty or cost were treated as "Don't Know." Roughly 14.2% of responses were in this category. Responses to the questions are depicted in Figures 7 and 8 below.

With the exception of berries (4th lowest cost, 3rd highest availability) and greens (3rd lowest cost, 4th highest availability), the categories held the same ranking with respect to both cost and availability. Not surprisingly, citrus and tomatoes were easiest to purchase, and grapes and bananas were most difficult to purchase when considering only cost and availability. This is not surprising given Florida's agricultural production profile. Five local products were rated as "same or less" cost by at least 50% of respondents – citrus, tomatoes, greens, berries and onions/garlic. Carrots were rated "same or less" by 48.8%. Apples, grapes and bananas were considered "same or less" costly by less than 1/3 of respondents. Interestingly, no product category was rated as "much more" costly by over 5% of respondents, and only apples and bananas were rated "more" costly by over 20% of respondents. With regard to availability, four local products were rated as "same or less" difficult to find – citrus, tomatoes berries and greens. Onions/garlic were rated "same or less" difficult to find by 47.6% of respondents. The other four categories were rated as "same or less" difficult to find by fewer than 30% of respondents. Three products – apples, grapes and bananas – were rated by over 20% of respondents as "much more" difficult to find. Generally speaking, availability may be a bigger hurdle to purchasing local food than cost. Only citrus, tomatoes and berries were considered "same or less" costly by roughly the same percent of respondents that considered them "same or less difficult." All other categories showed a higher difficult rating than cost rating, although there was a much higher "Don't Know" rating for the cost questions. Non-responses were under 3% for all but the bananas category (3.5%) for difficulty to find, while the cost questions generate non-responses for six of the product categories. The highest was for grapes and bananas, with 17.9% and 22.6% non-responses, respectively.
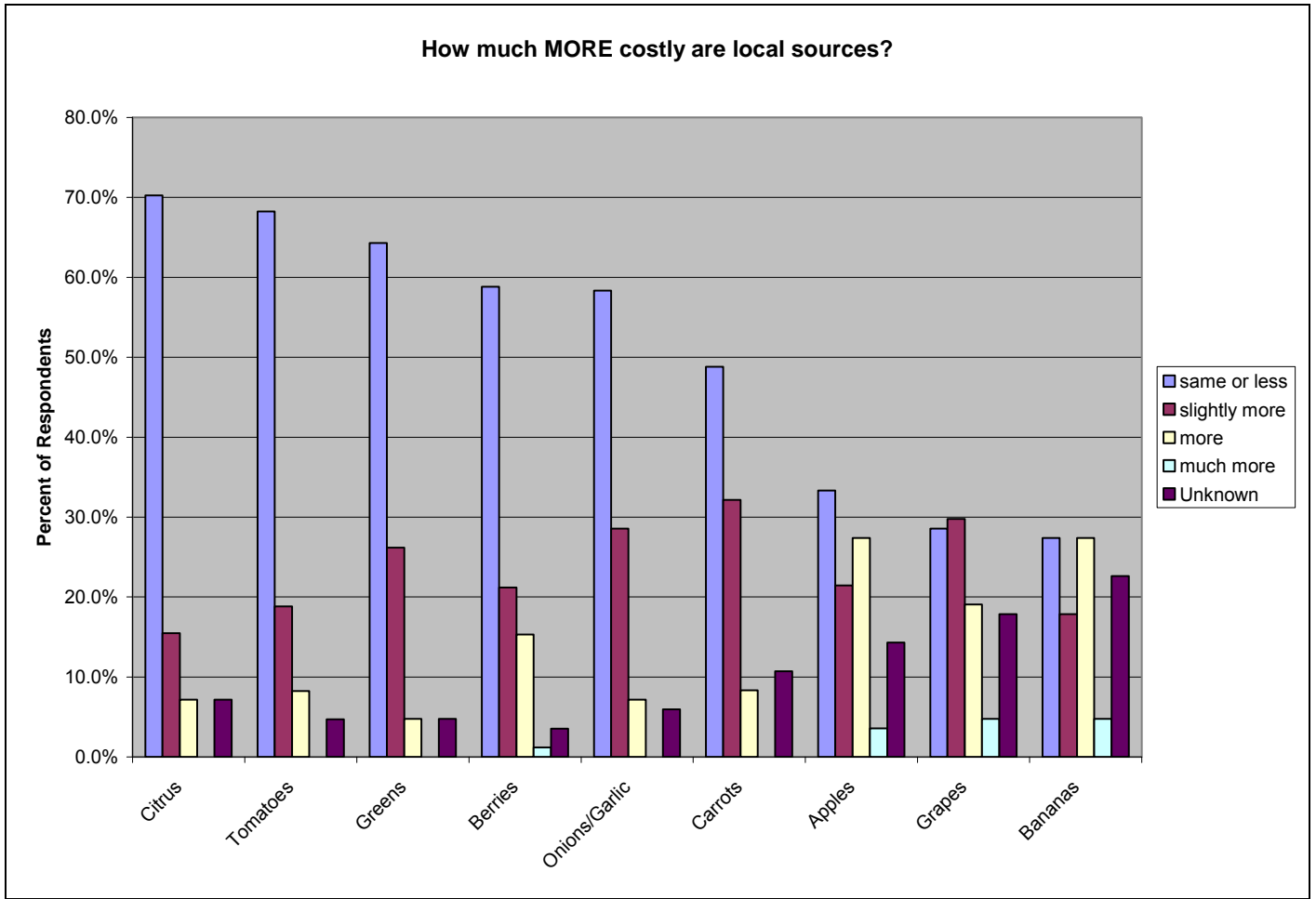
**How much MORE costly are local sources?**

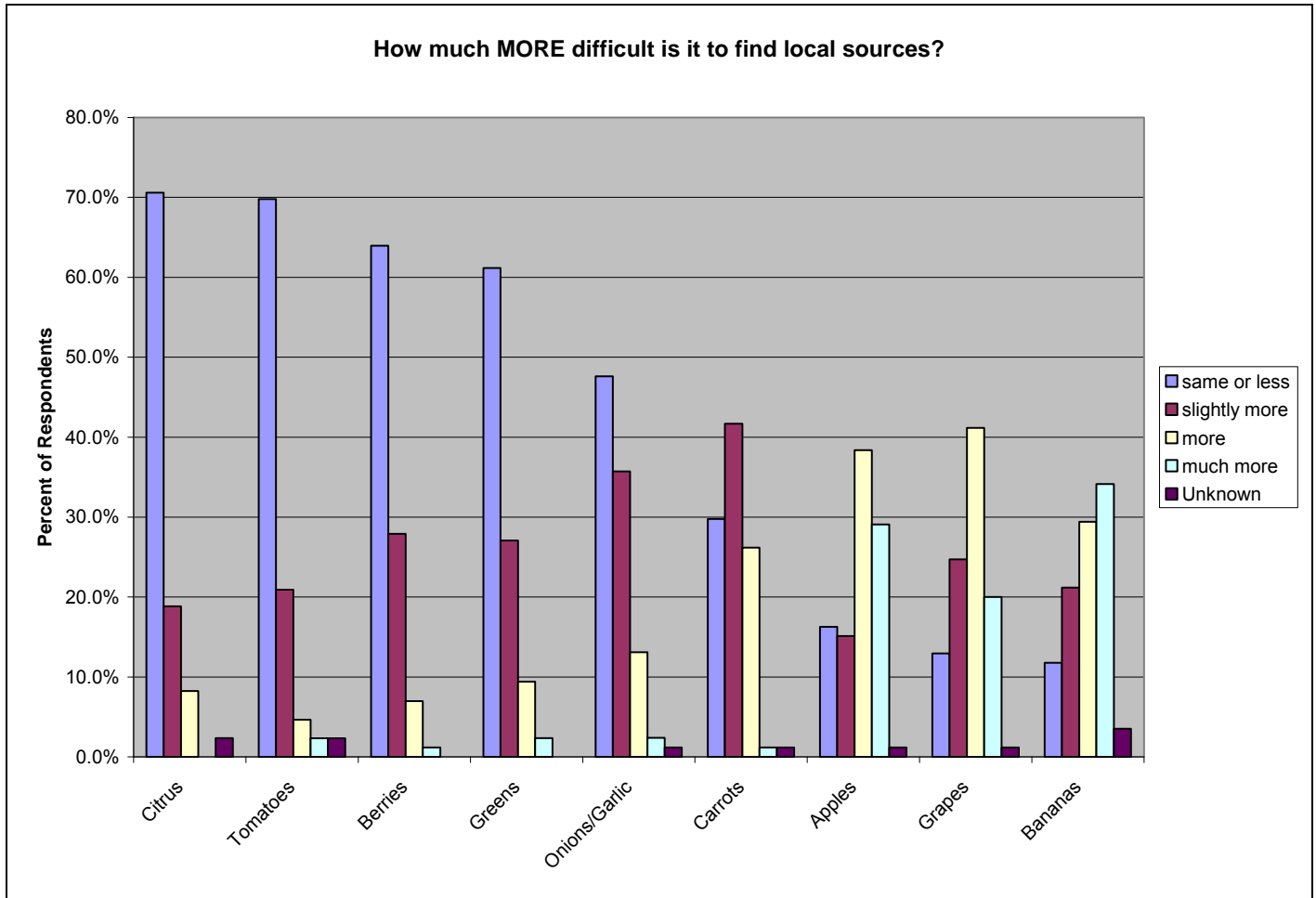Figure 7. Cost of Local versus Non-Local Sources

Figure 8. Access to Local versus Non-Local Sources


*Frequency of Purchases*

We asked respondents "What percentage of the following fruits and vegetables you purchased in the last year were produced LOCALLY?" Responses generally followed the order indicated by the cost/availability matrix questions (See Table 6). Tomatoes, citrus, greens, onions/garlic, and berries purchases were from local sources more than half the time for over 23% of respondents. For citrus and tomatoes, this was the case for over 29.9% of respondents. Carrots, grapes, bananas and apples from local sources – which were also the most costly and most difficult to find – made up "None" of the purchases for over 44% of respondents. For bananas and apples, this was the case for over 58% of respondents. Still, local sources comprised a high proportion of reported purchases for five of the categories. Over 50% of respondents reported that locally-produced purchases made up at least 25% of their purchases were

indicated for the following categories: berries (63.2%), tomatoes (57%), citrus (56.3%), and greens (51.7%). They also made up large shares of purchases for onions/garlic and carrots, with 41.9% of respondents for onions/garlic and 29.1% of respondents for carrots reporting at least 25% of their purchases came from local sources. Very few respondents indicated that "Don't Know" to the questions.

Table 6. "What percentage of the following fruits and vegetables you purchased in the last year were produced LOCALLY?"

| | More than 50% | 25% - 50% | Less than 25% | None | Don't know |
|---|---|---|---|---|---|
| **Tomatoes** | 32.6% | 24.4% | 20.9% | 20.9% | 1.2% |
| **Citrus** | 29.9% | 26.4% | 27.6% | 14.9% | 1.1% |
| **Greens** | 27.6% | 24.1% | 28.7% | 19.5% | 0.0% |
| **Onions/Garlic** | 23.3% | 18.6% | 32.6% | 25.6% | 0.0% |
| **Berries** | 23.0% | 40.2% | 26.4% | 9.2% | 1.1% |
| **Carrots** | 14.0% | 15.1% | 24.4% | 44.2% | 2.3% |
| **Grapes** | 4.6% | 12.6% | 31.0% | 50.6% | 1.1% |
| **Bananas** | 3.4% | 9.2% | 26.4% | 59.8% | 1.1% |
| **Apples** | 1.1% | 9.2% | 29.9% | 58.6% | 1.1% |

*Intensity Measure*

We define the intensity of local food consumption for each respondent as follows:

$$I_{ij} = f(P_{ij}, C_{ij}, D_{ij}) = P_{ij} \bigg/ \sqrt{C_{ij} * D_{ij}}$$

where $I_{ij}$ is calculated intensity measure of respondent $i$ for product category $j$, $C_{ij}$ is the reported cost of local compared to non-local product category $j$ by respondent $i$, $D_{ij}$ is the reported difficulty, and $P_{ij}$ is the percent of reported purchases. Both $P_{ij}$, $C_{ij}$, and $D_{ij}$ are discrete categorical variables defined as:

$$P_{ij} = \begin{cases} 1 & if & None \\ 2 & if & < 25\% \\ 3 & if & 25-50\% \\ 4 & if & > 50\% \end{cases}, \quad C_{ij} = \begin{cases} 1 & if & \text{Much more costly} \\ 2 & if & \text{More costly} \\ 3 & if & \text{Slightly more costly} \\ 4 & if & \text{Same price or less} \end{cases}, \quad D_{ij} = \begin{cases} 1 & if & \text{Much more difficult} \\ 2 & if & \text{More difficult} \\ 3 & if & \text{Slightly more difficult} \\ 4 & if & \text{Just as easy to find} \end{cases}.$$

A higher score indicates a higher intensity to purchase food from local sources as compared to non-local sources. Holding all else constant, a higher percentage of local purchases (numerator) will increase the intensity score; an increase in difficulty or cost (denominator) will also increase the intensity score. For example, a respondent who indicates that they purchase >50% of their carrots from local sources (numerator = 4), when they rated carrots as "Much more difficult" to find and "Much more costly" (denominator = 1) would have a score of 4. A respondent who indicates that they purchase no local carrots (numerator = 1), while carrots are "Just as easy to find" and cost "Same price or less" (denominator = 4) would have a score of 0.25. This is a crude measure of consumers' intensity, but one which conveys the necessary information. By comparing the scores, it can be said that the former consumer is a more intense patron of local foods than the latter.

Intensity scores fell between 0.25 and 2.83. We calculated an average intensity score for each respondent across all nine categories: $\text{Avg } I_i = \exp^{\sum_{j=1}^{9} \log\left( P_{ij} / \sqrt{C_{ij} * D_{ij}} \right)}$. See Figure 9 below. The mean of the average intensity scores was 0.856.
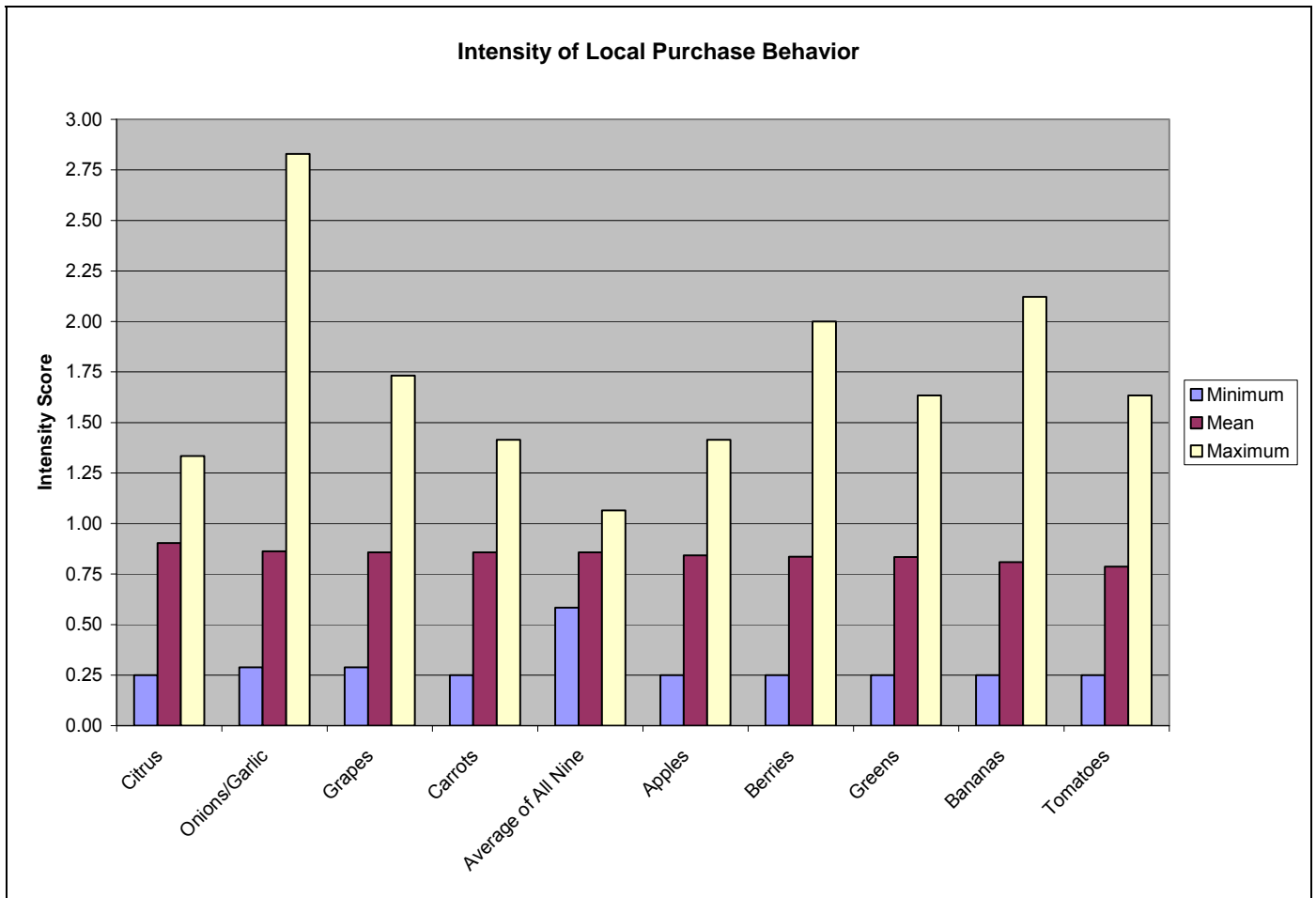
Figure 9. Indicators of Intensity of Local Purchase Behavior

We found that 12.7% of respondent were relatively intense purchasers of local food (log score > 0).

*Demographic Characteristics*

Lastly, we asked demographic questions to observe the respondents (1) gender; (2) age; (3) highest completed educational degree; (4) number of children under the age of 12; (5) ethnicity; (6) annual income; and (7) involvement in environmental, agricultural or civic groups or clubs. The results are reported in Table 7 below. The respondent pool was dominated by females (60.4%); younger adults – under 25 (55.1%), 26 – 35 (19.1%); those with a high school diploma (24.7%) or a bachelor's degree (31.5%); those with no children under 12 (84.4%), whites (80%), those with incomes < 20,000 (41.9%), and those not participating in environmental, agricultural, or civic groups or clubs (66.6%). This profile of respondents is not representative of the 2000 Florida Census, but may be representative of Gainesville, Florida, which is

home to the University of Florida. We must be cautious about making generalizations about local food demands based on this sample, but the results are useful for informing future research on local foods.

Table 7. Responses to Demographic Questions.

| Question 9. Please circle your gender. | Gender | % Frequency |
|---|---|---|
| | Male | 39.6% |
| | Female | 60.4% |
| **Question 10. Please write your age.** | **Age** | **% Frequency** |
| | under 25 | 55.1% |
| | 26 - 35 | 19.1% |
| | 36 - 45 | 4.5% |
| | 46 - 55 | 10.1% |
| | 56 - 65 | 6.7% |
| | over 65 | 4.5% |
| **Question 11. Please indicate your highest completed degree.** | **Education** | **% Frequency** |
| | High School | 24.7% |
| | AA | 18.0% |
| | Bachelor's | 31.5% |
| | Master's | 16.9% |
| | Higher than master's | 9.0% |
| | None of the above | 0.0% |
| **Question 12. Please indicate how many children under 12 you have.** | **Kids under 12** | **% Frequency** |
| | 0 | 84.4% |
| | 1 | 11.1% |
| | 2 | 3.3% |
| | 3 | 0.0% |
| | 4 or more | 1.1% |
| **Question 13. Please indicate your ethnicity.** | **Ethnicity** | **% Frequency** |
| | Asian/Pacific | 4.4% |
| | Black | 5.6% |
| | Hispanic | 5.6% |
| | Native Am. | 4.4% |
| | White | 80.0% |
| **Question 14. Please indicate your household's level of annual income.** | **Income** | **% Frequency** |
| | <20k | 41.9% |
| | 20 - 30k | 14.0% |
| | 30 - 45k | 16.3% |
| | 45 - 70k | 15.1% |
| | 70 - 100k | 5.8% |
| | >100k | 7.0% |

| Question 15. Are you involved in any environmental, agricultural, or civic groups or clubs? | Participation | % Frequency |
|---|---|---|
| | Yes | 33.3% |
| | No | 66.7% |

*Regression Models*

We defined a conceptual model of the impact of attitudinal, behavioral, and demographic variables on willingness-to-pay for local foods. After eliminating observations with omissions, we were left with n = 74 useable observations. To gain degrees of freedom, we eliminated some variables from the model. Our first model is a function of respondents': (1) definition of "local" with respect to distance (Mi) and ownership (Ow); (2) frequency and source of fruits and vegetables, including large chain stores (LC), farmers' markets (FM) and "other" (OT), which respondents defined as gardens; (3) attitudinal Likert scale (LkS); (4) log of the intensity score (Log); and (5) demographic variables, including gender (Gen), age (Age), education (Ed), number of children under 12 in the home (Ch), ethnicity (Et) and whether they belong to civic groups (Gr):

Model 1. $$WTP_i = \alpha + \sum_{a=1}^{2} \beta_a Mi_{ia} + \chi Ow_i + \sum_{b=1}^{2} \delta_b LC_{ib} + \phi FM_i + \varphi Lks_i + \eta OT_i + \kappa Log_i + \lambda Age_i + \mu Gen_i +$$

$$\nu Ch_i + \sum_{c=1}^{4} \pi_c Edu_{ic} + \sum_{d=1}^{2} \theta_d Eth_{id} + \sum_{e=1}^{2} \tau_e Inc_{ie} + \psi Gr_i + \varepsilon.$$

A reduced form of Model 1 was also selected:

Model 2. $$WTP_i = \alpha + \eta OT_i + \kappa Log_i + \mu Gen_i.$$

Parameter estimates, goodness of fit and statistical significance were calculated in Limdep 8.0 and reported for each model.

Model 1 did not perform very well, which was probably due to the very small sample size. It had an R-square of 0.45, a significance of F of 0.0129, a Log likelihood value of -50.61, and an Akaike Information Criterion score of -0.90. Only three of the variables had parameters significant at the 0.05 or 0.10 level of

significant. These were gender (p = .038), "other" [get fruits and vegetables from a garden] (p=.017) and

income between $30,000 and $45,000 (p = .062). See Table 8 below for full parameter estimate results.

Table 8. Parameter Estimates for Model 1.

| Variable | Coefficient | Standard Error | t-ratio | p-value | Mean of X |
|---|---|---|---|---|---|
| Constant | 1.517 | 0.949 | 1.598 | 0.116 | |
| Mi345 | -0.138 | 0.180 | -0.765 | 0.448 | 0.662 |
| Mi67 | 0.315 | 0.531 | 0.593 | 0.556 | 0.027 |
| Ow | -0.180 | 0.176 | -1.020 | 0.312 | 0.689 |
| LC23 | 0.616 | 0.677 | 0.910 | 0.367 | 0.581 |
| LC4 | 0.284 | 0.677 | 0.420 | 0.676 | 0.405 |
| OT | 0.550 | 0.225 | 2.446 | 0.018 | 0.122 |
| FM34 | -0.023 | 0.177 | -0.128 | 0.899 | 0.662 |
| LkS | 0.005 | 0.009 | 0.512 | 0.611 | 54.392 |
| Log | 1.937 | 1.640 | 1.181 | 0.243 | -0.070 |
| Gen | -0.357 | 0.168 | -2.126 | 0.038 | 0.378 |
| Age | 0.004 | 0.006 | 0.618 | 0.540 | 31.081 |
| Ed2 | -0.273 | 0.221 | -1.236 | 0.222 | 0.176 |
| Ed3 | -0.100 | 0.203 | -0.494 | 0.623 | 0.311 |
| Ed4 | -0.421 | 0.268 | -1.574 | 0.122 | 0.176 |
| Ed5 | -0.217 | 0.309 | -0.703 | 0.485 | 0.081 |
| Ch | 0.127 | 0.102 | 1.250 | 0.217 | 0.270 |
| Et2 | 0.172 | 0.345 | 0.497 | 0.621 | 0.054 |
| Et3 | -0.586 | 0.385 | -1.520 | 0.135 | 0.041 |
| In3 | -0.457 | 0.240 | -1.903 | 0.063 | 0.189 |
| Gr | -0.039 | 0.162 | -0.244 | 0.808 | 0.351 |

Model 2 included one variable of particular interest – log intensity score – and the two most

significant variables from Model 1 – gender and "other." This model performed better than Model 1 on all

accounts. Model 2 had an R-square of .55, a significance of F of 0.0000, a Log likelihood of -59.27, and an

AIC of -1.12. See Table 9 below for full parameter estimate results. All three variables in Model 2

performed at or near the 0.05 level of significance.

Table 9. Parameter Estimates for Model 2.

| Variable | Coefficient | Standard Error | t-ratio | p-value | Mean of X |
|---|---|---|---|---|---|
| Constant | 1.967 | 0.112 | 17.520 | 0.000 | |
| OT | 0.650 | 0.198 | 3.288 | 0.002 | 0.122 |
| Log | 2.316 | 1.186 | 1.952 | 0.055 | -0.070 |
| Gen | -0.490 | 0.136 | -3.616 | 0.001 | 0.378 |

The statistically-significant variables have the expected signs. "Other" was an indication that the respondent relied on a garden for some of their fruits and vegetables. These respondents were willing to pay $0.65 more, on average, for local produce as compared to respondents who did not engage in gardening. Engaging in gardening shows a high level of commitment to natural, organic, or local foods. Likewise, respondents with higher intensity scores had higher willingness-to-pay for local food. Lastly, females (Gen = 0) were willing to spend $0.49 more for local food than males. Other models are being investigated and will be reported at a later time.

*Conclusion*

As the 'green' market goes mainstream, it is having a heavy impact on corporate behavior, marketing messages and food sales. New products that dilute the meaning of 'organic' are marketed, causing some consumers to seek local, non-corporate alternatives. The results of this preliminary survey provide some insight for survey design and research on local foods, and help illustrate the complex forces driving local food purchases. The findings from this project are important to the discourse on consumer behavior, particularly in the context of increasingly ideological and experiential purchases, shopping motivations for going to farmers markets, the high willingness to pay for local food, barriers to making actual purchases, and key demographic factors, including young children in the home and low income.

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