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**DE-PLACING LOCAL AT THE FARMERS' MARKET:  
CONSUMER CONCEPTIONS OF LOCAL FOODS**

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ABSTRACT

Demand for local foods is typically explained using traditional product attributes like price, freshness, and taste. However, these factors fail to address more socially-based motivations or barriers to purchases. We administered a survey at two farmers' markets (FMs) in Florida. The survey included: (1) respondents' local produce purchases; (2) perceived cost and difficulty in accessing those products; (3) a Likert scale that measured attitudes toward local food; (4) a willingness to pay measure; (5) a definition of *local* by distance and ownership; and (6) frequency of produce purchases from traditional and alternative venues. A two-stage cluster analysis revealed three distinct groups of FM shoppers, and highlighted important characteristics that influence demand for local foods. These purchases are driven more by accessibility and attitudes than by traditional demand factors such as cost and willingness to pay. The results provide insight for future research on local foods, and help illustrate the complex forces driving local food purchases.

Extant research has identified the importance of understanding consumer behavior and preferences for alternative foods. Analysts have paid particular attention to consumers' willingness to pay for, and perceptions of, organic foods as an alternative to conventionally-grown produce and processed items. Economic studies have confirmed that organic food consumers are motivated by concerns for the environment, health and safety, and traditional product attributes such as price, taste, appearance, and freshness (Adams and Salois 2010). However, comparatively less research has examined consumers' attitudes, experiences, and impressions of *local* foods as empirically separate from organic. As organic foods are increasingly becoming associated with large, corporate agribusinesses (Sligh and Christman 2003), many consumers interested in supporting small, family-owned farms are turning to localized food sources such as farmers' markets, cooperatives, and community-supported agriculture (CSA) programs as a source of fresh produce. To gain a better understanding of this growing consumer base in the United States, it is crucial that we examine the complex forces driving local food purchases. We already know that consumers are willing to pay higher prices for local foods (Darby et al. 2008), and that many people would prefer buying local versus non-local

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produce (Loureiro and Hine 2002; Schneider and Francis 2005; Toler et al. 2009; Zepeda and Leviten-Reid 2004). Also, we know that barriers such as inconvenience and lack of accessibility often prevent consumers from purchasing local foods (Stephenson and Lev 2004). However, what is unclear from previous work is how consumers conceptualize the term *local* for fresh produce (i.e., fruits and vegetables that have not been processed or preserved), and how this conceptualization interacts with their purchasing behavior. We extend the literature by examining southeastern U.S. consumers' geographical and qualitative understanding of local foods for fresh produce. Moreover, we identify who is buying local and why, and we analyze barriers that may prevent the purchase of local foods.

In 2007, we administered a consumer intercept survey at two farmers' markets (FMs) in Gainesville, Florida. The purpose of the survey was to gain a deeper understanding of consumers' perceptions about local foods, and barriers to local food purchases. Survey questions included: 1) respondents' local food purchases in nine fruit and vegetable categories; 2) consumers' perceived cost and difficulty in accessing those products; 3) a Likert scale that measured attitudes for local food on five themes: environmental protection, product quality, farm-worker welfare, health, and cost/income; 4) a willingness to pay measure; 5) frequency of fruit and vegetable purchases from various traditional and alternative venues; and 6) a definition of *local* by distance and ownership. The survey also asked for participants' demographic information. We used a two-stage cluster analysis to describe three distinct groups of FM shoppers. Besides reporting the typical high willingness to pay premium for local foods, we highlight shopping motivations and barriers to making actual purchases.

### WHY BUY LOCAL? CONSUMER PERCEPTIONS AND MOTIVATIONS

#### *Operationalizing Local*

Until recently, the term "organic" has been associated with alternative or localized food sources in the United States. However, in the past few decades, the growing market for organically-produced foods has motivated managers of conventional, corporate agribusinesses to tap into this new consumer base (Mitchell 2009). Whereas organic food was once synonymous with community support, farm-worker welfare, environmental stewardship, and sustainability (Buck, Getz, and Guthman 1997; Allen and Sachs 1991), the core messages of the organic movement were largely co-opted and commodified into effective marketing campaigns that greatly increased the market share of organic foods (Adams and Shriver 2010; Jaffee and Howard 2010). According to Sligh and Christman (2003), concentration in the

organic food industry has left a handful of “organic giants” that outcompete small family farms. Just two national distributors share about 80 percent of the organic food market. Rather than serving as an alternative to industrial agriculture, organic has largely been subsumed by it. As Delind (2000:204) noted, “organics without a social vision is dangerously incomplete.” Currently, alternative agriculture advocates delineate between “organic lite” as opposed to deep organic, with the former offering little more than would satisfy minimal government production standards (i.e., The Organic Food Production Act of 1990), and the latter offering products whose purchase supports more holistic, ethical, and sustainable farming systems (Guthman 2004; Morgan, Marsden, and Murdoch 2006).

Many consumers now recognize “industrialized organic” as incomplete, and have turned to alternative sourcing for food. A significant demand has arisen for “local” food as a source of more environmentally friendly, healthier, or more economic agricultural products. Even popular media, such as Time magazine, have dubbed local food as the “new organic” (Cloud 2007:45), and some members of the alternative agro-food movement seek out local food sources in rejection of the industrialization of organic foods (Hamer 2008). For these consumers, local food, whether organically or conventionally produced, is more defensible from corporate co-optation or opportunistic greenwashing (Buttel 1992; Francis et al. 2007). Importantly, activists and others engaged in “locavorism” and alternative food sourcing often seek out localized production operations that specifically support environmental protection and local economic development.<sup>1</sup> In these scenarios, food production, transportation, purchase, and consumption that support a civic food system do not leave room for industrial production, organic or otherwise (Kloppenburg, Hendrickson, and Stevenson 1996; Lyson and Guptill 2004). Advocates of these types of localized food systems stress the importance of eating close to home to reduce externalities (Kloppenburg et al. 1996; Selfa and Qazi 2005) and strengthen communities (Lyson and Guptill 2004). Moreover, the new emphasis on *local* has gained interest from many producers who did not embrace organic certification, preferring instead to operate based on trust with their consumers (Constance, Choi, and Lyke-Ho-Gland 2008).

Although a clear trend toward interest in local foods has emerged, consumers’ conceptualization of what *local* actually means is inconsistent. The Hartman Group

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<sup>1</sup>Some analysts have highlighted consumer associations with localized food sources as a “local trap,” or the “tendency of food activists and researchers to assume something inherent about the local scale” (Born and Purcell 2006:195). However, for the purposes of this paper, we focus on the food production operations that are both “local” and “civic” in nature.

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(2008) found that 37 percent of respondents defined *local* as “made or produced in my state,” while 50 percent defined it as “made or produced within 100 miles.” The remaining 8 percent were evenly split between “within my region (e.g., New England)” or “in the USA.” Brown (2003) also found a fluid definition of *local*. In Missouri, 14 percent of respondents restricted it to their county, 14 percent restricted it to their county and an adjoining county, 12 percent considered products produced anywhere in the state as locally grown, 37 percent defined the concept as within the southeast Missouri region, and 23 percent defined it as including southern Illinois and southeast Missouri. By contrast, Gallons et al. (1997) reported that 87 percent of respondents agreed that food fit their definition of *locally grown* when it was produced within their state of Delaware, compared with 48 percent when the definition was expanded to include two surrounding states. A focus group study by Harris et al. (2000) found a diversity of opinions, including distances as close as near their city limits, and as far as 200 miles from home. Ownership is also an important characteristic of local food—70 percent said that local produce could only come from farms *owned* locally.

*Economic Factors*

The increasing demand for local foods is driven by complex forces that economic, sociological, and geographical analyses attempt to describe in very different ways. Until very recently, most studies of the demand for alternative food used narrow and rigid parameters, focusing only on the most obvious reasons like health of the consumer and the environment. These might include consumers’ perceptions of, and attitudes toward, organic foods (Krystallis and Chrysohoidis 2005), or willingness to pay (WTP) for foods with different levels of pesticide contamination (see review by Thompson 1998). In particular, economic studies of *local* food demand have focused primarily on the traditional factors that drove demand for organic and other mainstream foods. These studies estimated WTP for local foods, with emphasis on price, quality, taste, convenience, and coarse demographic characteristics defined in very strict economic terms (Jackson, Russell, and Ward 2004). Thus, our review of the literature indicates that characteristics that were once strong predictors of WTP for organic foods have been very weak indicators of local food purchases.

Recent economic studies clearly establish that consumers are willing to pay a price premium for local foods; sometimes, these studies have included a small farm attribute, or an equity component. For example, Darby et al. (2008) conducted consumer intercept surveys at Ohio FMs and traditional grocery stores. They found

that consumers at grocery stores were willing to pay a \$0.67 premium per package of strawberries grown “nearby or in Ohio,” and an additional \$0.28 if the berries were from “Fred’s Berry Farm” rather than “Berries Inc.” Direct (e.g., farmers’) market consumers were willing to pay \$1.18 for the local attribute, and \$0.64 for the small farm attribute. Loureiro and Hine (2002) and Schneider and Francis (2005) found similar preferences for local foods among FM shoppers. Zepeda and Leviten-Reid (2004) and Toler et al. (2009) found that this was true for both FM and grocery store shoppers. Toler et al. (2009) reported a higher WTP for local than for non-local produce, but they also found that WTP is very sensitive to equity and fairness. Specifically, the findings of that study provided evidence that consumers of local produce are concerned about supporting poorer farmers. This is particularly true for FM shoppers. In addition, convenience may be a bigger barrier to buying local food than high price (Stephenson and Lev 2004).

These studies illustrate an important turn in the demand for local foods. Before the USDA organic standards enactment, researchers found very little support for the importance of characteristics associated with local food. Govindasamy, Italia, and Liptak (1997) found that consumers ranked *locally grown* and *country of origin* among the least important of 19 product characteristics. Their results showed that freshness, taste/ flavor, cleanliness, health value, and absence of pesticides were rated most important, and respondents clearly preferred low-input methods of production. Unfortunately, their survey did not include factors such as supporting small farmers/communities, farm worker welfare, animal welfare, or other ethical or value-based variables. Schneider and Francis (2005:253) reviewed the literature from 1984–2003 and argued that preferences for local food before 2003 were “rather inconclusive, indicating both weak and strong consumer preferences.” However, their study illustrates the turn from organic to local, finding that “all-natural” and “organic” were rated as least important among characteristics of locally-produced foods that included: quality, taste, nutritious and healthy, price, environmentally friendly, and several local or “place” variables (Thilmany, Bond, and Bond 2008).

#### *Non-economic Factors*

An alternate line of literature on local foods focuses on equity-driven factors identified with social movements, such as food justice, animal welfare, and fair trade. Hinrichs (2000) argued that direct markets (FMs, etc.) rely on a sense of social capital “embeddedness,” which includes trust and reciprocity. Whereas the corporate co-optation of *organic* caused a decline in this social capital, *the local food movement* actors attempt to rebuild it. Local food is often associated with supporting

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local economies and the environment (Brown 2003). Gabriel and Lang (1995) argued that the turn to ethical consumerism is a new (fourth) wave of alternative consumerism. For example, Allen's (2006) survey of California residents showed that besides *certified organic*, consumers' most requested new food labels – *humane*, *locally grown*, and *living wage* – would primarily relate to ethical consumerism. Although organic, local, and other forms of alternative consumerism draw from similar concerns about the state of our environment (Bell and Valentine 1997) and the food distribution system overall, they are distinct and may serve very different needs (e.g., see Allen 2006).

Factors not closely affiliated with organic food are major motivations for local food purchases. Support for local farmers rates highest (Stephenson and Lev 2004) or second highest (Darby et al. 2008; Kezis et al. 1998) among important reasons for purchasing local food (from FMs, CSAs, etc.). Concern for equity is high even among non-FM shoppers (Zepeda and Leviten-Reid 2004; Toler et al. 2009). These equity considerations of local food systems are not associated with “organic lite,” yet have been comparatively glossed over in the literature. Other important factors include consumer activism through purchases (e.g., Seyfang 2006), verification of the positive effect of their purchases (Teisl, Noblet, and Rubin 2007), and trustworthiness of local food (Seyfang 2006). Roberts (1996) suggested that civic consumer behavior is significantly affected by “perceived consumer effectiveness” (PCE), which is the degree to which a consumer believes his or her purchases actually influence some person, policy, etc. Roberts (1996) found that about a third of the variation in civic consumer behavior was explained by PCE, while general concern for the environment had much less explanatory power.

There is a recognized need for research on motivations for buying local in both economic and sociological contexts (Thilmany et al. 2008). Indeed, some studies in the broader economics literature have explicitly incorporated disciplinarily non-traditional factors in their analyses (e.g., Darby et al. 2008; Toler et al. 2009). Only recently have studies found that “fairness” is important to purchasers of organic (Lusk and Briggeman 2008) and local food (Toler et al. 2009). In the present study, we examine these factors as well as investigate the perception of cost and availability of local foods to explore how such perceptions and attitudes influence purchasing decisions. The purpose of our survey was to gain a deeper understanding of consumers' perceptions about local foods and barriers to local food purchases.

## METHODS AND ANALYSIS

*Survey Design*

We developed, pretested and implemented a local foods survey using standard techniques (Dillman 2000). We designed the survey based on a review of: (1) existing literature on organic and local foods, (2) interviews with local foods activists and marketers, and (3) a pretest that included shoppers at a local grocery store. In the first two survey questions, we sought a definition of local food using food miles and ownership. The first item asked respondents to indicate their definition of *local* by how far from their home it was grown. The second was a true/false question about the statement “local produce can ONLY come from farms *owned* locally.” We did not include a question that measured *local* by farm size, as this was largely captured by the attitudinal scale described below.

Fifteen questions measured attitudes toward local versus non-local food by asking respondents to indicate their level of agreement with statements on a 5-point scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree). A literature review and communication with 17 experts on the topic revealed 20 factors driving purchases of local over non-local foods. 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 (Spector 1991). After the second round, we had 15 statements for our Likert scale with a strong (Spector 1991) Cronbach's alpha of 0.931. Broadly speaking, the Likert scale included 15 positive questions on five themes, giving us a unidirectional Likert scale, similar to other local food attitudinal indicators (e.g., Zepeda and Leviten-Reid 2004). Reliability analysis indicated high internal consistency and reliability for the scale (Cronbach's alpha and Spearman-Brown coefficient each  $>.90$  for the scale; item-to-total correlations for all but two items exceeded 0.40). Although five themes were represented in the scale, factor analysis revealed that the items were highly interrelated, and the scale could not be further categorized into indices.

In the survey questionnaire we asked respondents how much they would be willing to pay for a local produce item of “similar quality, appearance, and freshness” as a non-local item costing \$1.00. The survey also asked about shopping behaviors and perceptions. One question determined how frequently shoppers purchase fruits and vegetables at various venues, including FMs, large chain stores, alternative (e.g., health food) grocery stores, roadside stands, community-supported agriculture programs (CSAs), u-pick operations, and “other.” We also asked respondents to indicate how much of the produce they purchase was grown locally. We examined local food purchasing behavior by measuring the relative cost, availability, and



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percentage of local food purchases for nine commonly purchased fruits and vegetables. During the preliminary stages of our survey design, we asked consumers to indicate their ten most frequent fruit and vegetable purchases in Alachua County, Florida over the preceding 12 months. Nine categories were dominant (the ninth lowest was reported by more than 42 percent of respondents): apples, bananas, berries, citrus, grapes, greens, carrots, tomatoes, and onions (including garlic and leeks). Drawing from these results, we designed questions that prompted survey respondents to indicate how easy or difficult the local versions of these products were to buy in comparison to similar non-local ones. We also asked the same question regarding cost for each of the nine products. We purposefully omitted a “don’t know” option, because we wanted to measure respondents’ subjective assessments of these questions. Respondents were then asked to estimate what percentage of these nine fruits and vegetables that they purchased over the last year were produced locally.

The final section of the survey included seven demographic questions that relate to local food attitudes and purchasing behavior (e.g., Jekanowski, Williams, and Schiek 2000; Wolf, Spitler, and Ahern 2005). These included gender, age, education, number of children in the household under 12 years old, ethnicity, income, and a yes/no question regarding participation in environmental, agricultural, or civic groups.

The survey questionnaire was reviewed by four survey experts (researchers on faculty at the University of Florida and Oklahoma State University who specialize in survey design), and pretested at a local grocery store (n=13). The sampling frame consisted of adult FM shoppers at two FMs in Gainesville, Florida. Student teams administered the questionnaire in July of 2007. The authors and six undergraduate research assistants, in teams of two, administered the survey at both of the farmers’ markets in two-hour increments. Using a standard approach, we conducted intercept surveys (see for example Darby et al. 2008; Loureiro and Hine 2002; Wolf et al. 2005), and approached roughly every third shopper that passed by our booth. Ninety-seven responses were collected (n=97).

### *Cluster analysis*

We performed a two-stage cluster analysis on the survey data. Not all respondents completed cost, access, and frequency of purchase questions for all nine produce categories. Rather than exclude respondents that only completed some questions, we calculated a simple index across all nine categories. Additionally, few respondents indicated that they visit FMs and/or alternative grocery stores less

than once a month. After testing to ensure that there were no significant differences between collapsed categories, we collapsed the responses into dummy variables that indicated when respondents visited each venue at least once a month. We also collapsed food mile categories: “ $\leq 30$  miles” includes responses that indicated within 10 miles or within 30 miles; “ $\leq 100$  miles or more” includes within 100 miles, within Florida, within the southern region of the United States, and within the United States. This was necessary due to the low number of responses to certain categories (e.g., only 1 percent for within the United States). Lastly, the Likert scale violated the additivity assumption (Tukey’s  $F=23.955$ ,  $p<0.000$ ). We transformed the scale item observation (raised to power of 2.601 to achieve additivity).

To determine the final number of clusters, we considered three criteria: (1) statistical properties in terms of within-cluster and between-cluster variance, (2) interpretive ease and plausibility, and (3) the number of respondents per cluster (e.g., Hollenstein 2003). The result containing two clusters was inferior on criterion (2), and the result with four clusters was inferior on all criteria. Based on these criteria, we used three clusters with each cluster representing a group of respondents that were largely similar to members of the same cluster, and different from other clusters.

## CONSUMER PERCEPTIONS, ATTITUDES, AND LOCAL PURCHASES

### *Demographics*

The margin of error (amount of random sampling error) for our sample is  $\pm 10$  percent at the 95 percent level of confidence. The respondent pool was dominated by females (60 percent), younger adults (49 percent were  $\leq 25$  years old), college graduates (58 percent), those with no children under 12 (86 percent), whites (80 percent), those with household incomes under 20,000 (42 percent), and those not participating in civic groups or clubs (67 percent) (Table 1). This profile of respondents is not representative of the 2000 Florida Census, as Gainesville, Florida is home to a large state university and a community college. Thus, 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, particularly those available at farmers’ markets.

### *Definition of “Local” by Food Miles and Ownership*

The term *local* is relatively fluid. Three percent of respondents said that local food had to come from within ten miles of the purchase, 28 percent said within 30 miles, 42 percent said within 50 miles, and 21 percent said within 100 miles. Six

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TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

VARIABLE	CLASS	FREQUENCY
Age.....	Mean	31.9
	18-24	49%
	25-29	15%
	30-49	19%
	50-65	12%
	65 and older	4%
Gender. ....	Male	40%
	Female	60%
Education. ....	H.S. or less	24%
	Some college or vocational school	18%
	College grad	32%
	Masters or higher	26%
Income.....	Less than \$20,000	42%
	\$20,000-\$30,000	14%
	\$30,000-\$45,000	16%
	\$45,000-\$70,000	15%
	\$70,000-\$100,000	6%
	Over \$100,000	7%
Ethnicity.....	Asian or Pacific Islander	4%
	Black/African American	4%
	Hispanic/Latino	10%
	Native American	1%
	White/Caucasian	80%
Children under 12. ....	0	86%
	1	11%
	2 or more	3%
Civic group member. ....	Yes	33%

percent of respondents said that they considered local food to come from anywhere in Florida, whereas only 1 percent said that local food could come from anywhere in the southeast region and another 1 percent said that it could come from anywhere within the United States. This finding is consistent with other studies (Brown 2003; Gallons et al. 1997; Harris et al. 2000; Hartman Group 2008). In terms of ownership, 70 percent of respondents agreed that local produce could only come from farms *owned* locally.

#### *Attitudes toward Local Foods*

The Likert scale included 15 questions covering five themes: (1) environmental protection; (2) product quality; (3) farm-worker welfare; (4) health; and (5) cost. A test of common means indicated that all items do not have the same mean

(Hotelling's T-squared=287.715,  $F=17.549$ ,  $p<0.000$ ). Attitudes toward local foods were very positive. The overall mean for the items was 3.62 on a 5-point interval scale (Table 2). 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 all the items in the scale were

TABLE 2. SUMMARY STATISTICS FOR LIKERT SCALE ITEM RESPONSES

THEME	STATEMENT	MEAN	SD
Environment...	The production of local fruits and vegetables is great for the environment.	4.40	0.75
	Local fruits and vegetables are grown in a way that is better for the environment.	3.47	1.01
	Local fruits and vegetables are usually NOT GMO (genetically modified organisms).	3.56	0.91
	Local fruits and vegetables are NOT likely to have been grown with the use of pesticides.	2.97	1.03
Health.....	You can avoid GMO (genetically modified organisms) produce if you buy local.	3.44	1.02
	Produce that comes from local sources is healthier for you.	3.78	0.99
	More food-related illnesses are associated with NON-local produce.	3.63	0.94
	Local produce has less risk of disease.	3.38	0.93
	Produce that comes from local sources is more nutritious.	3.38	1.03
Product cost and quality.....	Fruits and vegetables that are grown locally taste a great deal better than produce that is grown far away.	3.91	0.94
	Local produce is usually nicer looking than NON-local produce.	3.18	1.02
	Local produce usually has a nice color.	3.73	0.81
	Buying local produce can help you save money on groceries.	3.39	1.05
	Farmworker welfare.....	Buying local produce can help support farm workers.	4.17
Local farmers treat their employees better than corporate agricultural businesses.		3.69	0.87
Overall. ....		3.62	0.38

NOTE: 1=strongly agree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree

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unidirectional, we did not measure negative attitudes toward local food, merely the strength of positive attitudes. Respondents generally agreed with all 15 statements (Likert scale score mean=54.23, s=9.33). Scores ranged from 31 to 75. A vast majority (87.1 percent) had Likert scale scores at or above 45, and almost half (48 percent) of the scores were between 55 and 64. Statements drawing the most disagreement among those with scores above 45 were: (1) “Local fruits and vegetables are NOT likely to have been grown with the use of pesticides” (33.3 percent); (2) “Local produce is usually nicer looking than NON-local produce” (24.7 percent); (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 percent).

*Shopping Behaviors and Perceptions*

Respondents were asked to indicate how frequently they bought fruits and vegetables from the following sources: (1) large chain grocery stores; (2) alternative grocery (e.g., health food) stores; (3) farmers’ markets; (4) roadside stands; (5) direct marketing programs (e.g., community supported agriculture); (6) u-pick farms; and (7) “other” (Table 3). Respondents more typically patronized large chain and alternative grocery stores for their vegetable and fruit shopping. More than a third of the respondents indicated purchasing fruits and vegetables from large chain grocery stores (42 percent), alternative grocery stores (36 percent), and FMs (35 percent) at least once a week. These percentages nearly double for once a month purchases. Nearly two-thirds of respondents (62 percent) were frequent purchasers of fruits and vegetables at FMs. Interestingly, 10 percent of respondents “never” purchased fruits or vegetables at a FM over the last year, perhaps visiting for entertainment or products other than fruits and vegetables. More than a third (35 percent) of respondents who purchased fruits and vegetables at FMs made these purchases at least once a week, while an additional 27 percent did so at least once a month. More than 82 percent of respondents frequently made fruit and vegetable purchases at large chain grocery stores (42 percent  $\geq$  once a week; 82 percent  $\geq$  once a month). Sixty-eight percent did so at alternative grocery stores (36 percent  $\geq$  once a week; 68 percent  $\geq$  once a month). On average, about 20 percent of respondents bought from roadside stands at least once a month, and most (58 percent) did so at least once a year. Direct marketing, u-pick operations, and home gardens made up a small minority of consumers’ food sources.

We asked respondents to indicate how much of the produce they purchase is grown locally (1-none, 2-some, 3-don’t know, 4-most, and 5-all). This question was used to check internal consistency against questions about purchases of nine

TABLE 3. FREQUENCY OF PRODUCE PURCHASES BY VENUE

	NEVER	TWICE A YEAR OR MORE	ONCE A MONTH OR MORE	ONCE A WEEK OR MORE	FREQUENT VISITOR (GROUP 3 & 4)
Large chain. ....	6%	11%	41%	42%	82%
Alternative grocery.	15%	18%	31%	36%	68%
Farmers' markets...	10%	27%	27%	35%	63%
Roadside stands. ....	42%	39%	16%	4%	20%
Direct marketing (e.g., CSAs). ....	83%	13%	2%	2%	4%
U-Pick. ....	69%	28%	3%	0%	3%
Other (e.g., personal gardens). ....	90%	3%	3%	4%	7%

produce categories. Only 2 percent indicated “all” and 3 percent indicated that “none” of their produce was grown locally. An equal percent (38 percent) stated that “some” and “most” of their produce was grown locally; only 18(38 percent) chose “don’t know.” We asked what percent of purchases over the last year were local in nine produce categories: apples, bananas, berries, citrus, grapes, greens, carrots, tomatoes, and onions (Table 4). Tomatoes, citrus, greens, onions/garlic, and berry purchases were from local sources more than half the time for more than 23 percent of respondents. For citrus and tomatoes, this was the case for 30 percent of respondents. Carrots, grapes, bananas, and apples from local sources made up none of the purchases for 44 percent of respondents. For bananas and apples, this was the case for 58 percent of respondents. Still, local sources comprised a high

TABLE 4. PERCENTAGE OF NINE FRUITS AND VEGETABLES PURCHASED FROM LOCAL SOURCES WITHIN THE LAST YEAR

PRODUCT	≥ 50%	25% - 50%	< 25%	NONE	DON'T KNOW
Tomatoes.....	33%	24%	21%	21%	1%
Citrus.....	30%	26%	28%	15%	1%
Greens.....	28%	24%	29%	20%	0%
Onions/Garlic.....	23%	19%	33%	26%	0%
Berries.....	23%	40%	26%	9%	1%
Carrots.....	14%	15%	24%	44%	2%
Grapes.....	5%	13%	31%	51%	1%
Bananas.....	3%	9%	26%	60%	1%
Apples.....	1%	9%	30%	59%	1%

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proportion of reported purchases for five of the categories. Many respondents reported that locally-grown purchases made up at least 25 percent of their purchases for berries (63 percent), tomatoes (57 percent), citrus (56 percent), greens (52 percent), and onions/garlic (42 percent).

### *Cost and Availability*

Respondents rated cost (1-same or less, 2-slightly more, 3-more, and 4-much more) and difficulty of accessing (1-same or less, 2-slightly more, 3-more, and 4-much more) nine local fruits and vegetables in comparison to non-local versions. We used a question construction that simultaneously asked perceptions on cost and availability rating scales for each product (Table 5). Products perceived as least accessible were generally perceived as most costly, and vice versa. Not surprisingly given Florida's agricultural profile, local citrus and tomatoes were judged least expensive and least difficult to find compared with the other product categories. Five of the local products (citrus, tomatoes, greens, berries, and onions/garlic) were rated as "same or less" costly by most respondents. Carrots were rated "same or less" by 49 percent. Less than a third of the respondents considered apples, grapes, and bananas "same or less" costly. Interestingly, no product category was rated as "much more" costly by more than 5 percent of respondents, and only two products (apples and bananas) were rated "more" costly by more than 20 percent of respondents.

In terms of accessibility, every product category had an average difficulty-of-access rating that was higher than its cost rating<sup>2</sup> (Table 5). Four local products were rated "same or less" difficult to find by most respondents (citrus, tomatoes, berries, and greens); 48 percent gave this rating for onions/garlic. Apples, grapes, and bananas were rated "much more" difficult to find by more than 20 percent of respondents (compared with 5 percent for cost). Availability may be a bigger hurdle to purchasing local food than cost. A simple linear regression of the average access, cost, and purchases ratings indicates that access (coeff=-0.97, p=0.0008), but not cost (p=0.3094), is a statistically significant predictor of purchases ( $R^2=0.964$ , p=0.0000, df=8).

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<sup>2</sup>Our analysis of access perceptions only included responses for products purchased. It is possible that nonresponses to the access question led to an underestimation of the importance of access on purchasing local foods.

TABLE 5. MEAN PERCEPTIONS OF ACCESS AND COST OF NINE LOCAL FRUITS AND VEGETABLES.

PRODUCT	ACCESS (MEAN)	COST (MEAN)
Citrus.....	1.33	1.23
Tomatoes.....	1.35	1.31
Berries.....	1.45	1.31
Greens.....	1.53	1.52
Onions/Garlic.....	1.68	1.37
Carrots.....	1.96	1.38
Grapes.....	2.66	1.64
Apples.....	2.78	1.73
Bananas.....	2.79	1.64

*Willingness to Pay*

In the survey questionnaire we asked respondents to consider “two fresh produce items of similar quality, appearance, and freshness,” one non-local and costing \$1.00 and the other local. We asked how much they would be willing to pay for the item grown locally. Eighty-six percent of respondents were willing to pay more for a local product, and most were willing to pay much more: 18 percent would pay up to a third more, 31 percent would pay between one-third and two-thirds more, 26 percent would pay between two-thirds and 100 percent more, and 11 percent of respondents were willing to pay more than twice as much for the local version of the described generic product priced at \$1.00.

## WHO BUYS LOCAL FRUITS AND VEGETABLES? RESULTS OF A TWO-STAGE CLUSTER ANALYSIS

A two-stage cluster analysis indicated that our respondents could be classified into three distinct groups (see Tables 6 and 7). Groups were clustered according to Schwarz's Bayesian Criterion (minimum  $SBC=2639.695$  at three clusters; see Schwarz 1978). Cluster 1 members were much less positive or supportive of local food, they purchased it less frequently, and they were more likely to define it through ownership than food miles. They were also much younger and more ethnically diverse than other clusters. Respondents in clusters 2 and 3 were much more positive about local food and were willing to pay much more for it than were respondents in cluster 1. They also purchased local food much more frequently. Cluster 2 had the most limited definition of local food in terms of food miles, and of all the clusters, found local food to be the most difficult and costly to purchase. Members of this group were much older than members of cluster 1, and compared to both clusters 1 and 3, they were often in a much higher income bracket, were



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TABLE 6. SUMMARY OF CLUSTER CHARACTERISTICS

CHARACTERISTIC	DESCRIPTION	CLUSTER 1 CLUSTER 2 CLUSTER 3 OVERALL			
		(n=38)	(n=19)	(n=21)	(n=78)
Percent of total.....	-	49%	24%	27%	n/a
Food miles <sup>1</sup> . ....	≤30	29%	58%**	10%	31%
	≤50	39%	11%**	67%**	40%
	≤100 or more	32%	32%	24%	29%
Ownership. ....	True	79%	63%	62%	71%
Likert (adjusted). ....	Mean	445.04	536.06	547.28	494.74
Price premium. ....	Mean	0.48 <sup>†</sup>	1.00	1.07	0.76
Access, 9 items. ....	Mean	1.93	2.10	1.87	1.95
	(1-4 scale)				
Cost, 9 items. ....	Mean	1.65	1.81	1.33**	1.60
	(1-4 scale)				
Local purchases, 9 items. ....	Mean	1.96 <sup>†</sup>	2.44	2.85 <sup>†</sup>	2.32
	(1-4 scale)				
Local purchases, generically. ....	Most/all	13% <sup>†</sup>	47%	100% <sup>†</sup>	45%
	Some	50%	47%	0% <sup>†</sup>	36%
Farmers markets. ....	≥1/mo	42% <sup>†</sup>	84%	95%**	67%
Alternative grocery.	≥1/mo	58%	79%	90%	72%
Roadside stands. ....	≥1/yr	42%**	79%	86%*	63%
Direct marketing					
program (e.g., CSA). ....	≥1/yr	8%	26%	24%	17%
	U-pick farm. ....	≥1/yr	16%**	53%	52%
Other (e.g., personal					
garden). ....	≥1/yr	3%	11%	19%	9%
Age. ....	Mean	27.21	43.84 <sup>†</sup>	40.52**	30.27
Gender. ....	Male	45%	21%	43%	38%
Education. ....	High school or less	45%**	5%	10%	26%
	AA or tech.	8%	0%	52% <sup>†</sup>	18%
	Bachelor's	37%	21%	33%	32%
	Master's or higher	11%	74% <sup>†</sup>	5%	24%
Children. ....	1 or more	13%	37%*	5%	17%

TABLE 6. SUMMARY OF CLUSTER CHARACTERISTICS (*continued*)

Characteristic	Description	CLUSTER			OVERALL
		1 (n=38)	2 (n=19)	3 (n=21)	(n=78)
Income.....	≤20,000	47%	0% <sup>†</sup>	86% <sup>†</sup>	46%
	20,000-30,000	16%	21%	0%	13%
	30,000-45,000	16%	37%*	5%	18%
	45,000-70,000	5%	26%*	5%	10%
	≥70,000	16%	16%	5%	13%
Ethnicity.....	African Am.	3%	0%	5%	3%
	Asian/Pac. Is.	5%	0%	5%	4%
	Caucasian	68%	100%*	86%	79%
	Hispanic/ Latino	21%	0%	5%	12%
	Native Am.	3%	0%	3%	1%
Civic group member.	Yes	13%**	63%**	43%	33%

NOTES: <sup>†</sup>statistically significant different proportion from overall at 99% C.I., \*\* at 95% C.I., and \* at 90% C.I. <sup>1</sup>For the cluster analysis, we collapsed food mile categories: “≤ 30 miles” includes responses that indicated within 10 miles or within 30 miles; “≤ 100 miles or more” includes within 100 miles, within Florida, within the southern region of the United States, and within the United States. This was necessary due to the low number of responses to certain categories (e.g., only 1 percent for within the United States).

TABLE 7. STATISTICALLY SIGNIFICANT BETWEEN-CLUSTER DIFFERENCES

CHARACTERISTIC	CLUSTER			1 VS. 2			1 VS. 3			2 VS. 3		
	(N=38)	(N=19)	(N=21)									
Cost, 9 items	1.65	1.81	1.33				**					
Local purchases, 9 items	1.96	2.44	2.85									
Age	27.21	43.84 <sup>†</sup>	40.52			**					†	

NOTE: <sup>†</sup>statistically significant different proportion from overall at 99% C.I., \*\* at 95% C.I., and \* at 90% C.I.

much more likely to be women, to have children, and to be members of civic clubs. Furthermore, all were Caucasian. Cluster 3 members were most positive about, and willing to pay the most for, local food. Their definition of *local* by food miles was somewhat less restrictive than cluster 2, they viewed local food as relatively easier to access and much less costly than did those in the other clusters, they were highly dedicated purchasers of local food (100 percent indicated that most or all of their fruit and vegetable purchases were grown locally), and they were very frequent

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shoppers at non-traditional food venues. They were very likely to have either a bachelor's or associate's degree, and despite their high mean age, the vast majority of these respondents were in the lowest income bracket.

*Cluster 1: Youth and Inexperience, Lower WTP, Less Support for Local Foods*

Cluster 1 includes almost half (49 percent) of the respondents. Members of cluster 1 were more evenly divided than the other two clusters on the definition of *local* by food miles: 29 percent said that local food should be grown within 30 miles (also includes those who said within 10 miles), 39 percent said within 50 miles, and 32 percent said that food grown within a 100 miles or more (also includes food produced within Florida, the Southeast, and the United States) can be considered *local*. They had more consensus than other clusters in their definition of *local* by ownership: 79 percent said that food can only be called *local* if it is grown on a farm owned locally. This cluster is much less positive or supportive of local food than clusters 2 or 3. Their mean adjusted Likert score shows a very positive view of local food, but significantly less so than the other clusters. They also report a price premium for local food that is less than half what other clusters would pay: +\$0.48 more for a generic local fruit or vegetable when the non-local counterpart cost \$1.00. Respondents in this cluster report that, on average, nine fruits and vegetables were roughly "slightly more" difficult to find (1.93), but somewhere between "same or less" and "slightly more" costly (1.65). These values were higher than for cluster 2, but lower than for cluster 3.

Members of this cluster purchased much less local produce than did members of the other clusters. On average, "less than 25 percent" (1.96) of fruits and vegetables that they buy are grown locally. Only 13 percent of this group indicated purchasing "most" or "all" locally-grown fruits and vegetables, which is less than a third of the level reported by cluster 2, and eight times less than that reported by cluster 3. They were also much less likely than clusters 2 or 3 to make at least monthly visits to FMs (42 percent) or alternative grocery stores (58 percent), or to make at least yearly visits to roadside stands (42 percent), u-pick farms (16 percent), or to participate in community supported agriculture (8 percent) or to garden (3 percent).

Cluster 1 was much younger (27 years) than either cluster 2 (by 17 years) or cluster 3 (by 14 years), and 45 percent were male. Perhaps reflecting their age, this cluster had, on average, the least amount of formal education of the clusters: high school or less (45 percent), associate's or technical degree (8 percent), bachelor's degree (37 percent), and master's degree or higher (11 percent). A small percentage

(13 percent) indicated having children, which was nearly three times less than cluster 2, but three times more than cluster 3. Income levels for cluster 1 were much lower than for cluster 2, but somewhat higher than for cluster 3. Nearly half (47 percent) indicated making less than \$20,000 per year, but there was a wide distribution among higher income levels. This cluster was more ethnically diverse than clusters 2 or 3. Although 68 percent of this cluster was Caucasian, Hispanics made up 21 percent, Asians comprised 5 percent, and African Americans and Native Americans made up 3 percent each. Lastly, members of this cluster were more than four times less likely than cluster 2 and three times less likely than cluster 3 to be members of civic, environmental, or agricultural clubs (13 percent).

*Cluster 2: Wealthier, Civic-Minded Women; More Supportive of Local, but with More Difficulty Accessing*

Twenty-four percent of respondents fell into cluster 2. These respondents were much more likely than clusters 1 or 3 to have a more restrictive definition of *local* by food miles. Over half (58 percent) said that local food must be grown within 30 miles, 11 percent said within 50 miles, and 32 percent said within 100 miles or more. As with clusters 1 and 3, a high percentage (63 percent) of this cluster said that *local* meant the food was produced on a farm *owned* locally. This percentage is somewhat lower than for cluster 1, but nearly identical to cluster 3. This group reported a very positive view of local food (mean adjusted Likert score = 536.06), and on average was willing to pay a 100 percent price premium for local food. These percentages are significantly higher than for cluster 1, and very similar to the responses from cluster 3. This group indicated the most relative difficulty and highest cost for the nine fruit and vegetable categories among the clusters. They rated nine local fruits and vegetables as “slightly more” difficult to find (2.10), and between “same or less” and “slightly more” costly (1.81) than non-local counterparts.

Members of cluster 2 were frequent purchasers of local foods. They reported buying much more local food than did members of cluster 1, but much less than members of cluster 3. On average, cluster 2 reported buying between “less than 25 percent” and “25 percent–50 percent” (2.44) of nine fruits and vegetables from local sources. Nearly half (47 percent) said that “most” or “all,” and another 47 percent said “some,” of the fruits and vegetables they buy were grown locally. This cluster was much more likely than cluster 1 and somewhat less likely than cluster 3 to visit non-traditional venues for their fruit and vegetable purchases. Eighty-four percent indicated making at least monthly purchases at FMs, and 79 percent indicated at

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least monthly shopping at an alternative grocery. They were much more likely than cluster 1 and almost as likely as cluster 3 to shop at least once a year at roadside stands (79 percent) or u-pick farms (53 percent), to be members of CSAs (26 percent), or to garden (11 percent).

Members of this cluster averaged 44 years old, which was 17 years older than cluster 1, and a few years older than cluster 3. This cluster had nearly twice the proportion of females than the other clusters: women made up 79 percent of the cluster. They were also much more highly educated than the other clusters. Seventy-four percent of this group had a master's degree or higher and 21 percent held bachelor's degrees. None held associate's or technical degrees, and only 5 percent reported having a high school education or less. More than a third (37 percent) of cluster 2 reported having children 12 years old or younger. This is a much higher rate than for other clusters. Cluster 2 had much higher income levels. No respondents in this cluster reported earning less than \$20,000 per year. Twenty-one percent were in the \$20,000-\$30,000 income bracket, 37 percent earned \$30,000-\$45,000, 26 percent earned \$45,000-\$70,000, and 16 percent earned more than \$70,000 per year. This group was ethnically homogenous: 100 percent were Caucasian. They were also much more likely than cluster 1 and more likely than cluster 3 to indicate membership in civic, environmental, or agricultural clubs (63 percent).

*Cluster 3: Less Wealthy, Highly Motivated, and Most Dedicated Local Food Shoppers*

Cluster 3 included 27 percent of 78 respondents. Their definition of *local* by food miles and ownership was generally less restrictive than clusters 1 or 2. Based on food miles, 10 percent said that local food should be grown within 30 miles, 67 percent said within 50 miles, and 24 percent said within 100 miles or more. In terms of ownership, 62 percent said that food must be produced on a farm owned locally to be called *local*, which was roughly equivalent to cluster 2, but somewhat lower than cluster 1. They viewed local food much more positively (mean adjusted Likert score = 547.28), and were willing to pay more than other clusters for it (\$1.07 price premium). They also saw local food as less difficult to access and less costly than other groups did. They perceived nine local fruits and vegetables as between "same or less" and "slightly more" difficult to access (1.87), and roughly "same or less" costly (1.33).

Members of cluster 3 were much more frequent purchasers of local foods than other clusters. For nine fruits and vegetables, they indicated that roughly 25-50 percent of their purchases were grown locally (2.85). They also indicated that

“most” or “all” of the fruits and vegetables that they purchased over the last year were grown locally (100 percent). A high percentage of this cluster made at least monthly purchases at FMs (95 percent) and alternative grocery stores (90 percent), and at least two purchases per year at roadside stands (86 percent) and/or u-pick farms (52 percent). They are also somewhat likely to be members of direct marketing programs such as CSAs (24 percent) and to obtain food from other sources such as personal gardens (19 percent).

This cluster was, on average, 41 years old, which was older than cluster 1 (by 14 years), and younger than cluster 2 (by 3 years). They were very likely to have an associate’s or technical degree (52 percent), or a bachelor’s degree (33 percent), as opposed to having a high school education or less (10 percent) or a master’s degree or higher (5 percent). They were least likely to have children (5 percent), and most likely to be in the lowest income bracket. Eighty-six percent indicated making less than \$20,000 per year, with the rest evenly distributed among the \$30,000–\$45,000, \$45,000–\$70,000, and the >\$70,000 brackets. This group was much less diverse than cluster 1, but somewhat more diverse than cluster 2. Eighty-six percent of this cluster was Caucasian, with the rest evenly distributed among Asian (5 percent), African American (5 percent), and Hispanic (5 percent) ethnicities. Nearly half (43 percent) indicated membership in civic, environmental, or agricultural clubs, which was fewer than cluster 2, but much more than cluster 1.

## DISCUSSION AND CONCLUSIONS

Concerns regarding the food system in the United States encompass a broad spectrum of complex and changing issues. Many American consumers are motivated to purchase produce and food products that will ultimately support local communities, sustainable growing methods, and ethical work practices within the food system (e.g., Adams and Salois 2010; Adams and Shriver 2010). Our survey of Florida farmers’ market visitors provides evidence that the effect of traditional demand factors for conventional and even organic foods may be overshadowed by other factors in the context of local foods. Since the farmers’ markets we sampled are located in a city dominated by university employees and students, we caution against broadly interpreting the results. However, our exploration of Florida consumers’ perceptions, attitudes, and willingness to pay for local produce provides insight into the multidimensional motivations and barriers to buying local. Moreover, our study empirically delineates *local* as opposed to organic, an important distinction often overlooked in previous literature. Following prior work regarding consumers’ willingness to pay and their varied conceptualizations of

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local, our study provides insight into the relationship between these important variables. We argue that consumers' motivation for seeking out local, organic, or otherwise alternative foods cannot be understood in strict economic or social terms. Rather, the intersection between their beliefs and perceptions about the food system dynamically interact with economic, access, and other types of barriers to purchasing local foods. Studies have begun to highlight these complex interactions (e.g., Gregory and Gregory 2010; Toler et al. 2009; Zepeda and Leviten-Reid 2004), but much more work is needed in this area.

The findings of this study highlight the complexity of consumers' conceptualizations of *local*. While the U.S. federal government has provided strict, measurable, and quantifiable parameters for labeling products as *organic*, the idea of local foods is a much more fluid and dynamic concept. Our results are consistent with previous studies that indicate a wide range of interpretations of *local* in the context of food miles. Our instrument added the important aspect of ownership to add insight into how consumers define this concept. This is particularly relevant in areas like Florida, where agricultural production may be located within 50 miles of one's residence, but corporate offices that *own* the operation may be located states away. Indeed, 70 percent of respondents made this distinction. Drawing on previous work that identifies *fairness* as an important demand factor for local foods (Lusk and Briggeman 2008; Toler et al. 2009), we argue that consumers may use the term *local* as a value-based descriptor, rather than a simple measure of food miles. The term extends beyond government standardization to encompass ethical, sustainable, and community factors that may vary among consumer groups, or even individuals.

Our cluster analysis provides insight on several important factors regarding who is buying local and why. Consistent with other studies of willingness to pay for local foods, we found that respondents were willing to pay a very large price premium for local foods. Average price premiums for local foods within each cluster were 48 percent (cluster 1), 100 percent (cluster 2), and 107 percent (cluster 3), and the *overall* average was 76 percent. This is strong evidence that farmers' market shoppers are, on average, willing to pay much more for local produce. We also found that the impacts of cost and access were contradictory. As expected, the cluster that perceived local as least costly and easiest to access (cluster 3) were the most frequent purchasers of local fruits and vegetables; but, the cluster that reported the highest average perception of local as more costly and more difficult to access (cluster 2) also reported very frequent purchases of local food. This latter cluster was younger and was more likely to frequent alternative food stores. These findings may indicate an interesting dichotomy in motivation for buying local

produce. Specifically, these clusters describe a significant portion of the local food consumer base driven by economic motivators – they buy local because they perceive that it is more affordable. In contrast, there is a group who is community-minded and buys local although they perceive it is more expensive. Interestingly, 10 percent of the farmers' market respondents reported that they never purchase fruits and vegetables from farmers' markets.

Our use of cluster analysis to examine who buys local produce via farmers' markets illustrates the importance of acknowledging the intersectionality of individual characteristics in understanding food-purchasing behavior. While previous studies isolated demographics such as race or income level as explanatory variables, our results paint a more nuanced picture of farmers' market shoppers. However, our results point to important questions for future research. First, while the results of our Likert scale were logical (e.g., farmers' market shoppers feel positive about local foods), this rigorous measure could provide insight into more heterogeneous samples of consumers. A comparative study using this scale to compare alternative food source shoppers with mainstream grocery store shoppers would allow for a deeper understanding of the general public's conceptualization and perception of local foods. However, we acknowledge that the unidirectional nature of the Likert scale is a potential limitation and may be an area for future research.

Second, the findings point to an interesting dichotomy in those who attend farmers' markets. Our findings demonstrate the importance and complexity of consumer behavior in the context of increasingly values-based purchases. To expand our understanding of consumer behavior in this context, we must begin to address important questions such as: What are the true *underlying* factors that motivate people to seek out alternative foods? What are the intersections between perceptions of economic efficiency and the image of being a "farmers' market shopper?" We suggest that our results could be used to expand the scope of inquiry to include other types of alternative food seekers such as community supported agriculture program members, those who "grow their own," and urban gardeners.

#### AUTHOR BIOGRAPHIES

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