

CONSUMER PREFERENCE FOR ORGANIC AND LOCAL FOOD PURCHASES: LESSONS FOR
LEAFY GREEN VEGETABLE MARKETS IN GREATER AUSTIN

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ABSTRACT

Although demand is increasing, organic and local foods still maintain a relatively small portion of the market. In an effort to provide information to Texas markets, this thesis sought to increase understanding of consumer preferences and purchasing behaviors by synthesizing existing literature in the U.S. and elsewhere, and analyzing survey data collected in the Greater Austin area. In conclusion, initial analysis supports the literature which suggests consumers have positive attitudes toward both organic and local foods, and that quality (freshness), location of store, and price may be the most important attributes associated with purchasing leafy greens. In addition, this analysis found organic and local claims to be potential complements in this market, that environmental concern is a positive factor associated with organic and local purchase frequency, and that demographics play an overall insignificant role in predicting purchasing behavior.

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Introduction

Consumer demand for organic products has steadily risen since the 1990s (Organic Trade Organization [OTC], 2016). In 2016, organic sales in the United States reached nearly \$47 billion, an increase of \$3.7 billion from 2015. Organic food now comprises 5.3% of food sales in the United States, and fruits and vegetables constitute 40% of those organic sales (OTC, 2017). The organic sector propels economic growth and may be especially helpful in vitalizing rural economies (OTC, 2016). Between 2004 and 2010, premiums for organic fruits and vegetables ranged between 7% and 60% for organic spinach and organic salad mix, respectively. Average organic premiums are a minimum of 20% above nonorganic prices. Increased demand and strong premiums indicate continued growth for organic foods (Carlson & Jaenicke, 2016).

Meanwhile, in Texas, only one in 1900 farms are certified organic and only 61 Texas certified organic farms produce specialty crops – fruits, vegetables, and tree nuts. Forty of these farms produce organic vegetables. A study conducted in partnership with the University of Texas Rio Grande Valley estimated in 2015, \$412 million were spent in Texas grocery stores on organic fruits and vegetables (National Center for Appropriate Technology [NCAT], 2017). In a 2016 organic sales summary, Texas producers reported only \$7 million in total vegetables sales (National Agriculture Statistics Service, 2017). These figures represent millions of dollars in opportunity for Texas producers and suppliers (NCAT, 2017).

Given the disparity between organic produce supply versus demand within Texas, and the increasing demand for both organic and local foods, an investigation into

Texas consumers of organic produce, in this case, organic leafy greens, and those consumers' preferences and purchase behaviors, will provide valuable information to Texas producers and suppliers (Low et al., 2015; NCAT, 2017; Racine, Mumford, Laditka & Lowe, 2013). Understanding who organic consumers are, what they value, where they purchase organic foods, and other purchasing patterns will provide insights to noncertified Texas producers to help them decide whether to certify. Moreover, this information will help shape marketing strategies for leafy green vegetables. The objective of this study was to identify consumer preferences and purchasing behaviors of organic and local foods in order to provide information to the leafy green vegetable markets of Greater Austin.

In order to fulfill these objectives, two activities were conducted: 1) a synthesis of existing literature, and 2) an analysis of survey data collected in the Greater Austin area. The methods, findings, and conclusions of both activities are presented in the forthcoming sections. The literature review was intended to examine and identify important factors related to organic purchases in the United States and elsewhere. Survey data collected in the Greater Austin area of Texas, focused on organic leafy green purchases and preferences, was also analyzed. A discussion follows relating results from the survey in Greater Austin to existing literature. The findings and comparisons to existing research is expected to provide valuable information to Texas producers and suppliers.

Synthesis of Existing Literature: U.S. and Global Perspectives

Methodology

In order to examine available literature regarding organic and local food purchasing, academic articles were found using key word searches. Articles were then evaluated for relevance. An initial search produced 16 relevant and reputable peer reviewed articles related to organic purchases, local purchases, and/or consumer behaviors and motivations related to purchasing. These articles attempt to improve understanding of consumer demand and purchasing behaviors, specifically related to organic and/or local food purchases. Appendix A summarizes the topics and key points of the articles reviewed.

Findings

Although organic sales are increasing, the overall share of the market remains low, comprising only 5.3% of total food purchases in the U.S. (OTC, 2017; Van Doorn & Verhoef, 2011). Consumer demand has driven the increased sales, but the larger portion of the market represents those consumers who do not purchase organic. Studies have shown that consumers often report positive attitudes toward organic foods, but those attitudes are not reflected in intentions nor purchasing behaviors (Shepherd, Magnusson, & Sjöden, 2005; Straughan & Roberts, 1999). A common interpretation concludes consumers are not willing to pay the premium for organic foods if they do not perceive the organic foods as superior to nonorganic foods (Shepherd, Magnusson, & Sjöden, 2005; Van Doorn & Verhoef, 2011).

Attempting to understand the divergence of behavior from attitude, research has attempted to identify organic consumers, their preferences, purchasing habits, and barriers to purchase. Much of the research has focused on willingness to pay (WTP) for the premiums organic foods often carry, and health and environmental concerns as motivation for purchasing organic foods (Arvola et al., 2007; Dean, Raats, & Shepherd, 2008; Fraj & Martinez, 2006; Loureiro & Hine, 2002; Michaelidou & Hassan, 2008; Paul & Rana, 2012; Shepherd, Magnusson, & Sjöden, 2005; Van Doorn & Verhoef, 2011; Zepeda & Li, 2007).

Willingness to pay (WTP). A study conducted in Sweden, published by Shepherd, Magnusson, and Sjöden (2005) found that organic foods are perceived as healthier, but more expensive. Nearly half of the respondents reported choosing nonorganic foods more often due to the premiums of organic foods (Shepherd, Magnusson, & Sjöden, 2005). Research conducted in Iran by Miličić, Thorarinsdottir, Dos Santos, and Hančič (2016) found price may not be the most important factor, but when organic foods were twice as expensive as nonorganic foods, 57% chose the inorganic option.

In a comparison of preference for claims in the Iranian study, 54% reported WTP a premium for organic, 41% reported WTP a premium for local, and 17% reported WTP a premium for aquaponics (Miličić, Thorarinsdottir, Dos Santos, and Hančič, 2016).

When asked how much they were willing to pay for these claims, respondents reported 39.8% more for organic, 39.5% more for local, and 37.6% more for aquaponics (Miličić, Thorarinsdottir, Dos Santos, and Hančič, 2016). Gracia, Barreiro-Hurlé, and López-Galán (2014) conducted an experiment in Spain using eggs to determine if local and organic

claims were complements. Their results suggest consumers are willing to pay premiums for organic and local claims, but the degree varies among segments with different preferences (Gracia, Barreiro-Hurlé, & López-Galán, 2014).

While some consumers express WTP for organic and local foods, the high premiums present a barrier to many consumers (Paul & Rana, 2012; Shepherd, Magnusson, & Sjöden, 2005; Van Doorn and Verhoef, 2011). Existing research has identified demographics, attitudes, and values associated with WTP for organic and local foods. This paper will discuss those variables in the following sections.

Factors that impact WTP and purchasing behavior: Organic. Many studies have focused on demographics characteristics to predict consumers' purchasing behavior (Dettmann & Dimitri, 2009; Loureiro & Hine, 2002; Paul & Rana, 2012; Racine, Mumford, Laditka, & Lowe, 2013; Van Doorn & Verhoef, 2011; Zepeda & Li, 2007) while some researchers suggest psychographic metrics are better predictors of purchasing behavior (Straughan & Roberts, 1999).

Demographics. Education. Certain demographics appear to have stronger associations with WTP and purchasing behavior than others. Several studies have found higher levels of education to be positively associated with organic purchases. Gracia, Barreiro-Hurlé, and López-Galán (2014) identified in Spain, a segment consisting of 76% of respondents, associated with having higher levels of education and general knowledge of organic foods. This segment valued local claims above all, but also prioritized organic claims. Two nation-wide studies in the United States, one in Colorado, and one in India, have also found higher levels of education to be positively

associated with purchasing organic food (Dettmann & Dimitri, 2009; Paul & Rana, 2012; Loureiro & Hine, 2002; Zepeda & Li, 2007).

Income. Zepeda and Li (2007) found income had no significant impact on probability of purchase, while Loureiro & Hine (2002) found consumers with greater incomes expressed a higher WTP for claims of organic and GMO-free, but not for local claims. The first resulting from a nationwide household survey (N = 680), the latter resulting from a survey conducted in Colorado (N = 437). In an analysis of Nielsen Homescan data (N = 41,000), Dettmann and Dimitri (2009) found consumers with higher incomes were more likely to try organic, but spend less overall.

Age. Van Doorn and Verhoef (2011) found older people were less likely to associate organic foods as having higher quality, while Loureiro and Hine (2002) found an increase in age is associated with a decreased WTP for organic potatoes, and Zepeda and Li (2007) found an increase in age indicated consumers were less likely to purchase organic.

Presence of children. Households with children were found less likely to purchase organic foods by Zepeda and Li (2007) and Loureiro and Hine (2002) found families with children reported decreased WTP for organic foods.

Race. Zepeda and Li (2007) found no significant relationship between race and organic purchasing behavior. However, Dettmann and Dimitri (2009) found African American/Black households are less likely to purchase organic vegetables than Caucasian/White families, but concluded that those African American/Black households that do purchase organic vegetables spend more. Their analysis also found Asian

households had no significant correlation to purchasing organic vegetables, but spent more proportionately, on organic bagged salads (Dettmann & Dimitri, 2009).

Other demographic findings. Zepeda and Li (2007) found no significant relationship between gender and organic purchasing behavior. However, van Doorn and Verhoef (2011) reported women are more likely to associate organic foods as having higher quality. Zepeda and Li (2007) found nonreligious consumers were more likely to purchase organic.

Demographic summary. The demographic literature examined suggests education plays a significant role in organic purchasing (Dettmann & Dimitri, 2009; Gracia, Barreiro-Hurlé, & López-Galán, 2014; Loureiro & Hine, 2002; Paul & Rana, 2012; Zepeda & Li, 2007), while income (Dettmann and Dimitri, 2004; Loureiro & Hine, 2000; Zepeda and Li, 2007), gender (van Doorn & Verhoef, 2011; Zepeda & Li, 2007), and race (Dettmann & Dimitri, 2009; Zepeda & Li, 2007) are less dependable predictors. Households with children may be less likely to purchase organic (Loureiro & Hine, 2002; Zepeda & Li, 2007), as are older individuals (Loureiro & Hine, 2000; van Doorn & Verhoef, 2011; Zepeda & Li, 2007). Finally, nonreligious consumers may have a stronger likelihood to purchase organic foods, but this was the only report of this finding within this literature review (Zepeda & Li, 2007).

Health concern. Loureiro and Hine (2002) found Colorado consumers who valued nutrition expressed a higher WTP for organic potatoes, and though locally grown potatoes obtained a higher premium than organic potatoes, nutritional concern is the most important motivation for purchase. Shepherd, Magnusson, and Sjöden (2005)

found Swedish respondents frequently perceived organic foods as healthier, that healthiness was an important attribute for purchase, and concluded that health had an important influence on purchasing behavior, however their research identified taste as the most influential basis for purchase and the organic claim as the least important attribute measured. Paul and Rana (2012) found 42.1% of Northern Indian respondents reported health as the most important motivation to purchase organic foods and 96% of respondents agreed health impacts purchasing decisions. Their research concludes health is the most important attribute affecting purchase, followed by quality (Paul & Rana, 2012).

In contrast, Zepeda and Li (2007) in a nationwide survey, found the attributes of nutrition and health carried no significance in purchasing behavior, but probability to purchase was increased for those consumers who perceived organic foods as offering improved nutrition. A 2008 survey on an island of Scotland found the perceived health benefits of organic foods to be insignificant as motivation to purchase, however, the researchers warn their findings should not be extrapolated to greater geographic regions (Michaelidou & Hassan, 2008). Finally, Van Doorn and Verhoef (2011) found no relationship between health concern and WTP for organic foods.

In summary, health concerns appear to play a role in purchasing organic foods for some segments (Loureiro & Hine, 2002; Paul and Rana, 2012; Shepherd, Magnusson, & Sjöden, 2005) and not others (Michaelidou & Hassan, 2008; Van Doorn and Verhoef, 2011). These findings echo the ongoing debate concerning the healthfulness and nutritive benefits of organic foods.

Environmental concern. Shepherd, Magnusson, and Sjöden (2005) concluded that health concerns seemed to be a stronger indicator of organic purchasing behavior than environmental concern, but found environmentally friendly behavior (EFB) may be a stronger indicator of frequency of purchase of organic foods. Arvola et al. (2007) found moral consideration, including impacts on the environment and animal welfare, may play an important role in the decision to purchase organic foods. Hartmann and Wright (1999) and McEachern and McClean (2002) identified motives such as environmental concern, animal welfare, safety, and use of GMOs as ethical motives for purchasing organic foods (as cited in Michaelidou & Hassan, 2008). In Scotland, Michaelidou and Hassan found that ethical self-identity is associated with positive attitude and intention in favor of organic produce, and found ethical self-identity as a more important predictor of purchase than health concern. It is important to note again that the researchers warn against extrapolating their findings to other geographic areas. In the Netherlands, Van Doorn and Verhoef (2011) found consumers with higher levels of environmental concerns perceived organic foods as having higher quality and were willing to pay a premium of 13%. In India, Paul and Rana (2012) found environmentally friendly attributes added value to organic products and that although consumers viewed organic foods as more expensive, an increased WTP was expressed for products that are healthy and environmentally friendly.

Dean, Raats, and Shepherd (2008) found positive moral norms to be an important predictor of organic purchases. Consumers are more influenced by positive moral norms in purchasing organic foods than negative moral norms, thus affective

attitude can be an important predictor of purchasing behavior of organic foods (Dean, Raats, & Shepherd, 2008). Research outside the realm of organic purchasing also attempts to address the gap between consumer attitude and behavior. Fraj and Martinez (2006) show that ecological behavior is impacted by environmental affect. However, consumers may express strong environmental concerns, those concerns are not always reflected in their purchasing behavior. Straughan and Roberts (1999) investigated psychographic criteria (e.g., altruism, perceived consumer effectiveness [PCE], and environmental concern) and found PCE offers the best potential explanation to ecologically conscious consumer behavior (ECCB) and the gap between attitude and behavior.

Quality. Several of the studies investigated in this review address quality as a factor impacting purchasing organic foods (Loureiro & Hine, 2002; Shepherd, Magnusson, & Sjöden, 2005; Van Doorn & Verhoef, 2011; Zepeda & Li, 2007). Zepeda and Li (2007) found recognition of the USDA organic label increased likelihood of organic food purchases. This relationship likely suggests that consumers perceive the label as an enhancement of quality. Loureiro and Hine (2002) reported consumers who valued freshness and nutrition expressed a higher WTP for organic potatoes. Van Doorn and Verhoef (2011) examined the differences in WTP for organic virtue and vice foods and found consumers were more willing to pay premiums for organic virtue foods, more so than for organic vice foods. Their findings also suggest that quality is positively associated with WTP and this effect was stronger for organic virtue foods than for organic vice foods. Finally, Shepherd, Magnusson, and Sjöden (2005) found taste, shelf

life, and healthiness to be the most valued attributes leading to organic purchases, production method being the least important predictor of purchase.

Other related findings. Zepeda and Li (2007) reported additional findings worth mentioning. Their research asserts shopping venue as the most important influence on purchasing organic foods and also found that those consumers who enjoy cooking are more likely to purchase organic foods. Finally, the second largest effect in their study found consumers who value convenience most in purchasing food, are less likely to purchase organic foods.

Factors that impact WTP and purchasing behavior: Local. It is now appropriate to include a section on local claims. Gracia, Barreiro-Hurlé, and López-Galán (2014) found two contrasting segments in their study examining product claims for eggs in Spain. The first segment, of which includes 76% of participants, is associated with having higher levels of education and general knowledge of organic foods. Above all, those consumers valued local claims, but also prioritized organic claims, thus the authors conclude these attributes are considered complements for this segment. The second segment, having a perceived lower level of education and general knowledge of organic foods valued the method of production over origin. For this segment, free-range and local/regional claims were found to be substitutes.

Miličić, Thorarinsdottir, Dos Santos, and Hančič (2016) found about half of consumers actively sought to purchase local foods and about half of consumers reported a preference for organic foods. In a comparison of preference for claims, 54% reported WTP a premium for organic, 41% reported WTP a premium for local, and 17%

reported WTP a premium for aquaponics. When asked how much they were willing to pay for these claims, respondents reported 39.8% for organic, 39.5% more for local, and 37.6% more for aquaponics (Miličić, Thorarinsdottir, Dos Santos, and Hančič, 2016). Loureiro and Hine (2002) report in a comparison between local, organic, and GMO-free attributes, locally grown and labeled potatoes carried the highest premium.

Adams and Salois (2010) claim to identify a turn in consumer preferences and WTP from organic to local after the adoption of The Organic Food Production Act of 1990, which regulated the organic claim. Their review suggests that after federal regulation, organic agriculture became industrialized and lost its appeal to consumers as an alternative movement. The authors claim that local has surpassed organic in growth and has the potential to improve communities, health, and environmental issues.

Local sales are difficult to quantify given the nature of local food sales, but the Agriculture and Resource Management Survey reported an estimate of 2012 local food sales at \$6.1 billion (Low et al., 2015). Racine, Mumford, Laditka, and Lowe (2013) conducted a large survey in North Carolina to determine characteristics of families that purchase local produce. Their study found: nearly half of participants reported purchasing local foods at least once a month; families who offer their children the recommended five servings of fruits and vegetables per day are more likely to purchase local produce frequently; families participating in Medicaid and SNAP are less likely to report purchasing local produce, but overall, lower income families purchased local produce more frequently than those with higher incomes; African American/Black families are less likely to report purchasing local produce than Caucasian/White families

and Hispanic/Latino families; rural consumers are more positively associated with purchasing local; and enjoyment of and confidence in cooking is associated with purchasing local. Their study found conflicting information regarding income and local produce purchasing.

Survey Analysis

Methodology

Customer intercept surveys were conducted in spring and summer of 2017 at farmers' markets (Boggy Creek Farm and Barton Creek Farmers' Market), conventional grocers (HEB and Fiesta), and specialty grocers (Sprouts and Wheatsville Co-op), all in the Greater Austin area. Participants were approached by Texas State University students in produce sections and asked if they would like to participate in the survey. In total, 200 face-to-face questionnaires were completed, 42% from specialty grocers, 30% from conventional grocers, and 28% from farmers' markets. The survey was intended to identify demographic characteristics, consumer preferences, and purchasing habits of premium leafy greens and fish within the Greater Austin markets.

Data analysis included summarizing participant characteristics and responses, Pearson's r correlation tests, and hierarchical regression. Descriptive characteristics in association with participant responses to organic, local, and farm fresh (Appendix B) purchase frequencies were summarized. Descriptive characteristics in association with the importance of attributes (freshness, location of store, price, organic, availability, customer service, and local) when purchasing leafy greens were also summarized (See Appendices C - I). In addition, percent response to importance of food issues are

totalled and can be found in Appendix J. Hierarchical regression was used to examine the predictive value of education level, gross household income, and race/ethnicity for organic purchase frequency. These explanatory variables were entered sequentially to determine the effect of education while controlling for the influence of income and race/ethnicity. Three equations were estimated using the hierarchical regression: organic purchase frequency, local purchase frequency, and environmental concern, as dependent variables.

Sample

Table 1 presents a summary of the sample's demographic characteristics. Of the 200 respondents, 112 (56%) were Caucasian/White, while Hispanic/Latino, Asian, and African American/Black respondents comprised 15%, 11%, and 10%, respectively. According to the City of Austin in 2013, the ethnic makeup of the metropolitan area was approximately 54% Caucasian/White, 32% Hispanic/Latino, 7% African American/Black, and 5% Asian (2014). Ages ranging from 25-65 comprised 73% of the responses; participants less than 25 years old and participants over 65 years old were represented as 12% and 15%, respectively. In 2003, 72% of the population of Greater Austin was between the ages of 15 and 65 (City of Austin, 2014). The share of participants who had at least some college and beyond constitute 88% of the sample, 32% of which reported a bachelor's degree, and 25% reported having a master's degree. The City of Austin reported approximately 69% of the population had at least some college, 27% had a bachelor's degree, and 14.3% had a graduate or professional degree (2014). The size of the sample group having a master's degree, PhD, or professional degree was about

Table 1

Descriptive Characteristics of Survey Participants

	Total Respondents	Percent of Sample
Number of Respondents (N)	200	100
Ethnicity		
Caucasian/White	112	56
Hispanic	30	15
African American/Black	20	10
American Indian	5	3
Asian	22	11
Other	5	3
No response	6	3
Age		
<25	24	12
25-40	56	28
40-55	50	25
55-65	39	20
>65	29	15
No response	2	1
Education		
Less than High School	2	1
Some High School	4	2
High School Diploma	17	9
Some College/AD	54	27
4-year Bachelor's degree	64	32
MS	50	25
PhD, Other	7	4
No response	2	1
Gross HH Income		
<20,000	11	6
20000-40000	19	10
40000-60000	39	20
60000-80000	28	14
80000-100,000	41	21
>100,000	40	20
No response	17	9

twice that of the Greater Austin population. Gross household income was measured in \$20,000 increments from less than \$20,000 annually to more than \$100,000 annually.

Participants earning \$40,000 or more compose 75% of responses, while incomes less

than \$20,000 and between \$20,000-\$40,000 were reported by 6% and 10%, respectively. City of Austin reported approximately 72% of the population made \$35,000 or more (2014).

Findings

Consumers were asked how often they purchase foods labeled <organic> and <locally grown> (response options included once a week, once a month, or not at all). Descriptive summaries of organic purchase frequency responses and local purchase frequency responses are portrayed in Tables 2 and 3, respectively. In response, 55% participants reported purchasing organic labeled products once a week, 28.5% reported once a month, and 14.5% reported not purchasing organic labeled products at all. In the same manner, 45% of respondents reported purchasing local labeled foods once weekly, followed by 32% of which reported purchasing once monthly, and 14.3% reported purchasing not at all. A correlation test using Pearson's r revealed a positive association between organic purchase frequency and local purchase frequency ($r = .47, p < .01$). As purchase frequency increased for one label, it increased for the other. This suggests foods labeled organic and local could be complements in the Greater Austin market.

Demographic findings: Organic and local purchase frequency. Neither higher education levels ($r = .01, p = .88$) nor age ($r = -.08, p = .28$) revealed a significant association with organic purchase frequency. No significant association was found between age and local purchase frequency either ($r = .07, p = .33$). However, a correlation was detected between education level and local purchase frequency ($r = .16, p = .022$).

Table 2

Demographic Characteristics and Organic Purchase Frequency

	No response		Organic				Total		
			Once Weekly		Once Monthly			Not at all	
	#	%	#	%	#	%		#	%
Ethnicity									
Native American	0	0.00	5	100.00	0	0.00	0	0.00	5
African American	0	0.00	7	35.00	9	45.00	4	20.00	20
Asian	0	0.00	10	45.50	8	36.40	4	18.20	22
White	2	1.80	66	58.90	29	25.90	15	13.40	112
Hispanic	0	0.00	16	53.30	9	30.00	5	16.70	30
Other	0	0.00	4	80.00	1	20.00	0	0.00	5
No response	1	16.70	3	50.00	1	16.70	1	16.70	6
Total	3	1.50	111	55.50	57	28.50	29	14.50	200
Age									
<25	1	4.20	12	50.00	8	33.30	3	12.50	24
25-40	0	0.00	34	60.70	16	28.60	6	10.70	56
40-55	1	2.00	27	54.00	14	28.00	8	16.00	50
55-65	0	0.00	27	69.20	9	23.10	3	7.70	39
>65	0	0.00	11	37.90	10	34.50	8	27.60	29
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	3	1.50	111	55.50	57	28.50	29	14.50	200
Education									
Less than HS	0	0.00	2	100.00	0	0.00	0	0.00	2
Some HS	0	0.00	2	50.00	1	25.00	1	25.00	4
HS Diploma	1	5.90	7	41.20	8	47.10	1	5.90	17
Some College	0	0.00	25	46.30	21	38.90	8	14.80	54
BA/BS.	0	0.00	39	60.90	19	29.70	6	9.40	64
MS	1	2.00	33	66.00	7	14.00	9	18.00	50
PhD, Other	0	0.00	3	42.90	1	14.30	3	42.90	7
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	3	1.50	111	55.50	57	28.50	29	14.50	200
Gross HH Income									
<20,000	1	9.10	7	63.60	2	18.20	1	9.10	11
20000-40000	0	0.00	11	57.90	7	36.80	1	5.30	19
40000-60000	0	0.00	15	38.50	16	41.00	8	20.50	39
60000-80000	0	0.00	18	64.30	8	28.60	2	7.10	28
80000-100,000	0	0.00	21	51.20	11	26.80	9	22.00	41
>100,000	1	2.50	28	70.00	6	15.00	5	12.50	40
No response	1	5.90	8	47.10	6	35.30	2	11.80	17
Total	3	1.50	108	55.40	56	28.70	28	14.40	195

Table 3

Demographic Characteristics and Local Purchase Frequency

	Locally Produced								
	No response		Once Weekly		Once Monthly		Not at all		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
Native American	0	0.00	3	60.00	1	20.00	1	20.00	5
African American	0	0.00	8	40.00	7	35.00	5	25.00	20
Asian	0	0.00	9	40.90	7	31.80	6	27.30	22
White	1	0.90	56	50.00	39	34.80	16	14.30	112
Hispanic	0	0.00	8	26.70	8	26.70	14	46.70	30
Other	0	0.00	3	60.00	2	40.00	0	0.00	5
No response	1	16.70	3	50.00	0	0.00	2	33.30	6
Total	2	1.00	90	45.00	64	32.00	44	22.00	200
Age									
<25	0	0.00	6	25.00	10	41.70	8	33.30	24
25-40	0	0.00	30	53.60	13	23.20	13	23.20	56
40-55	1	2.00	19	38.00	22	44.00	8	16.00	50
55-65	0	0.00	24	61.50	8	20.50	7	17.90	39
>65	0	0.00	11	37.90	11	37.90	7	24.10	29
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	2	1.00	90	45.00	64	32.00	44	22.00	200
Education									
Less than HS	0	0.00	0	0.00	0	0.00	2	100.0	2
Some HS	0	0.00	2	50.00	0	0.00	2	50.00	4
HS Diploma	0	0.00	7	41.20	4	23.50	6	35.30	17
Some College	0	0.00	23	42.60	22	40.70	9	16.70	54
BA/BS	0	0.00	26	40.60	23	35.90	15	23.40	64
MS	1	2.00	28	56.00	13	26.00	8	16.00	50
PhD, Other	0	0.00	4	57.10	2	28.60	1	14.30	7
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	2	1.00	90	45.00	64	32.00	44	22.00	200
Gross HH Income									
<20,000	0	0.00	2	18.20	7	63.60	2	18.20	11
20000-40000	0	0.00	12	63.20	2	10.50	5	26.30	19
40000-60000	0	0.00	14	35.90	14	35.90	11	28.20	39
60000-80000	0	0.00	19	67.90	7	25.00	2	7.10	28
80000-100,000	0	0.00	17	41.50	17	41.50	7	17.10	41
>100,000	1	2.50	20	50.00	8	20.00	11	27.50	40
No response	1	5.90	4	23.50	7	41.20	5	29.40	17
Total	2	1.00	88	45.10	62	31.80	43	22.10	195

Hierarchical regression was used to examine the predictive value of education level, gross household income, and race/ethnicity for organic purchase frequency. Although these factors had relatively little explanatory power, the model shows African American/Black participants (vs. non-African American/Black participants) less frequently purchase organic foods once monthly or once weekly ($\beta = -.33, p = .019$). See top portion of Table 4 for all model statistics.

Table 4

Hierarchical Regressions for Organic Purchase Frequency (top), Local Purchase Frequency (middle), and Environmental Concern (bottom)

	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>	
	β	p	β	p	β	p
Education	-.01	.92	-.02	.79	-.02	.78
Income			.05	.55	.05	.56
American Indian					.02	.81
Black					-.33	.02
Asian					-.25	.07
White					-.28	.15
Latino					-.26	.10
ΔR^2	.00	.92	.00	.55	.06	.07
Education	.18	.02	.18	.02	.12	.14
Income			-.02	.85	-.00	.97
American Indian					-.05	.61
Black					-.23	.09
Asian					-.22	.10
White					-.19	.32
Latino					-.37	.02
ΔR^2	.03	.02	.00	.85	.07	.03
Education	.19	.01	.19	.02	.16	.06
Income			-.01	.89	-.00	.97
American Indian					-.06	.52
Black					-.23	.09
Asian					-.18	.19
White					-.20	.30
Latino					-.25	.12
ΔR^2	.03	.01	.00	.88	.03	.45

Note: Due to missing data, degrees of freedom ranged from 168 to 176 depending on the model.

Another regression was used to examine the associations between the same factors and local purchase frequency. Education level was shown to influence local purchase frequency ($\beta = .18, p = 0.02$) and remained significant after controlling for income ($p = .02$) however, adding income to the model did not add any explanatory power. When race was added to the analysis, the effect of education level on local purchase frequency fell out of significance ($\beta = .12, p = .14$). Within race, Latino/Hispanic participants were less likely to purchase local foods ($\beta = -.37, p = .02$). See middle portion of Table 4 for all model statistics.

Environmental concern: Organic and local purchase frequency. Participants were also asked how important food issues are. Positive correlations were detected between environmental concern and both organic purchase frequency ($r = .24, p = .001$) and local purchase frequency ($r = .21, p = .003$). Another hierarchical regression was used to examine the relationships between environmental concern and the same factors used in the above regressions. Education was found to be positively associated with environmental concern ($\beta = .19, p = .01$) and remained significant after controlling for income ($\beta = .19, p = .02$) but not after adding race to the analysis ($\beta = .16, p = .06$). Although none of the race factors were significant, they overall made education fall out of significance (see bottom of Table 4).

Shopping venue: Organic and local purchase frequency. Shopping venue was associated to responses of self-reported organic purchase frequency among the survey data. Of shoppers at farmers' markets, 69% reported purchasing organic foods once weekly, 63% of shoppers at specialty grocers reported purchasing organic foods once

weekly, and only 36% of shoppers at conventional grocers reported purchasing organic once weekly (See Figure 1). Further, 24% of shoppers at traditional grocers reported not purchasing organic at all.

Similarly, of shoppers surveyed at farmers’ markets and specialty grocers, 60% and 52% respectively reported purchasing local once weekly, while only 22% of shoppers at traditional grocers reported purchasing local food once weekly (See Figure 1 and 2). Around 20% of shoppers at farmers’ markets and specialty stores reported not purchasing local foods at all (vs. 30% at traditional grocers).

Attribute importance: Leafy greens. Participants were asked to rate the importance of attributes when buying leafy greens as very important, somewhat important, or not important (see Table 5). The top five attributes reported by percent response as very important are *freshness* (87%), *location of store* (64%), *price* (58%) *organic* (50%), *availability* (50%), and *customer service* (49%). See Appendices C–I for the complete list of demographic characteristics and attribute importance ratings.

Table 5
Attribute Importance in Leafy Green Vegetables

Attribute	Percent response: Very Important
Freshness	87
Location of store	64
Price	58
Organic	50
Availability	50
Customer Service	49
Local	38
Natural	34
Size	25
Hydroponics/Aquaponics	8

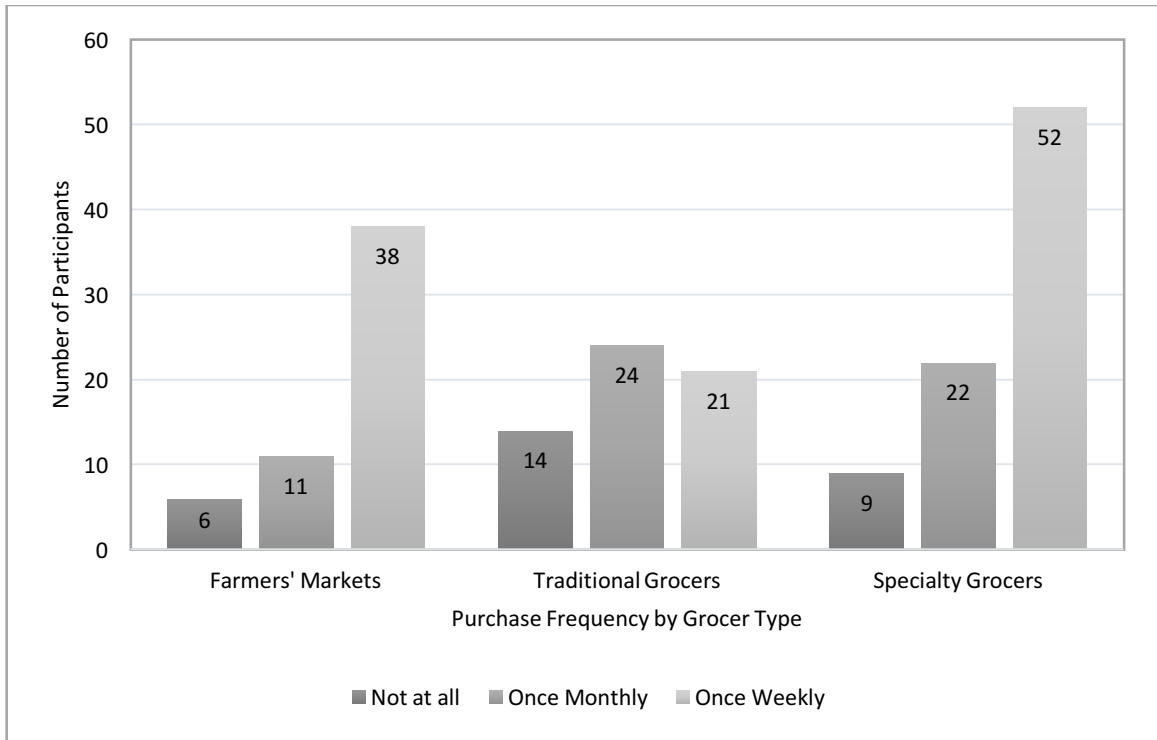


Figure 1. Organic Purchase Frequency by Sample Location



Figure 2. Local Purchase Frequency by Sample Location

Discussion

Demographic Findings: Organic and Local Purchasing Frequency

The literature reviewed suggests education level (Dettmann & Dimitri, 2009; Gracia, Barreiro-Hurlé, & López-Galán, 2014; Loureiro & Hine, 2002; Paul & Rana, 2012; Zepeda & Li, 2007) may provide insight into organic purchasing behavior. Analysis of survey data does not support education level as an important predictor of organic purchase frequency. In contrast, education level was found to be positively associated with local purchase frequency.

Several explanations may be useful in understanding this incongruity. First, Gracia, Barreiro-Hurlé, and López-Galán (2014) identified their larger segment (76% of participants) as more educated and favoring origin (local) over production (organic) in eggs, but still found this group to prioritize organic purchasing. Their research concluded that organic and local labeled eggs are complements within that segment. Analysis of survey data collected in Austin reflects the same; education level was revealed to be positively associated with local purchases and not organic purchases, however, the two labels are positively correlated, suggesting they could be complements for one another.

Additional explanations include the potential role of cultural differences, limitations of products studied, and the dynamics of consumer demand. Paul and Rana (2002) found in India that consumers with higher levels of education were more likely to purchase organic, though cultural differences may partially explain why this was not found to be an important factor in the Greater Austin area. Dettmann and Dimitri's national analysis of home-scan data (2009) found education level to be positively

associated with organic purchasing, however their study was limited to prepackaged organic produce. This limitation could have impacted the demographic profile of the consumer, i.e., who purchases prepackaged organic items versus who purchases non-packaged organic items. Finally, Zepeda and Li (2007) found college education to increase the likelihood that a consumer would purchase organic food by 10%, but they also acknowledged the dynamic nature of consumer demand, the limitations of comparing data from different times, regions, and populations, and the importance of including consumer motivations in addition to demographic profiles, which may not be as helpful in predicting purchasing behavior.

The literature reviewed also suggests age of consumers may provide insight into organic purchasing behavior, specifically that age is negatively associated with organic purchases (Loureiro & Hine, 2000; Van Doorn & Verhoef, 2011; Zepeda & Li, 2007). Analysis of survey data collected in Greater Austin failed to detect a significant association between age and neither organic purchase frequency nor local purchase frequency. This divergence could represent the cultural *attitudes* of Greater Austin consumers, which may better reflect their preferences, regardless of age.

The literature reviewed also suggests income (Dettmann & Dimitri, 2009; Loureiro & Hine, 2000; Zepeda & Li, 2007) and ethnicity (Dettmann & Dimitri, 2009; Zepeda & Li, 2007) are less reliable predictors of organic purchasing. Analysis of survey data supports the unreliability of income to predict organic purchasing, but may suggest an association between race/ethnicity and both organic and local purchasing. Although overall race/ethnicity had no significance in any of the hierarchical regressions, African

American/Black participants were found to purchase organic labeled foods less frequently than non-African American/Black participants ($\beta = -.33, p = .019$) and Hispanic/Latino participants were found to purchase local labeled foods less frequently than non-Hispanic/Latino participants ($\beta = -.37, p = .02$). However, when controlling for race/education, the positive association between education level and local purchase frequency fell out of significance. The latter indicates the complicated and intertwined relationship that exists between race/ethnicity and educational opportunities.

Environmental Concern: Organic and Local Purchasing Frequency

As the literature reviewed suggests, environmental concern was found to be positively associated with both organic (Arvola et al., 2007; Michaelidou & Hassan, 2008; Paul & Rana, 2012; Shepherd, Magnusson, & Sjöden, 2005; Van Doorn & Verhoef, 2011) and local purchases. Environmental concern was also found to be positively associated with education level while controlling for income, but not for race/ethnicity. There may be a complex relationship between education level, environmental concern, and organic and local purchase motivations. On the one hand, organic and local are likely to be complements in this market, and both labels are positively associated with environmental concern, while it seems those with higher levels of education may be more motivated to purchase local labeled foods more frequently. This suggests producers may benefit from labeling their products as both organic and local.

Shopping Venue: Organic and Local Purchasing Frequency

Zepeda and Li (2007) reported shopping venue was the most important predictor of organic purchases. Analysis of survey data in the Greater Austin area reveals

consumers shopping at farmers' markets and specialty grocers purchase both organic and local labeled products more frequently, however, it is worth noting that more surveys were collected from specialty grocers ($n = 85$) than farmers' markets ($n = 55$) and conventional grocers ($n = 60$). In the near-term, producers may optimize sales by marketing their products at specialty stores and farmers' markets. However, markets may shift as such purchases become mainstream.

Attribute Importance: Leafy Greens

Finally, freshness, location, and price were reported as the most important attributes in purchasing leafy greens in Greater Austin and these seem to be in general agreement with the literature review. While quality is important in organic and local purchasing (Loureiro & Hine, 2002; Shepherd, Magnusson, & Sjöden, 2005; Van Doorn & Verhoef, 2011; Zepeda & Li, 2007) freshness, taste, and shelf-life were of the most important attributes reported (Loureiro & Hine, 2002; Shepherd, Magnusson, & Sjöden, 2005). Price is important to consumers, but freshness and location may be more important. Consumers may be willing to pay premiums for organic and local leafy greens, but quality of the product should be perceived as higher, or as high as, compared to expensive options.

Conclusion

In the Greater Austin area, 55% of survey participants reported purchasing organic labeled foods once weekly and 45% of participants reported purchasing local labeled food once weekly. A positive correlation exists between the purchase frequency of the two labels, suggesting they could be complements for one another ($p = < .001$). In

addition, environmental concern was found to be positively associated with both organic ($p = .001$) and local purchase frequency ($p = .003$). Purchase frequency of both organic and local may be more prevalent at farmers' markets and specialty grocers compared to conventional grocers.

Education level, income, and age were found to be nonsignificant factors associated with organic purchase frequency. Overall, race/ethnicity was not significantly associated with organic or local purchase frequency, however African American/Black participants purchase organic labeled products less frequently than non-African American/Black participants and Hispanic/Latino participants purchase local labeled products less frequently than non-Hispanic/Latino participants. Education level was found to have a significant positive association with local purchase frequency, but not after controlling for race/ethnicity. Likewise, education level was positively associated with environmental concern, but fell out of significance after controlling for race/ethnicity. Participants reported freshness, location, and price as the top three important attributes when purchasing leafy greens.

These findings suggest producers may obtain higher premiums by marketing their produce as both organic and local. Moreover, marketing leafy greens to farmers' markets, specialty grocers, and to those who are otherwise concerned with environmental issues may optimize net sales. Though education level may be associated with local purchase frequency and environmental concern, demographic factors may not accurately portray the organic or local consumer. Additionally, creative marketing to

minorities may increase the range of consumers who regularly purchase organic and local labeled foods.

Limitations and Future Research

As with any research, this paper has limitations. Selection bias is always present in intercept surveys and can potentially impact the results. The survey did not address issues of gender or health concern as related to organic and local purchasing, though both have been identified as factors related to purchasing behavior. Future research to include those two items may help paint a clearer picture of consumer preferences and purchasing behavior in Greater Austin. Given the significant positive correlation between organic and local purchase frequencies, multivariate ordered response models that account for the joint dependence could be used in future research to identify the factors influencing purchase frequencies not captured in this analysis. Moreover, understanding what motivates some consumers to shop at farmers' markets could help increase attendance, and thereby organic and local sales. Finally, a qualitative study interviewing consumers about what motivates their choices for organic and local purchases could increase current understanding.

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APPENDIX SECTION

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Appendix A. Literature Review: Topics and Highlights

Topic	Year	Study	Method	Sample Size	Findings
Organic	2005	Shepherd, Magnusson, & Sjöden	Mailed questionnaires	1154, 1100	<ul style="list-style-type: none"> •Price is a barrier to purchase •Health is strongest indicator of purchase •Taste, shelf life, and healthiness are most important attributes •Environmentally friendly behavior is a strong indicator of frequency of purchase •Production methods least important attribute
Organic	2007	Arvola et al.	Face-to-face questionnaire and web-questionnaires	202, 270, 200	<ul style="list-style-type: none"> •Moral considerations may play at important role in decision to purchase
Organic	2007	Zepeda & Li	Phone interviews and mail surveys	680	<ul style="list-style-type: none"> •Shopping venue most important influence on purchasing organic •Consumers who value convenience as most important food attribute are less likely to purchase organic •Nutrition, health, and cost as attributes of important value did not impact purchasing behavior •Viewing organic food as more nutritious increased probability of purchase •Recognition of USDA label linked to purchase •Income had not significant impact of purchase behavior •Consumers who enjoy cooking are more likely to purchase organic •Nonreligious consumers more likely to purchase organic •Consumers with college education more likely to purchase organic •Increased age less likely to purchase organic •Households with children less likely to purchase organic •Gender had no significant impact on purchasing •Race had no significant impact on purchasing
Organic	2008	Michaelidou & Hassan	Self-completion questionnaire	222	<ul style="list-style-type: none"> •Health benefits have little impact on purchasing behavior •Ethical self-identity associated with intention to purchase

Topic	Year	Study	Method	Sample Size	Findings
Organic	2009	Dettmann & Dimitri	Heckman Model analysis of Nielsen Homescan data	41,000	<ul style="list-style-type: none"> •Of packaged organic produce, bagged salads and carrots are best-selling •Black households are less likely to purchase organic vegetables than white households, but those who do, spend more •Asian households spend more of bagged salads •Consumers with higher education more likely to purchase organic vegetables and spend more •Consumers with higher income more likely to try organic, but spend less
Organic	2011	Van Doorn & Verhoef	Three studies: #1: self-complete university survey #2: online panel survey; #3 hypothetical WTP with lottery (university students); #4: market analysis from food purchase scans	172, 709, 233, 4412	<ul style="list-style-type: none"> •Consumers are WTP premiums for organic virtue foods (more so than for organic vice foods) •Consumers with environmental concerns perceived organic foods as higher quality •Women perceive organic as higher quality •Younger people perceive organic foods to be of higher quality •Older people less likely to perceive organic as high quality •Perceived quality positively associated with WTP, the effect was strongest with organic virtue foods •Consumers with environmental concerns WTP a premium of 13% •No relationship found between health concern and WTP
Organic	2012	Paul & Rana	Face-to-face questionnaire	301	<ul style="list-style-type: none"> •Higher education positively associated with purchase behavior •Health is most important attribute •Quality, taste, freshness, variety, size, product claim and timeliness are important attributes •Healthy and environmentally friendly result in higher WTP •Non-availability is a barrier to purchase •Price is a barrier to purchase

Topic	Year	Study	Method	Sample Size	Findings
Organic	2008	Dean, Raats, & Shepherd	Face-to-face questionnaire	281	<ul style="list-style-type: none"> •Positive moral norms are important predictors of organic purchases •Consumers are more influenced by positive moral norms than negative moral norms •Affective attitude can be an important predictor of organic purchase behavior
Local	2013	Racine, Mumford, Laditka, & Lowe	Telephone survey	2932	<ul style="list-style-type: none"> •1/2 of participants purchase local foods at least once monthly •Families offering 5+ fruits and vegetables per day to children purchase more often •Low income families purchase more local, but Medicaid and SNAP families do not •Black consumers less likely to purchase local than white consumers •Rural consumers purchase more local foods •Consumers who enjoy cooking purchase more organic
Organic & Local	2002	Loureiro & Hine	Face-to-face questionnaire	437	<ul style="list-style-type: none"> •Increased WTP for organic associated with valuation of freshness and nutrition •Higher education and income expressed WTP premiums for organic •Families with children reported decreased WTP for organics •Increased age has negative effect on WTP for organic <i>Local</i> •Local claim carried highest premiums •Families with children reported decreased WTP for local •Nutrition concerns most important motivation for purchase

Topic	Year	Study	Method	Sample Size	Findings
Organic & Local	2006	Fraj & Martinez	Self-complete questionnaires	573	<ul style="list-style-type: none"> •Ecological behavior is impacted by environmental impact •Environmental concern does not always reflect in purchasing behavior
Organic & Local	2010	Adams & Salois	Literature Review		<ul style="list-style-type: none"> •Demand for local has surpassed demand for organic
Organic & Local	2014	Gracia, Barreiro-Hurlé, & López-Galán	Face-to-face questionnaire	803	<ul style="list-style-type: none"> •Consumers are WTP premiums for both organic and local claims •The majority of consumers, associated with higher education and knowledge of organics, value local claims, but view organic and local as complements •The minority group values method of production (organic) over origin (local) and view the two claims as substitutes
Organic & Local	2016	Miličić, Thorarinsdottir, Dos Santos, & Hančič	Web questionnaire	635	<ul style="list-style-type: none"> •Nearly half of consumers prefer organic, while the other half prefers local •When organic food is twice as expensive as nonorganic, 57% of consumers will purchase nonorganic •55% of consumers are WTP premiums for local food •In a comparison of WTP for 3 claims, 54% were WTP premiums for organic, 41% were WTP premiums for local, and 17% were willing to pay premiums for aquaponics •Consumers reported WTP 39.8% more, 39.5% more, and 37.6% more for organic, local, and aquaponics, respectively
Consumer Behavior	1999	Straughan & Roberts	Self-complete questionnaires (university students)	235	<ul style="list-style-type: none"> •Psychographic measures may offer more insight into ecologically conscious consumer behavior •Perceived consumer effectiveness may be the best explanation of the gap between attitude and behavior

Appendix B

Demographic Characteristics and Farm Fresh Purchase Frequency

	No response		Once Weekly		Once Monthly		Not at all		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
American Indian	0	0.00	2	40.00	1	20.00	2	40.00	5
African American	0	0.00	5	25.00	7	35.00	8	40.00	20
Asian	0	0.00	7	31.80	6	27.30	9	40.90	22
White	3	2.70	34	30.40	31	27.70	44	39.30	112
Hispanic	0	0.00	5	16.70	8	26.70	17	56.70	30
Other	0	0.00	2	40.00	1	20.00	2	40.00	5
No response	1	16.70	1	16.70	1	16.70	3	50.00	6
Total	4	2.00	56	28.00	55	27.50	85	42.50	200
Age									
<25	1	4.20	2	8.30	6	25.00	15	62.50	24
25-40	1	1.80	24	42.90	9	16.10	22	39.30	56
40-55	1	2.00	9	18.00	21	42.00	19	38.00	50
55-65	0	0.00	14	35.90	10	25.60	15	38.50	39
>65	0	0.00	7	24.10	9	31.00	13	44.80	29
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	4	2.00	56	28.00	55	27.50	85	42.50	200
Education									
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	1	25.00	0	0.00	3	75.00	4
HS Diploma	1	5.90	4	23.50	8	47.10	4	23.50	17
Some College/AD	0	0.00	18	33.30	17	31.50	19	35.20	54
BA/BS	0	0.00	14	21.90	21	32.80	29	45.30	64
MS	2	4.00	17	34.00	7	14.00	24	48.00	50
PhD, Other	0	0.00	2	28.60	2	28.60	3	42.90	7
No response	1	50.00	0	0.00	0	0.00	1	50.00	2
Total	4	2.00	56	28.00	55	27.50	85	42.50	200
Gross HH Income									
<20,000	1	9.10	2	18.20	4	36.40	4	36.40	11
20000-40000	0	0.00	5	26.30	5	26.30	9	47.40	19
40000-60000	0	0.00	11	28.20	13	33.30	15	38.50	39
60000-80000	0	0.00	14	50.00	5	17.90	9	32.10	28
80000-100,000	1	2.40	11	26.80	9	22.00	20	48.80	41
>100,000	1	2.50	10	25.00	12	30.00	17	42.50	40
No response	1	5.90	2	11.80	7	41.20	7	41.20	17
Total	4	2.10	55	28.20	55	28.20	81	41.50	195

Appendix C

Demographic Characteristics and Attribute Importance: Freshness

	No Response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	1	16.70	0	0.00	4	66.70	6
American Indian	0	0.00	0	0.00	1	20.00	4	80.00	5
African American	0	0.00	2	10.00	2	10.00	16	80.00	20
Asian	0	0.00	3	13.60	0	0.00	19	86.40	22
White	0	0.00	5	4.50	11	9.80	96	85.70	112
Hispanic	0	0.00	0	0.00	1	3.30	29	96.70	30
Other	0	0.00	0	0.00	0	0.00	5	100.00	5
Total	1	0.50	11	5.50	15	7.50	173	86.50	200
Age									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
< 25	0	0.00	1	4.20	4	16.70	19	79.20	24
25-40	0	0.00	4	7.10	4	7.10	48	85.70	56
40-55	0	0.00	2	4.00	3	6.00	45	90.00	50
55-65	0	0.00	2	5.10	3	7.70	34	87.20	39
> 65	0	0.00	1	3.40	1	3.40	27	93.10	29
Total	1	0.50	11	5.50	15	7.50	173	86.50	200
Education									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	0	0.00	0	0.00	4	100.00	4
HS Diploma	0	0.00	1	5.90	1	5.90	15	88.20	17
Some College	0	0.00	1	1.90	4	7.40	49	90.70	54
BA/BS	0	0.00	4	6.30	7	10.90	53	82.80	64
MS	0	0.00	3	6.00	3	6.00	44	88.00	50
PhD, Other	0	0.00	3	6.00	3	6.00	44	88.00	50
Total	1	0.50	11	5.50	15	7.59	173	86.50	200
Income									
No response	1	4.50	3	13.60	1	4.50	17	77.30	22
<20,000	0	0.00	1	9.10	2	18.20	8	72.70	11
20000-40000	0	0.00	1	5.30	0	0.00	18	94.70	19
40000-60000	0	0.00	1	2.60	4	10.30	34	87.20	39
60000-80000	0	0.00	0	0.00	3	10.70	25	89.30	28
80000-100,000	0	0.00	3	7.30	1	2.40	37	90.20	41
>100,000	0	0.00	2	5.00	4	10.00	34	85.00	40
Total	1	0.50	11	5.60	15	7.70	173	86.20	200

Appendix D

Demographic Characteristics and Attribute Importance: Price

	No Response		Not Important		Somewhat Important		Very Important		Total	
	#	%	#	%	#	%	#	%	#	%
Ethnicity										
No response	1	16.70	0	0.00	1	16.70	4	66.70	6	100.00
American Indian	0	0.00	0	0.00	3	60.00	2	40.00	5	100.00
African American	0	0.00	2	10.00	4	20.00	14	70.00	20	100.00
Asian	0	0.00	2	9.10	10	45.50	10	45.50	22	100.00
White	0	0.00	6	5.40	43	38.40	63	56.30	112	100.00
Hispanic	0	0.00	1	3.30	9	30.00	20	66.70	30	100.00
Other	0	0.00	0	0.00	3	60.00	2	40.00	5	100.00
Total	1	0.50	11	5.50	73	36.50	115	57.50	200	100.00
Age										
No response	1	50.00	0	0.00	0	0.00	1	50.00	2	100.00
< 25	0	0.00	0	0.00	13	54.20	11	45.80	24	100.00
25-40	0	0.00	2	3.60	14	25.00	40	71.40	56	100.00
40-55	0	0.00	5	10.00	17	34.00	28	56.00	50	100.00
55-65	0	0.00	2	5.10	16	41.00	21	53.80	39	100.00
> 65	0	0.00	2	6.90	13	44.80	14	48.30	29	100.00
Total	1	0.50	11	5.50	73	36.50	115	57.50	200	100.00
Education										
No response	1	50.00	0	0.00	0	0.00	1	50.00	2	100.00
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2	100.00
Some HS	0	0.00	0	0.00	1	25.00	3	75.00	4	100.00
HS Diploma	0	0.00	2	11.80	4	23.50	11	64.70	17	100.00
Some College	0	0.00	0	0.00	17	31.50	37	68.50	54	100.00
BA/BS	0	0.00	6	9.40	32	50.00	26	40.60	64	100.00
MS	0	0.00	1	2.00	16	32.00	33	66.00	50	100.00
PhD, Other	0	0.00	2	28.60	3	42.90	2	28.60	7	100.00
Total	1	0.50	11	5.50	73	36.50	115	57.50	200	100.00
Income										
No response	1	4.50	0	0.00	8	36.40	13	59.10	22	100.00
<20,000	0	0.00	0	0.00	4	36.40	7	63.60	11	100.00
20000-40000	0	0.00	0	0.00	9	47.40	10	52.60	19	100.00
40000-60000	0	0.00	1	2.60	14	35.90	24	61.50	39	100.00
60000-80000	0	0.00	2	7.10	14	50.00	12	42.90	28	100.00
80000-100,000	0	0.00	2	4.90	9	22.00	30	73.20	41	100.00
>100,000	0	0.00	6	15.00	15	37.50	19	47.50	40	100.00
Total	1	0.50	11	5.50	73	36.50	115	57.50	200	100.00

Appendix E

Demographic Characteristics and Attribute Importance: Location of Store

	No Response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	1	16.70	1	16.70	3	50.00	6
American Indian	0	0.00	1	20.00	1	20.00	3	60.00	5
African American	0	0.00	4	20.00	5	25.00	11	55.00	20
Asian	0	0.00	2	9.10	4	18.20	16	72.70	22
White	0	0.00	9	8.00	38	33.90	65	58.00	112
Hispanic	0	0.00	0	0.00	4	13.30	26	86.70	30
Other	0	0.00	1	20.00	1	20.00	3	60.00	5
Total	1	0.50	18	9.00	54	27.00	127	63.50	200
Age									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
< 25	0	0.00	2	8.30	9	37.50	13	54.20	24
25-40	0	0.00	5	8.90	8	14.30	43	76.80	56
40-55	0	0.00	5	10.00	15	30.00	30	60.00	50
55-65	0	0.00	4	10.30	10	25.60	25	64.10	39
> 65	0	0.00	1	3.40	12	41.40	16	55.20	29
Total	1	0.50	18	9.00	54	27.0	127	63.50	200
Education									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	0	0.00	0	0.00	4	100.00	4
HS Diploma	0	0.00	1	5.90	2	11.80	14	82.40	17
Some College	0	0.00	2	3.70	17	31.50	35	64.80	54
BA/BS	0	0.00	6	9.40	23	35.90	35	54.70	64
MS	0	0.00	6	12.00	12	24.00	32	64.00	50
PhD, Other	0	0.00	2	28.60	0	0.00	5	71.40	7
Total	1	0.50	18	9.00	54	27.00	127	63.50	200
Income									
No response	1	4.50	3	13.60	7	31.80	11	50.00	22
<20,000	0	0.00	2	18.20	1	9.10	8	72.70	11
20000-40000	0	0.00	0	0.00	2	10.50	17	89.50	19
40000-60000	0	0.00	4	10.30	10	25.60	25	64.10	39
60000-80000	0	0.00	1	3.60	9	32.10	18	64.30	28
80000-100,000	0	0.00	4	9.80	12	29.30	25	61.00	41
>100,000	0	0.00	4	10.00	13	32.50	23	57.50	40
Total	1	0.50	18	9.00	54	27.00	127	63.50	200

Appendix F

Demographic Characteristics and Attribute Importance: Availability

	No Response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	2	33.30	0	0.00	3	50.00	6
American Indian	0	0.00	0	0.00	4	80.00	1	20.00	5
African American	0	0.00	1	5.00	7	35.00	12	60.00	20
Asian	0	0.00	4	18.20	7	31.80	11	50.00	22
White	0	0.00	21	18.80	38	33.90	53	47.30	112
Hispanic	0	0.00	3	10.00	9	30.00	18	60.00	30
Other	0	0.00	1	20.00	2	40.00	2	40.00	5
Total	1	0.50	32	16.00	67	33.50	100	50.00	200
Age									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
< 25	0	0.00	5	20.80	11	45.80	8	33.30	24
25-40	0	0.00	11	19.60	19	33.90	26	46.40	56
40-55	0	0.00	7	14.00	19	38.00	24	48.00	50
55-65	0	0.00	6	15.40	10	25.60	23	59.00	39
> 65	0	0.00	2	6.90	8	27.60	19	65.50	29
Total	1	0.50	32	16.00	67	33.50	100	50.00	200
Education									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
Less than HS	0	0.00	0	0.00	2	100.00	0	0.00	2
Some HS	0	0.00	0	0.00	0	0.00	4	100.00	4
HS Diploma	0	0.00	4	23.50	3	17.60	10	58.80	17
Some College	0	0.00	2	3.70	15	27.80	37	68.50	54
BA/BS	0	0.00	9	14.10	26	40.60	29	45.30	64
MS	0	0.00	14	28.00	20	40.00	16	32.00	50
PhD, Other	0	0.00	2	28.60	1	14.30	4	57.10	7
Total	1	0.50	32	16.00	67	33.50	100	50.00	200
Income									
No response	1	4.50	2	9.10	3	13.60	16	72.70	22
<20,000	0	0.00	4	36.40	5	45.50	2	18.20	11
20000-40000	0	0.00	2	10.50	5	26.30	12	63.20	19
40000-60000	0	0.00	4	10.30	15	38.50	20	51.30	39
60000-80000	0	0.00	3	10.70	11	39.30	14	50.00	28
80000-100,000	0	0.00	7	17.10	15	36.60	19	46.30	41
>100,000	0	0.00	10	25.00	13	32.50	17	42.50	40
Total	1	0.50	32	16.00	67	33.50	100	50.00	200

Appendix G

Demographic Characteristics and Attribute Importance: Organic

	No Response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	1	16.70	0	0.00	4	66.70	6
American Indian	0	0.00	1	20.00	0	0.00	4	80.00	5
African American	0	0.00	4	20.00	6	30.00	10	50.00	20
Asian	0	0.00	8	36.40	7	31.80	7	31.80	22
White	0	0.00	25	22.30	28	25.00	59	52.70	112
Hispanic	0	0.00	9	30.00	9	30.00	12	40.00	30
Other	0	0.00	0	0.00	1	20.00	4	80.00	5
Total	1	0.50	48	24.00	51	25.50	100	50.00	200
Age									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
< 25	0	0.00	7	29.20	7	29.20	10	41.70	24
25-40	0	0.00	11	19.60	15	26.80	30	53.60	56
40-55	0	0.00	13	26.00	13	26.00	24	48.00	50
55-65	0	0.00	4	10.30	10	25.60	25	64.10	39
> 65	0	0.00	12	41.40	6	20.70	11	37.90	29
Total	1	0.50	48	24.00	51	25.50	100	50.00	200
Education									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	1	25.00	1	25.00	2	50.00	4
HS Diploma	0	0.00	6	35.30	4	23.50	7	41.20	17
Some College	0	0.00	16	29.60	12	22.20	26	48.10	54
BA/BS	0	0.00	11	17.20	20	31.30	33	51.60	64
MS	0	0.00	12	24.00	12	24.00	26	52.00	50
PhD, Other	0	0.00	1	14.30	2	28.60	4	57.10	7
Total	1	0.50	48	24.00	51	25.50	100	50.00	200
Income									
No response	1	4.60	8	36.40	4	18.20	9	40.90	22
<20,000	0	0.00	2	18.20	3	27.30	6	54.50	11
20000-40000	0	0.00	4	21.10	5	26.30	10	52.60	19
40000-60000	0	0.00	12	30.80	12	30.80	15	38.50	39
60000-80000	0	0.00	4	14.30	5	17.90	19	67.90	28
80000-100,000	0	0.00	12	29.30	10	24.40	19	46.30	41
>100,000	0	0.00	6	15.00	12	30.00	22	55.00	40
Total	1	50.00	48	24.00	51	25.50	100	50.00	200

Appendix H

Demographic Characteristics and Attribute Importance: Customer Service

	No response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	1	16.70	0	0.00	4	66.70	6
American Indian	0	0.00	1	20.00	0	0.00	4	80.00	5
African American	0	0.00	2	10.00	9	45.00	9	45.00	20
Asian	0	0.00	3	13.60	10	45.50	9	40.90	22
White	0	0.00	15	13.40	47	42.00	50	44.60	112
Hispanic	0	0.00	4	13.30	7	23.30	19	63.30	30
Other	0	0.00	0	0.00	3	60.00	2	40.00	5
Total	1	0.50	26	13.00	76	38.00	97	48.50	200
Age									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
< 25	0	0.00	8	33.30	7	29.20	9	37.50	24
25-40	0	0.00	6	10.70	28	50.00	22	39.30	56
40-55	0	0.00	4	8.00	21	42.00	25	50.00	50
55-65	0	0.00	7	17.90	8	20.50	24	61.50	39
> 65	0	0.00	0	0.00	12	41.40	17	58.60	29
Total	1	0.50	26	13.00	76	38.00	97	48.50	200
Education									
No response	1	50.00	1	50.00	0	0.00	0	0.00	2
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	0	5.90	1	35.30	3	58.80	4
HS Diploma	0	0.00	1	5.90	6	35.30	10	58.80	17
Some College	0	0.00	5	9.30	14	25.90	35	64.80	54
BA/BS	0	0.00	10	15.60	29	45.30	25	39.10	64
MS	0	0.00	8	16.00	23	46.00	19	38.00	50
PhD, Other	0	0.00	1	14.30	3	42.90	3	42.90	7
Total	1	0.50	26	13.00	76	38.00	97	48.50	200
Income									
No response	1	4.50	2	9.10	7	31.80	12	54.60	22
<20,000	0	0.00	4	36.40	5	45.50	2	18.20	11
20000-40000	0	0.00	1	5.30	8	42.10	10	52.60	19
40000-60000	0	0.00	4	10.30	10	25.60	25	64.10	39
60000-80000	0	0.00	3	10.70	12	42.90	13	46.40	28
80000-100,000	0	0.00	4	9.80	19	46.30	18	43.90	41
>100,000	0	0.50	8	13.30	15	38.50	17	47.70	40
Total	1	0.50	26	13.00	76	38.00	97	48.50	200

Appendix I

Demographic Characteristics and Attribute Importance: Local

	No response		Not Important		Somewhat Important		Very Important		Total
	#	%	#	%	#	%	#	%	
Ethnicity									
No response	1	16.70	1	16.70	3	50.00	1	16.70	6
American Indian	0	0.00	0	0.00	1	20.00	4	80.00	5
African American	0	0.00	4	20.00	10	50.00	6	30.00	20
Asian	0	0.00	3	13.60	12	54.50	7	31.80	22
White	0	0.00	20	17.90	45	40.20	47	42.00	112
Hispanic	0	0.00	8	26.70	14	46.70	8	26.70	30
Other	0	0.00	1	20.00	1	20.00	3	60.00	5
Total	1	0.50	37	18.50	86	43.00	76	38.00	200
Age									
No response	1	50.00	0	0.00	1	50.00	0	0.00	2
< 25	0	0.00	7	29.20	12	50.00	5	20.80	24
25-40	0	0.00	10	17.90	26	46.40	20	35.70	56
40-55	0	0.00	8	16.00	20	40.00	22	44.00	50
55-65	0	0.00	5	12.80	13	33.30	21	53.80	39
> 65	0	0.00	7	24.10	14	48.30	8	27.60	29
Total	1	0.50	37	18.50	86	43.00	76	38.00	200
Education									
No response	1	50.00	0	0.00	1	50.00	0	0.00	2
Less than HS	0	0.00	0	0.00	0	0.00	2	100.00	2
Some HS	0	0.00	2	50.00	1	25.00	1	25.00	4
HS Diploma	0	0.00	4	23.50	8	47.10	5	29.40	17
Some College	0	0.00	9	16.70	26	48.10	19	35.20	54
BA/BS	0	0.00	13	20.30	28	43.80	23	35.90	64
MS	0	0.00	9	18.00	19	38.00	22	44.00	50
PhD, Other	0	0.00	0	0.00	3	42.90	4	57.10	7
Total Responses	1	0.50	37	18.50	86	43.00	76	38.00	200
Income									
No response	1	4.60	8	36.40	7	31.80	6	27.30	22
<20,000	0	0.00	4	36.40	4	36.40	3	27.30	11
20000-40000	0	0.00	5	26.30	9	47.40	5	26.30	19
40000-60000	0	0.00	5	12.80	21	53.80	13	33.30	39
60000-80000	0	0.00	1	3.60	11	39.30	16	57.10	28
80000-100,000	0	0.00	7	17.10	19	46.30	15	36.60	41
>100,000	0	0.00	7	17.50	15	37.50	18	45.00	40
Total Responses	1	0.50	37	18.50	86	43.00	76	38.00	200

Appendix J

Importance of Food Issues

	Not Important		Somewhat Important		Very Important		Highly Important		Total Responses
	#	%	#	%	#	%	#	%	
Place/Country of origin	71	35.86	65	32.83	41	20.71	21	10.61	198
Food processing techniques	30	15.15	49	24.75	84	42.42	35	17.68	198
Packaging and size	41	20.71	83	41.92	57	28.79	17	8.59	198
Environmentally friendly	25	12.63	48	24.24	77	38.89	48	24.24	198
Pesticide Use	19	9.60	32	16.16	60	30.30	87	43.94	198