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THE PERCEPTIONS OF AND MOTIVATIONS FOR PURCHASE OF ORGANIC AND LOCAL FOODS*

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ABSTRACT

What are the primary factors that attract consumers to buy organic or locally grown foods? In fact, do consumers know the difference between organic food and locally grown food? Organics have been a hot topic in health and food discussions and recently, locally-sourced foods are garnering increasing attention as well. Continuous economic and health developments encourage these trends. While much has been written about consumer perceptions of organic foods, this study considers the interaction between the definitions and perceptions of these two food classifications. Results are survey-based and focus on students at large college in the northeastern United States. This is a useful subject group, in that the group is viewed as emerging grocery consumers; we inquire about their current purchase habits, the perceptions and motivations for them, and changes they expect in their habits after graduation.

Keywords: Organic food; Locally-grown food; Health food; Consumer behavior Survey-based research.

INTRODUCTION

Consumers are increasingly considering factors beyond taste, convenience, and price when purchasing food. In line with overall green trends and focus on personal health, consumers are turning to items classified as organic and local. The terms “organic” and “local” are often misunderstood or confused due in part to the vague definitions of the terms. While there are standards for organic certification, there is still debate within the movement as to which production methods are considered organic, which new ingredients should be accepted to the list of allowable ingredients, and what the focus of organic production is (Johnson, 2011; Strom, 2012). Meanwhile, products often claim local source but no official certification exists at this time. Some state governments are considering legislation to create an official label for local claims, but the proposals are primarily for marketing purposes, rather than for verification of the source that those in the local food movement would desire (Giovannucci et al., 2010).

Public and regulatory attention has recently turned to the organic industry’s claims of benefits. A recent study from Stanford University released in September 2012 concluded that

* The views or opinions expressed in this manuscript are those of the author(s) and do not necessarily reflect the position, views or opinions of the editor(s), the editorial board or the publisher.

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there was no strong evidence to support the claim that organic foods provide fewer health risks or are more nutritious than conventional foods (Brant, 2012). Why then do people purchase organics and now local foods as well? Is perceived health the only benefit or are there other attitudinal factors that come into play?

The commonalities in characteristics and goals of local and organic products can foster direct competition and confusion between the two markets, but the terms do have distinctly different definitions. Greene et al. maintain, "...organic and local labels are not necessarily competitive..." but are instead "...two sides of the same coin" (Greene et al., 2009).

In general, organic food focuses on sustainable, non-synthetic production. Organic products can be transported thousands of miles to reach consumers. In fact, the United States imports and exports numerous organic products. Importing or exporting adds transportation costs to the premium already placed on organic products, while also countering environmental protectionist goals of the organic industry. In 2004, the Economic Research Service found that 24 percent of organic sales were made locally (within an hour's drive of the handler's facility) while 30 percent were made regionally, 39 percent nationally, and 7 percent were exported (Greene et al., 2009). Meanwhile, local foods are defined by where production and distribution occur but have no requirements for production. Locally-sourced foods are often organically produced, even if not labeled as such, because produce is grown in more traditional, simple ways that are de facto organic (Giovannucci et al., 2010). A Thomson Reuters survey found that 36% of responders who preferred organic food claimed "eagerness to support local farms" as their primary motivation (Thomas - Reuters 2011). Such comments indicate how intertwined these two types of food are in consumers' perceptions, although sometimes mistakenly.

Organic certification regulates the method of production. The Organic Foods Production Act of the 1990 Farm Bill authorized the creation of national standards for production and handling of organic foods. The United States Department of Agriculture (USDA) administers the Act (National Organic Program 2012). Complete implementation of these standards occurred in 2002. The National Organic Program (NOP), a regulatory department within the USDA Agricultural Marketing Service, defines and regulates the labeling and certification of the term "organic." Organic is defined in this act as "a production system that is managed in accordance with the [Organic Food Production] Act and regulations...to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity." A product sold, labeled, or represented as "100% Organic" must contain 100 percent organically produced products by weight or fluid volume (excluding water and salt). Products labeled, sold, or represented as "organic" must contain no less than 95 percent organically produced ingredients. Products "made with organic ingredients" must have no less than 70 percent organic ingredients, can list up to three such organic ingredients, and cannot show the USDA organic seal. Finally, products claiming "some organic ingredients" contain less than 70 percent organically produced ingredients, can only use the term organic to in regard to those specific ingredients, and cannot use the USDA organic label (National Organic Program – A 2012).

Determining a widely agreed upon definition of local food has not yet been successful. While the name local implies source of food and distance between farm and consumer, the measure of that distance is disputed (Giovannucci et al., 2010). Some consider food to be "local" only if the purchaser knows the farmer; others consider sales within 100 miles of source; while others define local in terms of state or regional bounds (Greene et al., 2009). In addition to the ambiguity of what the "local" label means, consumers are unclear about where to find local foods. Studies have shown that U.S. consumers are highly

supportive of mandatory state labels designating local origin, but other studies question the effectiveness of such labels, with one finding that consumers define local by relative driving time rather than by state or county lines (Zepeda and Li, 2006). Zepeda and Li struggled with this definition in their study, settling on a very narrow definition of local: “buying directly from farmers in one’s county or neighboring counties; direct buying may include farmers’ markets, Community Supported Agriculture (CSA), and farm stands.” These outlets are unambiguously considered “local,” guaranteeing responders will begin with consistent associations. Despite the lack of universal definition for local, the term “locavore” is becoming increasingly popular as a name for one who eats food grown locally whenever possible (Merriam-Webster, 2012).

This paper discusses consumer perceptions and the purchase habits of such products. It seeks to understand where these two trends emerge and overlap both in fact and perception.

LITERATURE REVIEW

Trends in Organic Foods

Organic sales have increased from \$3.6 billion in 1997 to \$21.1 billion in 2008 (Greene et al. 2009). A more recent measurement of the market from the Organic Trade Association estimates the organic industry in 2010 at \$28.6 billion (Organic Trade Program 2011). Twenty-eight percent of U.S. consumers buy organic products weekly, and more than two-thirds buy organic products at least occasionally (Food Marketing Institute, 2008). As of 2008, competition from “locally grown” products has not negatively affected organic demand at a significant level but could pose a growing threat in the future. While organic products are generally more expensive, with price acting as a barrier to full adoption, organic purchasers tend to be less sensitive to price increases (Greene et al. 2009). Economic slowdowns, such as the recession beginning in 2008, has not deterred organic purchasers, but might decrease the purchase frequency of occasional buyers and deter new adopters.

An increasing number of conventional retail outlets carry organic and local foods. By 2006, conventional outlets sold an equal amount of organic products as natural channels (Dimitri and Oberholtzer, 2009). In 2007, 82 percent of retail food stores carried some organic products (Food Marketing Institute 2008). As organic purchase has become more main stream, organic marketing has changed as well. Established brands are introducing organic versions of known products, while retailers are creating their own private-brand organic products to compete with branded products. Almost 60 percent of retailers in 2008 offered a selection of their own branded organics (Food Marketing Institute 2008). Retailers offering organics range from small mom-and-pop markets to large-scale niche retailer such as Whole Foods, to even traditionally large big-box stores such as Walmart.

While contributing to more widespread awareness and accessibility, the trend to buy and market organic food in mainstream outlets draws criticism from some leaders of the organic movement. Recently, Eden Foods owner Michael Potter spoke out against the National Organic Standards Board, a body created to advise the NOP on which substances should be included or prohibited in organics, because it is run primarily by big businesses that have single organic product lines. Cliff Bar and Company, Amy’s Kitchen, Lundberg Family Farms, and Eden Foods are among the few major organic brands that still remain independent today. Meanwhile, large companies, such as General Mills, Kellogg’s, and Pepsi, own most well-known organic brands such as Bear Naked, Kashi, and Health Valley (Strom, 2012). These companies are contributing to organic standard creations while also selling a majority of products that benefit from genetically modified ingredients and environmentally detrimental production processes (Zepeda and Deal, 2009).

While organic demand has been increasing steadily, production has been unable to keep pace. The strict guidelines for farmland that organic production requires, as well as hesitation by producers to change farming techniques, have resulted in shortages of organic foods. Consequently, the price of organic food, which was already costly, has further increased (Greene et al., 2009).

Trends in Local Foods

The USDA Economic Research Service estimated local food sales to be \$4.8 billion in the U.S. in 2008, with projected growth to \$7 billion by 2011 (Barham et al., 2012). Farmers' markets are a primary means of access for direct consumer purchases. The number of farmers' markets nearly tripled between 2001 and 2009 (Connor et al., 2010). The USDA Agricultural Marketing Service National Directory of Farmers' Markets measured 7,864 farmers' markets in 2012, a 9.6 percent increase from 2011 alone (USDA-Agricultural Marketing Service 2012). Local foods can be found in more traditional retailers as well. New emergence of CSA programs and regional food hubs are attempts to centralize local produce and increase accessibility to consumers; in reality, the majority of local food purchase happens in the retail and food service sector through restaurants, retail grocery stores, and schools (Barham et al., 2012).

Demographics among Consumers

Because organic and local foods are both emerging and growing industries, it is important for retailers to understand consumer demographics. Studies to identify the average organic consumer have reached inconclusive or contradictory results. One study concluded that Asians and African Americans purchase organics more frequently than Whites and Hispanics (Greene et al., 2009). Another study indicated that Asians and Hispanics are the most likely to have purchased organic recently, while consumers "committed to an organic lifestyle" are most likely to be Hispanic or Black (Dimitri and Venezia, 2007). Previous studies had generally identified organic consumers as "white, affluent, well-educated, and concerned about health and product quality." Studies are also contradictory with regard to the effect of income level, presence of children in the household, and ages of children if present, on organic food purchase frequency (Dimitri and Oberholtzer, 2009).

A study for the USDA in 2009 concluded that education level is the one consistent influencing factor of likelihood of organic purchase. Individuals with higher levels of education are more likely to buy organic products. Nevertheless, Dimitri and Oberholtzer (2009) found that completion of graduate degrees decreases the likelihood of organic purchase. Further, a Thomson Reuters (2011) study found that among those under 35 years of age, 62.8 percent of respondents would prefer to eat organic foods, compared to 30.5 percent that preferred non-organic. Overall 57.6 percent of respondents in the study preferred organic foods, while 31.0 preferred non-organic, and 11.4 percent indicated no preference.

Studies about those who purchase local indicated that farmers' market purchasers tend to be older, female, married, employed, living in urban areas, and with higher education and income (Connor et al., 2010). These demographics were traditionally associated with organic purchasers as well. Studies of both organic and local purchasers show that attitudinal and behavioral characteristics influence likelihood of purchase more than demographic characteristics (Zepeda and Li, 2006).

Motivation for Purchase – Why Buy Organic or Local?

Studies emphasize the difference between organic and local consumers' motivations and those of the average conventional grocery shopper. According to Zepeda and Deal, consumers in these categories are motivated by factors beyond demographics and tend to act

from concerns about personal health, environmental impact, local economies, and increased interest in cooking (Zepeda and Deal, 2009).

Through interviews, researchers at the University of Wisconsin found that frequent organic shoppers are more likely to believe organics are healthier, of higher quality, or better tasting. In the study, almost all shoppers claimed environmental protection and avoidance of pesticides and hormones among reasons to buy organic. Primary reasons respondents in this study cited for not purchasing organic were foremost price, then lack of knowledge of benefits, lack of availability, and lack of trust in the organic label. Because studies have suggested income level does not affect purchase habits, this aversion to price is apparently based on principle rather than financial inadequacy. This same study also emphasized that heavy organic users are more likely to seek information, learning more about the benefits of consuming organic. Heavy organic users are also more likely than conventional food purchasers to shop at a variety of retailers (farmers' markets to supermarkets) and tend to learn to cook at a later age so that the habit of conventional shopping was not as ingrained.

Consumers purchase local food because they aim to support local economies, reduce environmental impact of transportation, and believe that locally sourced products will be fresher and better tasting (Gracia et al., 2012). They also take an almost parental view of local farmers, valuing the personal relationship and better treatment they believe local farmers have towards livestock; those who purchase locally also express a general distrust of corporations. "Social embeddedness," the idea that consumers feel a connection with local farmers, value reciprocity, trust, and shared values, while seeking to engage with the local community that can be found at farmers markets, is a hallmark of support for local consumption (Connor et al., 2010).

Zepeda and Li's (2006) study highlights the distinction between attitudes and actual behavior. Their study found attitudes of concern about nutrition and health, energy conservation, and importance of farmers receiving adequate price were not significant drivers of actual local purchase, but that those who enjoyed cooking were more likely to purchase local and those concerned about the cost of food were less likely to purchase local.

Which Factors Impact a Preference for Organic v. Local

A 2008 study asked U.S. consumers who shopped at "natural food" stores: "If you were purchasing a particular ingredient for a recipe and you had a choice of either a local product or a non-local organic one, which would you choose, assuming equivalent price and quality?" Thirty-five percent chose local, 22 percent chose organic, and 41 percent would choose both equally (Greene et al., 2009). Of organic buyers, a third of those in Zepeda and Deal's (2009) study preferred local to organic. Other studies of different consumer groups have found similar results, suggesting an overall preference for local over organic. The preference for local could be a result of consumer misconception that local source implies organic production or environmentally responsible production. Some locavores are former organic consumers who detect a commercialization of the organic industry. They champion local to support community development and integrity of the values originally driving the movement. The 2011 Consumer Survey Report from the National Grocers Association concluded, "[a] much higher proportion of people eat locally grown foods than organic foods. When they think local, they think fresh and want to support local growers/packers" (Barham et al., 2010).

COLLEGE X (THE POPULATION FOR THIS STUDY)

Organic has never been a major consideration on the College X campus. While individual students have sometimes asked why there are not more options, the general student population shows a lack of interest, especially when faced with the economics of organic

offerings. College X's system allows offerings of whatever students want, as long as they are willing to pay a fair price. According to the Director of Dining Services at College X, organics can cost 10 to 30 to 50% more than the generic option. At one time, College X dining offered to sell organic, fair-trade bananas in the dining halls, but the price would increase from \$.99 (the single fruit blanket-cost) to \$1.20 per banana. While the \$.99 seems a high markup on traditional banana supermarket prices, the incremental cost of organic does align with the increased premium expected on organics. Students were unwilling to accept the extra \$0.21 for organic, fair-trade produce. The Director hypothesized that much of this lack of interest in food sources can be ascribed to "a lack of personal involvement in food" among the average 18-21 year old. Students who purchase all of their meals at dining halls, tend to key in on value and quantity rather than quality of ingredients. Further, there is a "disconnect" between food and students. For example, many students expect melon all winter but also organic, locally-sourced food - indicating that they are not educated to understand the relationship of food, source, and nature.

College X in general has a commitment to local sourcing to "support the community." Local is not defined by a distance, but trying to get the most environmentally friendly produce at a reasonable cost. This notion is easy in the right seasons. Especially during the summer, organic, local produce is available at good prices. In fact, local sourcing often saves costs because of reduced transportation costs, so that the quality is up and price is down. At the same time, being a large dining program, some local sourcing comes with liability concerns that cannot be mitigated. Local purchasing must still be done through reputable mechanisms, ensuring the accountability and reputation of the growers.

Despite students' seeming apathy or indifference, the Director's personal goal is to improve students' diets from behind the scenes by offering healthier choices. That being said, she also faces the realities of limitations of a large-volume dining provider. The volume at which College X dining purchases food poses a major limitation on its ability to purchase organic and local in all categories. The largest food group is single animal proteins. The Northeast has abundant produce offerings but large animal agriculture is more limited.

Other dining programs that charge a flat meal rate must create meal packages that average to a uniform cost. College X, on the other hand, employs an a la carte system, which enables it to charge prices that correspond with each individual unit, rather than a varied plate. In this system, College X can pass on the organic premium if demand warrants it. Overall though, student demand has not been widespread enough to justify the extra costs and vendor relations. Still, there is institutional support for more of these offerings as soon as consumer demand is sufficient.

METHODOLOGY

Research Questions and Hypotheses

What do students perceive as the benefits of local and organic foods?

We postulate that, for both food types, healthiness, lack of pesticides, sustainability, and support for local farmers will dominate.

Why do students choose to purchase organics?

We postulate that health will dominate the benefits, while price and lack of access will dominate hindrances.

Why do students choose to purchase local?

We postulate that freshness and supporting local farmers will dominate benefits, while lack of availability and unawareness will dominate hindrances.

What do students perceive as the difference between organic and local?

We postulate that they will be more likely to consider all local food organic, but recognize that organic foods are not all locally produced.

Do students have a preference between the two?

We postulate that students will prefer to purchase organic foods to purchasing local food, due to convenience. It is easier to identify organic products in stores with the USDA labels, while many believe that local foods come only from farmers' markets. If given a choice between an item organically produced or the same item locally sourced with equivalent price and purchase point, we postulate that students will prefer the locally-sourced item.

How will college students' purchasing habits change after graduation?

We postulate that students are, in general, more educated about health and the environment than many of their peers, and thus, will have a higher intention to purchase organics and local foods after they graduate.

Study Design and Procedure

The survey began with questions regarding respondents' background opinions about general environmental concern and beliefs towards organic and locally-produced products. The next series of questions related to respondents' current definition of the term "local" and their attitude towards foods marketed as organic. The survey then asked participants to consider their purchase habits of organic and locally-sourced products as unique segments. Respondents answered how frequently they purchased, factors that motivated purchase, and factors that deterred from purchase. Past studies served as the source for the motivating and deterring factor options chosen to be included in the study. To gain some insight into the interaction between organics and locally-sourced foods, the survey included a series of questions asking respondents to choose between two different products. The final series of organic and locally-sourced specific questions inquired about respondents' projections of their own future purchase habits after graduation. Finally, we collected demographic information to compare gender, age, and school segments. When appropriate, answer choices were given on a five-point Likert scale.

The data came from a sample of College X students who voluntarily took the survey. Distribution was accomplished by sending an online link to three listserves of groups of students. Additionally, a few faculty members distributed the survey in their classes, enabling a more varied sampling of multiple class levels. Of the 206 respondents, 146 fully completed the survey. The gender response rate was fairly equal as 53% of respondents were male and 47% were female. This almost equal distribution is close to that of the entire College X: 53% female, 47% male - but differs somewhat from College X's business school (from which the majority of respondents came), which is 68% male and 32% female. Respondents more frequently came from the freshman class (35%) and senior class (26%), which was a function of the survey distribution methods. Seventy-eight percent of respondents identified themselves as White/Caucasian; College X data reports that 68% of undergraduate students identify themselves as White, while an additional 8.4% identify themselves as two races including White.

DISCUSSION AND ANALYSIS OF RESULTS

Background Opinions

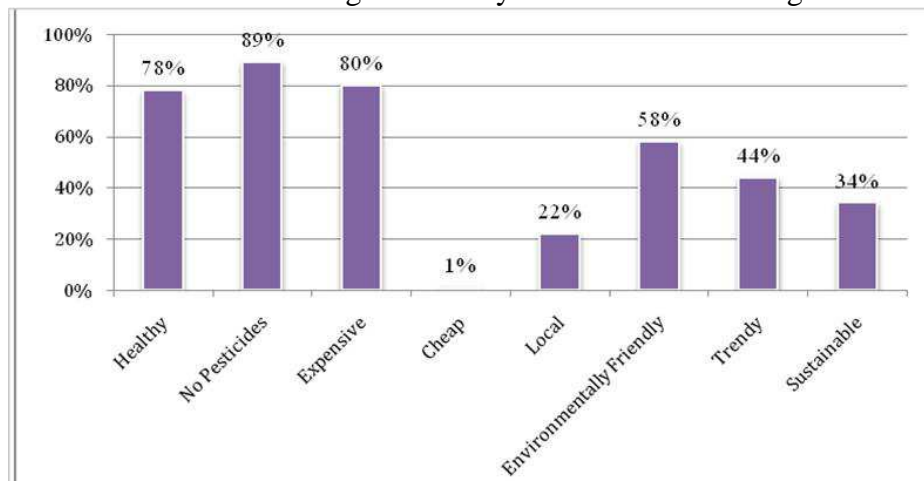
The opening question block of the survey asked respondents to indicate the extent to which they agreed with ten statements relating to overall environmental concern and understanding of differences between organic and locally-sourced foods.

Unsurprisingly, 88% of respondents either agreed or strongly agreed (i.e., either a “4” or “5” on a five-point Likert scale) with the statement, “I care about the environment,” while 83.9% either agreed or strongly agreed with the statement, “I think sustainability is an important cause.” Also, 39.9% agreed or strongly agreed with the statement, “Organic food is important to me” while 32.1% either disagreed or strongly disagreed (i.e., a “1” or “2” on the same scale). Responding to “Locally-sourced food is important to me,” 42.9% agreed or strongly agreed, while 31.0% either disagreed or strongly disagreed.

When asked to select which descriptors they associated with “organic,” respondents answered as shown in the Figure 1. Please note that respondents were allowed to check all factors that applied, allowing for a sum (far) greater than 100%.

FIGURE 1

Which of the following words do you associate with "Organic"?

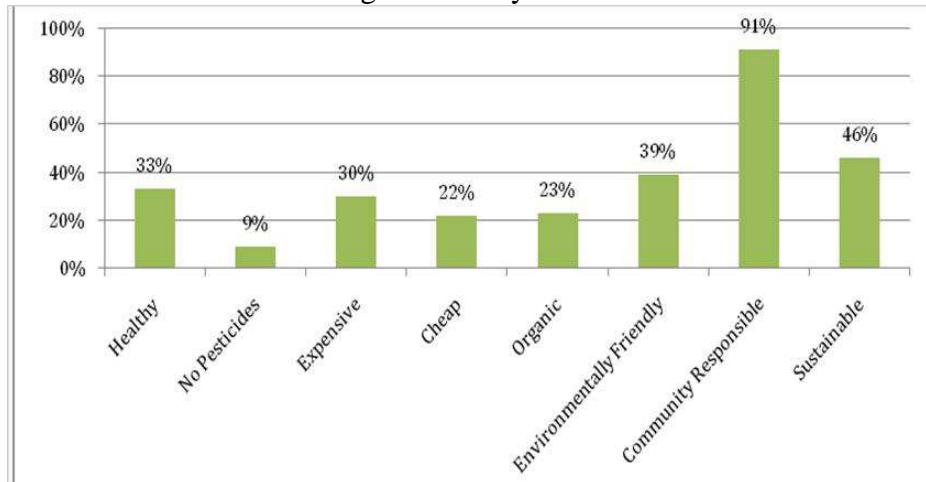


“Healthy”—78%, “no pesticides”—89%, and “expensive”—80% garnered the greatest number of associations but “environmentally friendly” was also selected by the majority of respondents (58%). These factors are common with those identified in previous studies. It is notable that “cheap” received only one response, further supporting the belief that consumers not only think of organic products as expensive, but even more frequently do not think of them as cheap. Finally, only 22% of respondents selected “local” as an association with organic, which suggests a reasonable amount of knowledge of the difference between the two types of food.

When asked the same question about their associations with “local,” respondents answered as in as shown in the Figure 2. Unlike organics, “healthy,” “no pesticides,” and “expensive” did not receive even close to a majority of responses. In fact, the only association that the majority of respondents chose was “community responsible,” which 91% associated with local. “Sustainable” received 46% of respondents’ association, which was greater than the 34% who associated organics with sustainable. While this result may seem surprising at first, as one of the goals of organic supporters is greater sustainability, it is possible that respondents could recognize the greater sustainability of reduced transportation of local products. Respondents may have believed that local production is less likely to

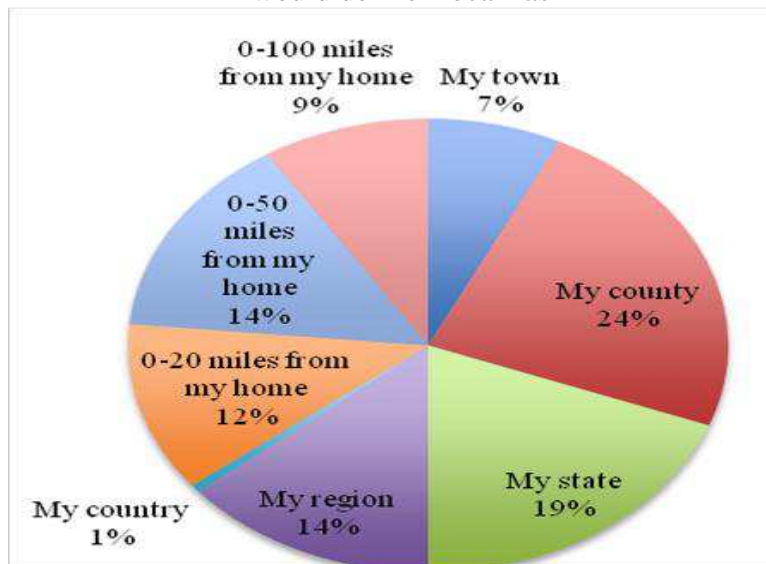
produce waste that is harmful to the environment and also contributes to sustainability of individuals as small-scale farmers. Similar to organics, only 23% of respondents associate “organic” with local.

FIGURE 2
Which of the following words do you associate with "Local"?



In addition to descriptor associations, those surveyed were asked to define “local” among choices that included both political boundary lines and mileage. Responses were fairly evenly distributed as can be seen in the figure below:

FIGURE 3
I would define "local" as



The highest frequencies were for “my county” and “my state.” More respondents defined “local” according to political boundary lines than by mileage from home. This may be because it is easier to identify that a product came from “my county” than to calculate mileage from purchase point. Results indicate that while students generally have a wider definition of “local” than just their immediate town or 20 miles, they also limit local to be less than a national concept or rarely greater than 50 miles from home.

A series of questions regarding beliefs towards the intersection of organics and locally-sourced foods indicated respondents had fairly accurate perceptions. Seventy-two

percent agreed or strongly agreed that “organic food is healthier than non-organic food.” There was a strong connection between organic foods and farmers’ markets, as 56.3% agreed or strongly agreed that “most food at farmers’ markets is organic,” although accurately, 57.1% recognized that not “all food at farmers’ markets is organic.” Further, responses supported the existence of awareness among respondents, as only 16.1% believed “that organic produce is grown locally” and only 6% agreed that they believed “farmers’ markets are the only places I can purchase locally grown food.” These responses further indicate a high level of awareness among respondents of the distinctions between organic and locally-sourced that the general public still often confuses.

Organic Purchase Habits

In addition to measuring frequencies of purchase habits, we ran a series of t-tests to test for significant relationships between each motivating and deterring factor for purchase of organics and (dependent variable) frequency of purchase. Using a significance level of .05, “lack of pesticides,” “quality,” “taste,” “freshness,” “sustainability” and “I do not purchase organics” were all statistically significant. The null hypothesis in each case was that is no difference in the frequency of purchase of organics between those who checked the factor as a motivating or deterring factor and those who did not check that factor as a motivating or deterring factor. For the first five factors, we can reject the null hypothesis and *conclude that those who consider lack of pesticides, quality, taste, freshness, and sustainability as motivating factors [on average] purchase organics more frequently than those who did not select these as motivating factors.* Meanwhile, “I do not purchase organics” was also significant, allowing us to reject the null hypothesis, in favor of those who selected this factor purchasing organics less frequently than those who did not select this factor; of course, this was an obvious result.

In terms of factors that deter purchase, “Organic is not important to me” and “I do not know how to identify organics” were the only significant factors allowing us to reject that the mean purchase frequency among those who chose these factors and those who did not have the same mean. The direction of difference was obvious - *those who chose “Organic is not important to me” or “I do not know how to identify organics” purchase organics less frequently than those who did not select these as deterring factors.* “Convenience,” with a p-value of .057, was moderately significant as a deterring factor as well. This may be noteworthy, as many students eat at very convenient dining halls that do not offer organic options. Further, its implications for future purchase are that if organic options are not more convenient post-graduate, students will continue to see this as a barrier to organic purchase.

While the results of the t-tests were not statistically significant for some factors, the frequencies of selections among students of deterrence to purchasing organics are still worth mentioning. Price was by far the most frequently selected, garnering 86% of the respondents. Fifty-two percent of those surveyed also listed “lack of options on campus” as a deterrent; this further supports the potential importance of convenience.

Eighty-one percent of students believed that there should be more organic options on campus, which is especially important, as 73% of respondents reported they purchased their meals at College X dining halls most of the time (23.2%) or virtually always (50%). Further, when asked how likely they would be to purchase more organic options if available at a slightly higher cost, 43% of students reported they would be likely to purchase these selections and 13% said they would be very likely to do so. While this result would seemingly encourage College X dining to consider offering more organic products, it conflicts with prior experience. As previously mentioned, College X dining offered to stock organic, fair-trade bananas in the dining halls in the past. While students petitioned to have this organic option, they were unwilling to pay the premium in practice. Thus, it is not clear

whether the expressed willingness to buy organics at a slightly higher price reflects a valid preference, or simply reflects an answer prompted by “social pressure” to answer in a way that is perceived as one that is “looked upon” more favorably.[‡]

Locally-Sourced Purchase Habits

Using the same t-test procedures, we measured the relationship between frequency of locally-sourced purchase and each motivating or deterring factor. The significant factors were “concern for local farmers,” “freshness”, and “I do not purchase locally-sourced foods.” For these factors, we can reject the null hypothesis that among those who selected each factor and those that did not, the mean purchase frequency was the same, suggesting that selecting these factors relate to how often one purchases local. *Concern for local farmers and freshness are motivators, in that selecting these corresponded with more frequent purchase of local.* As expected, those who reported they did not purchase locally-sourced foods had a lower purchase frequency.

Although not statistically significant at 5% to conclude a difference in means, the frequency of selection of some of the other factors may provide insight for students’ motivators. The most frequently chosen motivators were the aforementioned significant ones: “concern for local farmers” and “freshness.” However, “quality” also was indicated by 50% of the respondents as a motivator and “taste” by 43% of respondents. When surveyed about factors that deter purchase of locally-sourced foods, none of the most frequently selected options—“price” (44%), “convenience” (47%), and “lack of options” on campus (54%)—had significant results at 5% significance level. “Local source is not important to me” and “I do not know where to find locally sourced foods” were the only two tests that had a p-value < .05. Therefore, for only these two factors can we conclude that among those who identified these as deterring factors and those who did not, the mean purchase frequency was not equal. *For both factors, “local source is not important to me” and “I do not know where to find locally sourced foods,” the mean purchase frequency among those who selected the deterring factor was, not surprisingly, lower than those who did not select the factor.*

Similarly as to when asked about organics, 84% of respondents believe more locally-sourced options should be available on campus. Further, 48% said they would be likely to purchase the new local offerings at a slightly higher price and 10% said they would be very likely to do so. As with organics, these results suggest that College X dining should consider more local offerings, but again, the uncertainty of how high of a premium college students would be willing to pay and whether their actions would follow their reported purchase likelihood, is problematic.

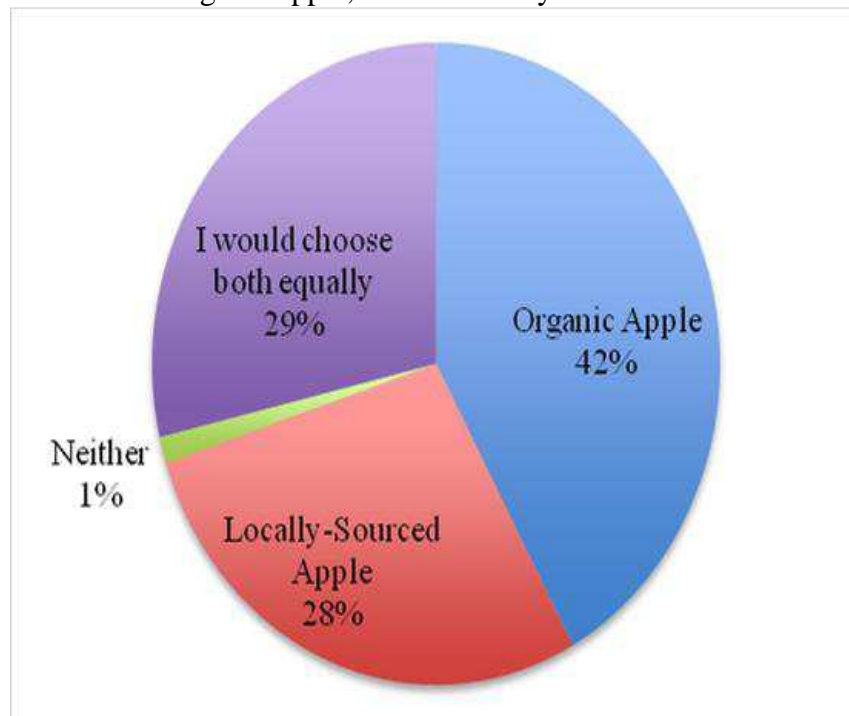
Interaction of Local and Organic

When asked to decide between an organic apple from a distant source, or a non-organic, locally-sourced apple, a greater number of students chose organic over locally-sourced. These results differ from those gathered in the 2008 Greene study asking a similar question (Greene, 2009). College X students choose the organic apple more frequently than Greene’s respondents (42% v. 22%) and are more decisive with only 29% choosing both equally, whereas 41% of Greene’s respondents chose both equally. The figure below indicates these percentages for our study:

[‡] There are many documented examples of this phenomenon. For example, a much larger percent of respondents indicate a preference for Masterpiece Theater over Cartoons than is reflected by real-world TV viewership data.

FIGURE 4

If given the choice of an organic apple that is not locally-sourced or a locally-sourced but not organic apple, which would you choose?



As the following figures show, the majority of those students surveyed believed the organic apple was healthier, but also more expensive.

FIGURE 5

Which do you believe is healthier?

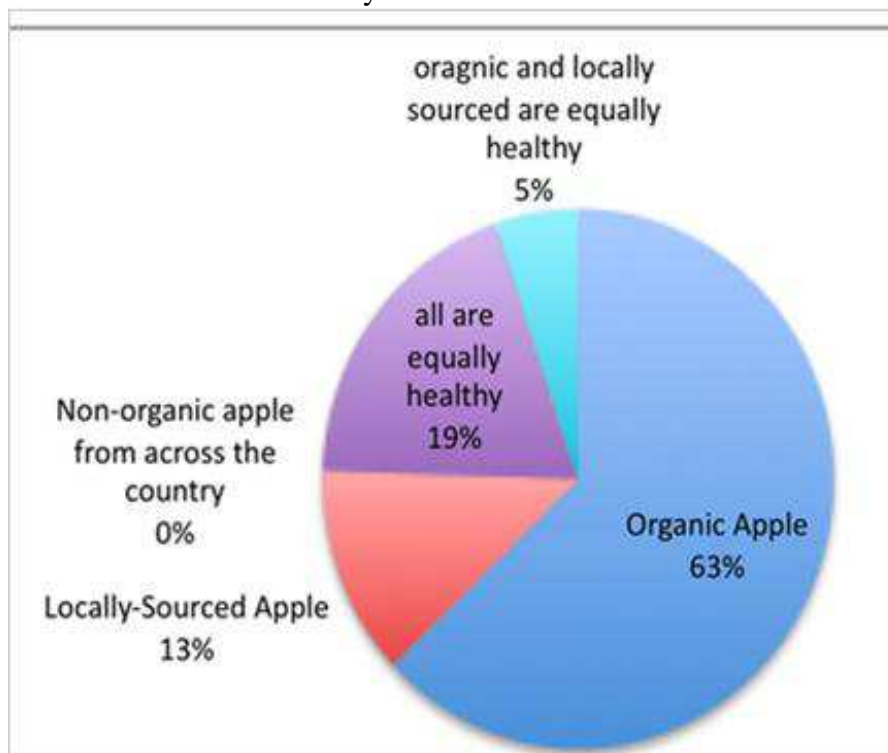
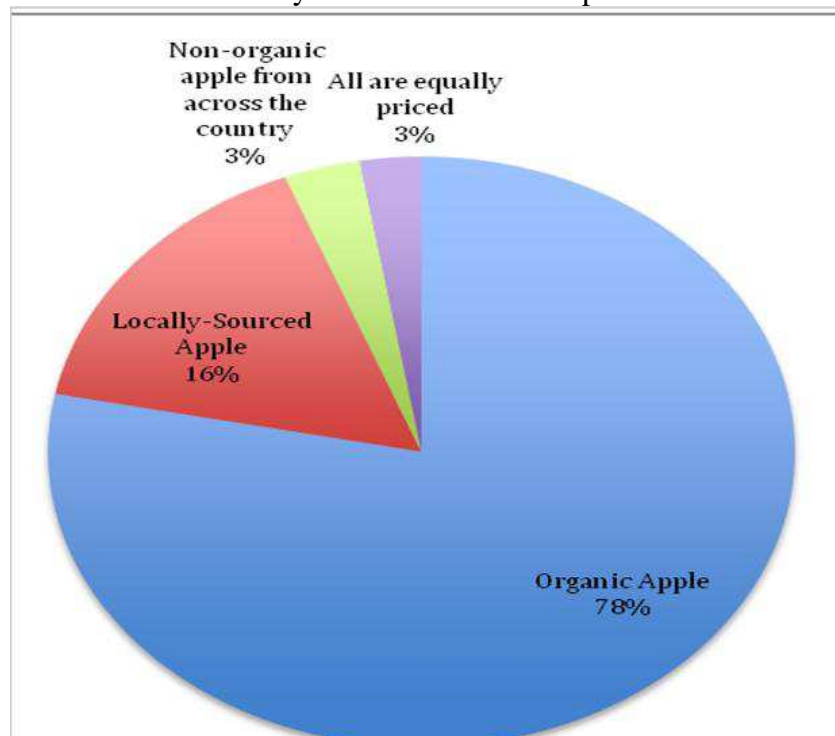


FIGURE 6

Which do you believe is more expensive?



After observing the frequency data, we conducted means comparison tests to determine if there were significant differences in mean purchase frequencies of organic and local foods between those who would choose each apple option. In this analysis, “Neither” respondents were combined into the “I would choose both equally” respondents, because only two students chose “neither.” Overall, there is a statistically significant difference in mean frequency of purchase of organic foods among the three different apple choices. To determine which specific means differed, we followed up the ANOVA test and used the Student-Newman-Keuls (SNK) test with overall error rate, $\alpha = .05$, and Fisher LSD test with $\alpha = .05$. Not too surprisingly, both found on average that those who chose the organic apple were more likely to purchase organic foods than those who chose the locally-sourced apple and those who did not care. The mean of those who chose the local apple and those who did not care did not exhibit a significant difference.

When comparing the mean local purchase frequency, results were similar, with significant differences between those who chose the locally-sourced apple and each of the other two groups, with no significant difference between mean local purchase frequency for those who chose the organic apple and those who did not care. The direction of difference was obvious: those who chose the locally-sourced apple purchase locally-sourced foods more frequently than the other subgroups.

The final statistical comparison we ran with this data was to compare means of whether respondents believed organic food is healthier than non-organic food. There was a significant difference (i.e., $p < .05$) in mean agreement with the statement between those who chose the organic, non-locally sourced apple and those who selecting one of the other two choices. To no surprise, those who chose the organic apple agreed more that organics are healthier.

Although 63% of respondents believed that an organic apple is healthier than a locally-sourced apple, when asked to choose between organic fruit-loops and non-organic raisin bran, 50% of students chose the raisin bran, compared to 34% who chose the organic

fruit loops. Multivariate testing of this question and the extent of respondents' belief that organics are healthier than non-organics resulted in insignificant differences in mean agreement among those who made each cereal choice. Subsequently, we reversed the variables to test if there was a significant difference in mean choice of cereal among different agreement levels.[§] The Fisher LSD test at $\alpha = 0.05$ found that there was a significant difference between the mean of "Strongly Disagree/Disagree" and the mean of "Neither Agree nor Disagree," but surprisingly, no significant difference between the mean of "Strongly Disagree/Disagree" and the mean of "Strongly Agree" that organics are healthier. Further, those who "Agree" had a significantly different mean than those who "Strongly Agree" with this statement.

The results overall suggest that while the majority of those surveyed believe organics are healthier than non-organics (therefore also non-organic local) in comparing an identical item, they also recognize that organic health benefits do not compensate for potential health deficits, such as the higher sugar content in fruit loops compared to that of raisin bran.

Demographic Differences

The key demographics captured and statistically tested were gender, school, and grade (i.e., freshman, sophomore, junior, senior). We tested comparisons of means within these demographics for the factors of: frequency of purchase of organics, frequency of purchase of locally-sourced foods, and extent of agreement that "organics are healthier than non-organics."

Considering gender comparisons, a t-test comparing males to females revealed a significant difference ($p < .05$) in mean frequency of organic purchase. Males purchase organics less frequently than females. There was no significant difference in means of purchase frequency of local food and belief that organic is healthier than non-organic.

Next, we performed t-tests to test for a significant difference in means between students in the different schools at College X. Because such a large proportion of respondents were enrolled in the business school, we grouped all the other schools into one category in this comparison. We rejected the null hypothesis of equal means and concluded that there is a significant difference in mean purchase frequency of organic foods between those enrolled in the business school and those in other schools, with non-business-school students purchasing organic foods more frequently. There was no significant difference in mean purchase frequency of locally-sourced foods or belief that organics are healthier than non-organics.

The third demographic tested was grade level. Because there were more than two means compared, we ran a one-factor ANOVA and then, for deeper analysis, the Tukey HSD and the SNK tests. In frequency of organic purchase between grade levels, the ANOVA indicated a significant difference among the mean of the four grades. Both the Tukey and SNK tests produced two subsets: 1. Senior, Junior, Sophomore and 2. Junior, Sophomore, Freshman. These results suggest that while a significant difference in means exists between seniors and freshmen, with seniors purchasing more frequently on average, differences in means are not clearly distinguishable between seniors, juniors, and sophomores, and nor between freshmen, sophomores, and juniors. This type of "inconsistency" not infrequently arises when performing a Tukey HSD test or SNK test (e.g., Berger and Maurer, 2002).

The same tests performed on the means of frequency of local purchase produced the same results with seniors again purchasing on average more frequently than freshmen. Among all grades, the purchase frequency of locally-sourced foods was less than that of

[§] For these hypothesis tests, "Strongly Disagree" and "Disagree" respondents were grouped into one category to get a more meaningful (i.e., larger) group sample size.

organic foods. In regard to the belief that organic foods are healthier than non-organic food, the ANOVA found no significant difference among the four grades.

Future Consumption Habits

The final section of the survey asked respondents the extent to which they agreed with a series of statements about their food consumption following graduation. The overwhelming majority of respondents predictably “Agreed” (44.3%) or “Strongly Agreed” (52.1%) that they would purchase their own groceries after graduation, meaning they would be forced to make more independent purchase decisions than they currently do as primarily customers of College X dining. Furthermore, 60.7% of students did not believe they would purchase most of their meals pre-prepared from sources such as restaurants, delivery, or take-out. Again, this suggests that students predicted they would be in the stores making food decisions and cooking for themselves.

This perceived change in food interaction supports a potential change in purchase behaviors regarding organics and locally-sourced foods, or opportunity to form new perceptions about these two subjects. When asked whether they thought they would be more likely to purchase organic foods and more likely to purchase locally-sourced foods (in separate questions) respondents responded relatively evenly. Few respondents “Strongly Disagreed” or “Strongly Agreed” with either statement, and the distribution was about 30% affirmative for “Neither Agree nor Disagree” and for “Agree”. The number of disagree respondents was in a similar range, around 23% with regard to both organic and local. These results (means of 3.06 and 3.08 for organic and local, respectively, with the neutral choice being 3) suggest that, overall, students are not completely sure how their purchase habits will manifest outside of the college system.

Students overwhelmingly predict their food consumption habits to depend primarily on convenience and price. As these were frequently selected deterrents to purchasing organic and local foods, this could steer further consumption away from these products. On the other hand, different interaction with the purchase of these products could change the circumstances of convenience and could provide new price points. Yet, if proximity and price will be the motivators for increased purchase, it indicates a lack of emphasis on the benefits of organic and local food.

CONCLUSIONS

The goal of this paper is to investigate the developing trends of organic foods and locally-produced foods. In particular, we hoped to gain insight into consumer opinions of these industries and their corresponding purchase habits, both through examination of past studies and by conducting a survey of the College X undergraduate student population. Although the subject pool was only a small percentage of the College X student population, the conclusions from the data can be useful in understanding the purchase mindset of the typical undergraduate college student and beginning to make conjectures about their behaviors as post-graduate, independent consumers.

Overall, College X students seem to be aware of some benefits of organic and local foods and understand that there is a difference between the two. Students’ belief that organic and local are important is about equally strong, suggesting both that the majority of students do not put an emphasis on one type of food or the other. That being said, students believe the organic choice to be healthier than local and, all else equal, would choose that option more frequently.

As in past research, students most strongly associated organic foods with health, absence of pesticides, and high prices. Students’ associations with local foods matched some past research in that they believe locally-sourced foods to be more community responsible

and sustainable. Further, the other strong associations found in past research - taste and freshness - were identified as significant motivations for purchase of locally-sourced foods.

As in Zepeda and Li's (2006) study, there is a difference between attitudes students expressed toward local and organic foods and actual student purchase behavior. While a significant number of students indicated that they believed organics and local foods to be better choices than conventional foods, support more options on campus, and indicated a willingness to pay a slight premium for these products, in practice, they stuck to the foods that are cheap and convenient. The issue with these products seems to be that until they are convenient and competitively priced, students do not feel strongly enough about the benefits to make different choices. Yet, until students are willing to invest in purchasing these types of foods regularly, College X dining does not have the economic ability to offer the convenience and price students want. In essence, there is "the chicken vs. the egg problem," which is something that both of these industries will likely face on a greater scale as they continue to grow.

Students facing independence post-graduation will become the next generation of food consumers. Without the built in convenience, but also without the constraint of College X dining offerings, they will have more opportunity to figure out how local and organic fit into their routines. Again, while some still in college believe they will change their habits when they are on their own, the draw of fast food and conventional supermarkets will still be strong. Nevertheless, as mainstream retailers and restaurants incorporate more local and organic options, it will be increasingly easy for these students to make local and organic a part of their lives.

The key to growth of the organic and local food industries is knowledge among consumers of the value of food and health over convenience and price. Both at College X and in the general consumer market, supporters of these industries need to show general consumers that organic and local products can be more accessible than most consumers believe. The final hurdle however, is convincing consumers that their health and food value is worth the small amount of extra effort and restraints that purchasing local and organic entails.

Finally, as these industries continuously develop, more people will likely become aware of the boundary lines between organic and local. At the same time, as awareness grows, or if the perception that these two concepts are inherently linked perpetuates, these two industries might become increasingly intertwined to synergize the benefits. If the strongest motivations for purchasing organic and local are truly freshness, quality, health, and reduction of toxins, producers should be pushed to use organic production techniques and local source simultaneously.

LIMITS AND DIRECTIONS FOR FURTHER STUDY

This study was limited by sample of respondents, and survey design. This study sample was limited to the College X undergraduate population. Further, for convenience, the questionnaire was distributed disproportionately to business-school students. Finally, distribution techniques were more likely to reach seniors and freshmen due to the specific faculty members who aided in the distribution of the questionnaires. Thus, there are limits on the representativeness of the sample, although there is no reason to believe that this invalidate the results to any material degree.

Further research could expand the sample, first to a more inclusive cross-section of the College X population, which would allow a more even comparison among all four grade levels and among different schools within College X. After expansion to all of College X, other colleges/universities could be included in a study, thereby adding insight to views in different collegiate atmospheres, geographic locations, and among different dining systems.

Another direction, a major, and more expansive and expensive direction, would be to track actual purchase and consumption habits after graduation for those surveyed as students.

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