

Chapter 4: Presentation and Discussion of Findings

This chapter reports the findings of our food system surveys for farmers, processors, distributors, retailers, and consumers. We first provide an account of the descriptive statistics for each survey question. Next, we discuss the results of the statistical tests we conducted that analyze the relationship between demographic and descriptive qualities of the survey respondent and their interest in the local food system, their perceived barriers and opportunities within their sector of the food system, and any other noteworthy relationships. Both the processor and distributor surveys only received enough responses to warrant a descriptive statistical analysis. For each survey, we provide a summary of that sector's demand for local food, the perceived barriers of engagement in the local food system, and the opportunities that exist to develop the local food system in Southeastern Michigan. We end with a summary description of the demand, barriers, and opportunities for the whole regional food system by drawing connections between the surveys.

Producer Survey Results

Introduction

Agriculture is the foundation of the food system and a critical component of the economy. Despite the centrality of producers and their products, the relationship between farmers and consumers in the global, industrial food system is often distant or even non-existent (Kloppenborg *et al.* 1996; Hendrickson *et al.* 2002). Attention to the needs, demands, and perceptions of producers is vital to the establishment of a viable alternative local food system. When regional consumers support local farmers, the community as a whole stands to benefit environmentally and economically (Palan 2005). Potential benefits include increased investment in the local agricultural economy, farmland preservation, reduced use of fuel for transportation, and increased viability of small and medium-sized farms. Relationships between farmers and consumers, often mediated by other food system actors like distributors and retailers, are the most fundamental links within the local food system. When these bonds grow stronger, they can fuel the fervent dedication of local food system leaders, planners and policy-makers who catalyze systemic change toward intentionally localized food systems.

Farming in southeastern Michigan

Due to the rich soils and diverse microclimates in the “Great Lakes State,” Michigan is the second most agriculturally diverse state in the United States. Michigan's farmers produce over 200 crops

(Michigan Department of Agriculture 2006; Michigan Food Policy Council 2006). The five-county study area of southeastern Michigan boasts a substantial and diverse agriculture base. There are over 5,500 farms covering nearly one million acres of land. In 2002, these farms produced agricultural products worth over \$320 million, 8.5 percent of the state's total market value of agricultural products. The region is among the top producers of livestock including sheep, hogs, cattle and calves. Many farms produce commodities including corn, soybeans, wheat and dairy and there is a growing number of small vegetable farms.

For myriad reasons including low commodity prices, increasing costs of inputs and processing, and increasing land values due in part to urban development, land in farming has decreased throughout the state and in the region. In the five-county study area, farmland acreage decreased by 50,000 acres between 1987 and 2002 (U.S. Department of Agriculture National Agricultural Statistics Service 2002). This trend is expected to continue in the face of projected growth in Washtenaw, Monroe and Lenawee counties over the next few decades.

Survey goals

Viable farms are an essential component of the food system and strengthening the connections within the local food system has the potential to help support farmers and keep land in agricultural production. To inform strategies and policy to build these connections, we developed a producer survey to learn about the local food system directly from the perspective of farmers in the region. The goals of the producer survey were to gather information from local producers about their current farming practices, their interest in participating in a more localized food system by selling their products directly to local consumers, processors or retailers, and the key barriers that inhibit a more localized food system.

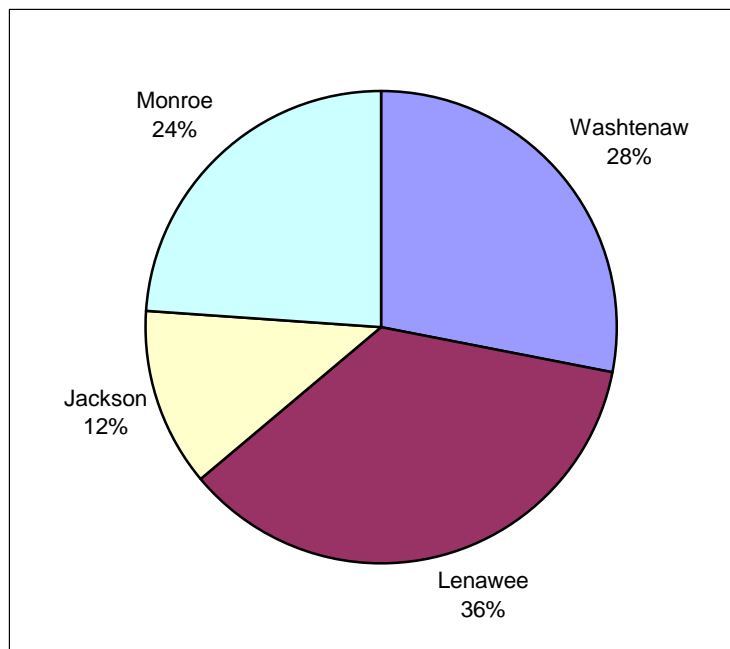
Survey design

The producer survey consisted of 17 questions (Appendix 8). After a basic set of questions about the farm location, size, crops and profitability, we asked about current level of participation in the local food market, future interests in selling more of their products locally and the perceived barriers to participating in the local food economy. Respondents had the option of including their contact information at the end of the survey if they were willing to correspond with FSEP in the future.

Response rate and demographics

We sent eighty surveys to farmers in Monroe, Lenawee, Jackson and Washtenaw Counties. Due to the relatively small number of farmers in primarily urban Wayne County, we did not include Wayne producers in the survey. Thirty-eight farmers returned the survey, an overall return rate of 47.5 percent. Twenty-four respondents responded to the questions about farm location. Of those who identified location, 20 different zip codes were represented in the sample showing a broad geographic distribution. By county, three farmed in Jackson, nine in Lenawee, six in Monroe and seven in Washtenaw (Figure 19). Most of the producers in our sample reported farming as a full-time occupation (71.1%).

Figure 19: Producers by County



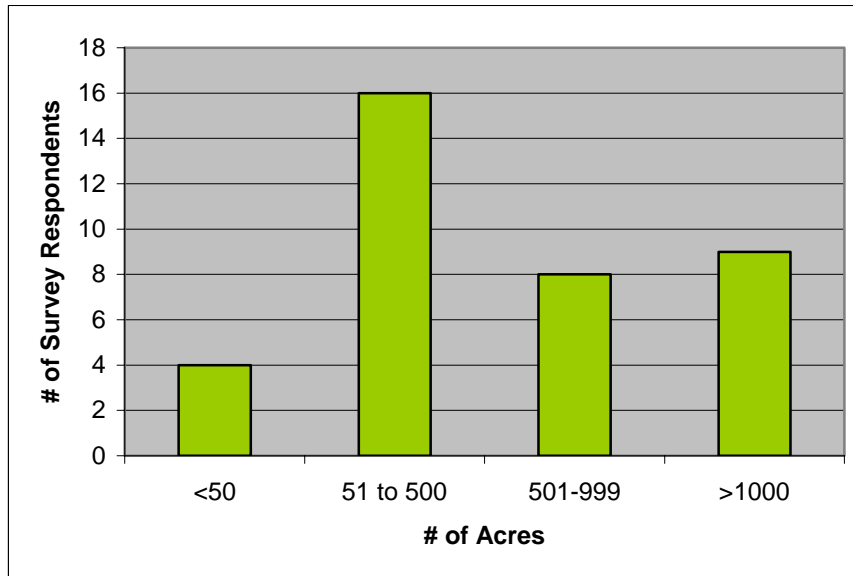
The roughly representative sample of producers included 9 responses from producers in Lenawee, 7 from Washtenaw, 6 from Monroe, and 3 from Jackson.

Farm size and products

Nearly all of the respondents included information about the size of their farm by checking the acreage range that best described their working land (n=37). Four farmers in our sample (11.8%) farmed on fewer than 50 acres. Just **over half (54%) of the survey respondents work on or own small or medium farms**, defined as fewer than 500 acres. About 22 percent (21.6%) farm 500-999 acres and nearly 25 percent (24.3%) work farms over 1,000 acres (Figure 20). Grain was the most commonly grown crop, 25 of the respondents (65.8%) grew grains. Thirteen of 38 (34.2%) grew

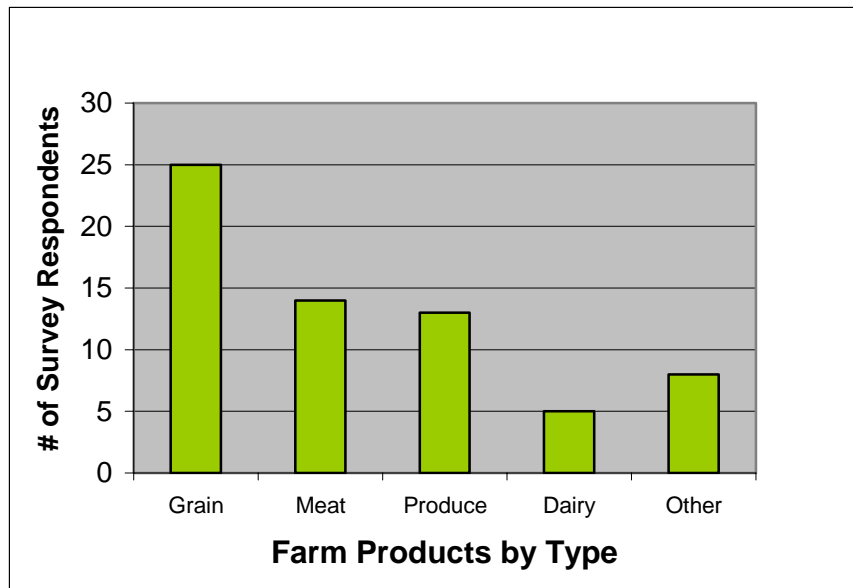
produce (fruits and vegetables) and five (13.2%) worked a dairy farm (Figure 21). Eight farmers (21.1%) reported that they sell other types of products in addition to primary crops. Cited examples of other crops included wood, eggs, honey, hay, straw, popcorn, wine, gourds, nuts and flowers.

Figure 20: Farm Size by Acreage



The majority of producers worked on medium sized farms, while roughly 1/5 worked on farms larger than 1000 acres and 1/10 worked on small farms.

Figure 21: Farm Products Produced by Survey Respondents

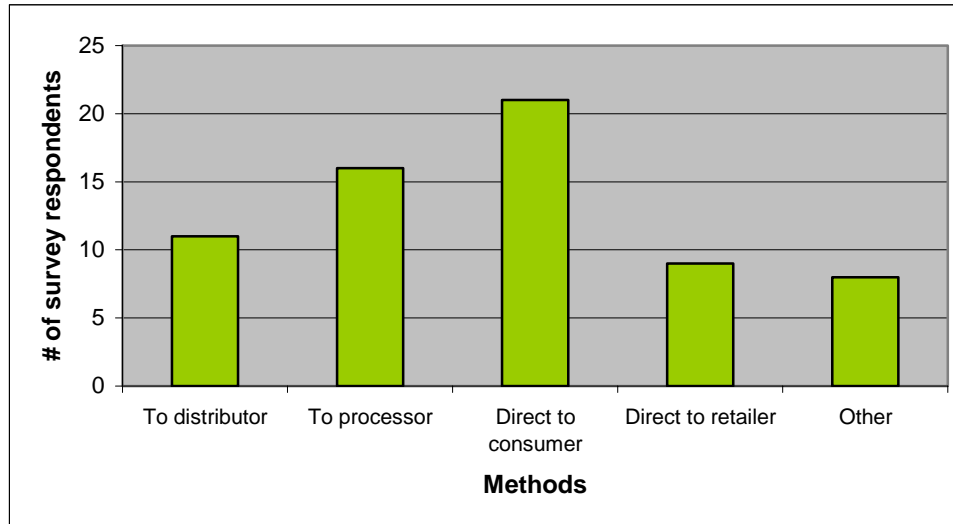


Since many producers cultivate more than one agricultural good on their farm, each survey participant could choose more than one option. Most farmers produce at least some grain product. Over 1/3 produce meat and/or produce. Roughly 13% produce dairy.

Marketing Farm Products

We asked farmers to report all of the means by which they sell their products (n=38). Eleven farmers (28.9%) reported that they sell their products **to a distributor**; 16 (42.1%) reported that they sell **to a processor**; 21 (55.3%) reported that they sell **directly to consumers**; 9 (23.7%) reported that they sell their products **directly to retailers**; and 8 (21.1%) reported that they sell their products **to “other”** food stakeholders (Figure 22). Written examples of other markets included brokers, wholesalers, other farmers, grain elevators, and livestock exchanges. Grain farmers were more likely to sell to a processor or distributor. Farmers selling produce were more likely to sell directly to consumers and to retailers. Nineteen (50%) of the respondents reported selling their products via multiple means while 6 (15.7%) only sold direct to consumer.

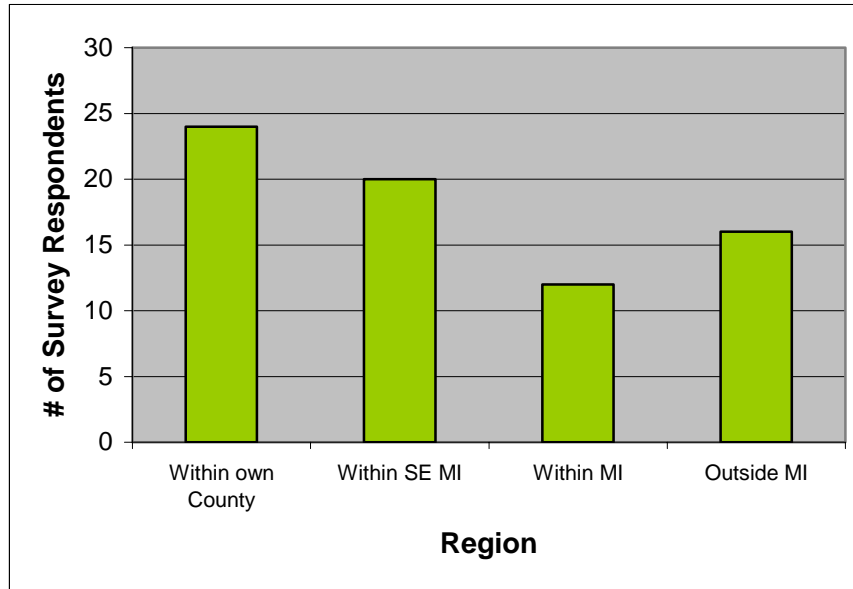
Figure 22: Producers' Methods of Sales



Most farmers sold directly to consumers via some method, followed by selling to a processor or distributor. More than one answer could be chosen for this question.

To learn more about where food grown in the region is sold, we asked farmers to indicate the geographic location of the buyer(s) of their product. Respondents could check all locations that applied (n=38). Nearly two-thirds of farmers (24 of 38) sell at least some of their products within their own county or another county in southeastern Michigan. Over 40 percent (16 producers) sell at least some of their products outside of the state of Michigan. Meanwhile, 53% (20 producers) sell at least some of their products within the region and roughly one-third (20) producers sell to other areas within the state of Michigan (Figure 23). Over half (52.6%) indicated that the buyers of their products were located in multiple areas (i.e. they sold their products both within their county and outside of the state).

Figure 23: Producers' Geographic Sales Areas

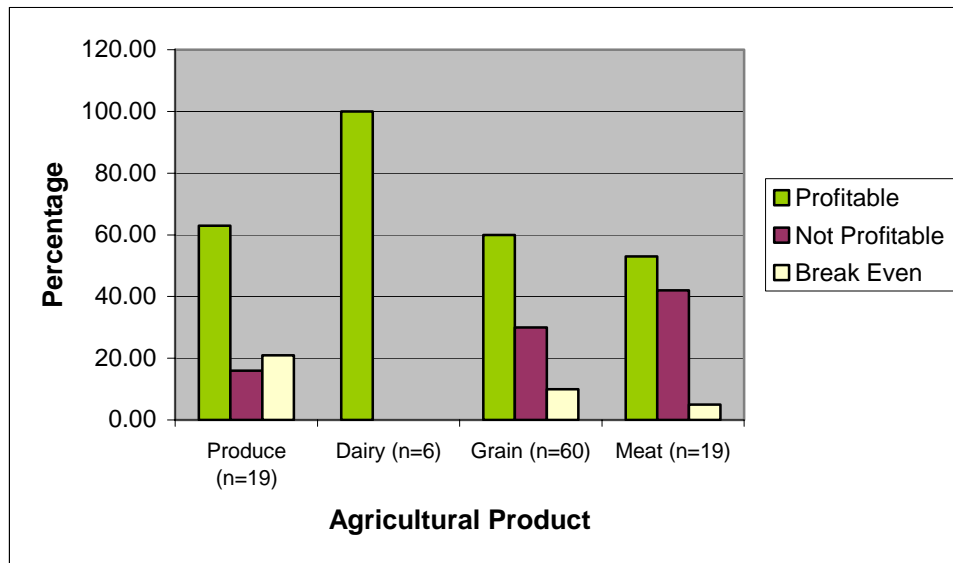


There was a fair amount of variability in where farmers sell their goods. Most sold at least some goods within their county while 1/3 sell out of state.

Farm Profitability

Among other indicators, farm profitability can provide some insight into the future of farming in the region. We asked farmers to indicate the overall profitability of each of their agricultural products over the last five years. Overall, 60 percent of the sample reported making a profit on their crops; 28 percent broke even; and 10 percent lost money. The results varied among types of farmers. Grain farmers reflected the overall trend as 60 percent were profitable; 30 percent broke even; and 10 percent were not profitable (n=60). Produce farmers had the highest rate of losses yet most were profitable (n=19): 63 percent of produce growers were profitable; 15.8 percent broke even; and 21.1 percent were not profitable. And a large proportion of meat producers reported neither profits nor losses (n=19): 53 percent of meat producers reported a profit; 42 percent broke even; and 5 percent were not profitable. Of the six producers that make dairy products, all (100%) reported making a profit (Figure 24).

Figure 24: Profitability of Farmers by Agricultural Product

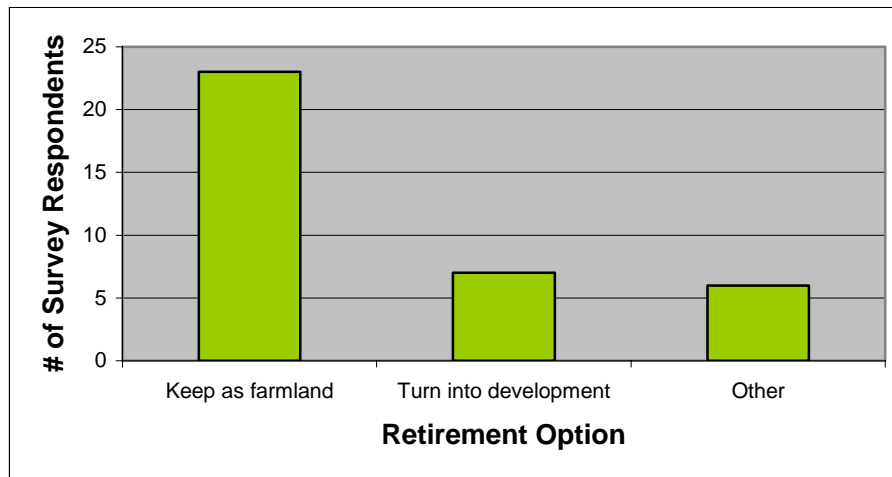


Produce and dairy farmers were more profitable. Grain farmers reflected the sample averages; and meat producers reported roughly even levels of profitability and non-profitability.

Farm Succession

In the face of rapid urban and suburban growth, farmland in the region is regularly sold to developers for housing and retail developments. In many cases, these transactions happen when farmers reach retirement age. We asked farmers to share their plans for their farm and farmland when they retire (n=36). Roughly two-thirds of the farmers in the survey expressed the desire to keep their farm and farmland in farming when they retire, either through the sale of their farm and farmland or by giving it to their children, relatives, or friends. About 20 percent reported that they intended to change their farm and farmland over to a non-farming use, either through the sale of the land to developers or by giving it to their children, relatives, or friends, who would develop it (Figure 25).

Figure 25: Retirement Plans for Agricultural Land



The majority of farmers plan to keep their land in farming either by passing the land onto their children or selling it to farmers. Roughly 20% plan to sell their land to developers.

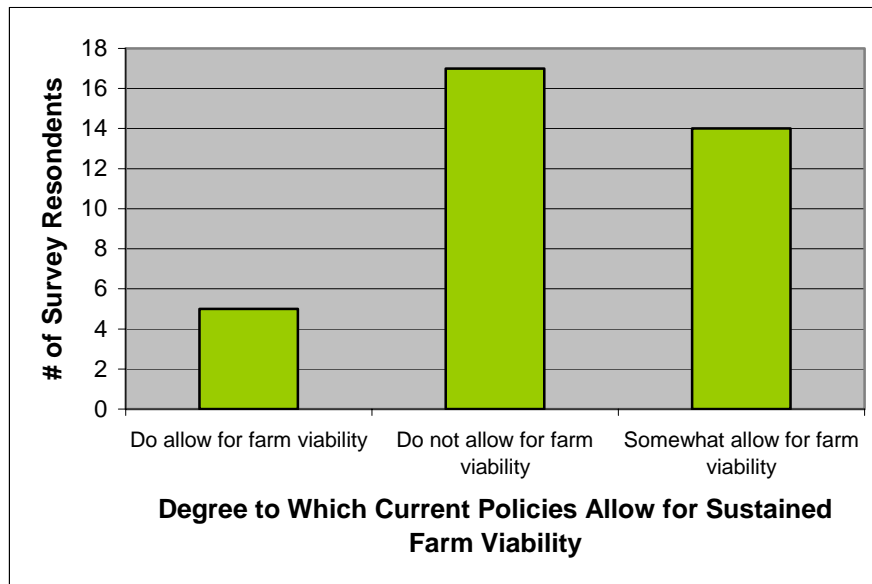
Agricultural Policy

Farmers are ingrained in a complex system of state and federal agricultural policy that influences their practices and, thus the local system. When asked whether current markets and farming policies allow for sustained farming viability:

- 17 of 36 farmers (47.2%) believed that current markets and farming policies **do not allow** for sustained farming viability.
- 14 of 36 farmers (38.9%) reported that they felt that current markets and farming policies **“somewhat” allow** for sustained farming viability.
- Five of 36 farmers (13.9%) had the opinion that current markets and farming **policies do allow** for sustained farming viability (see Figure 26).

In an open-ended follow-up question, we asked farmers to cite the main factor **enabling** sustained farming viability. Twenty-five farmers responded to this write-in question. The answers varied widely, but many farmers mentioned **consumer interest, viable markets** for their products and **low costs**. Written responses included: “an **informed public** willing to support sustainable farming,” “good markets and **good prices locally**” and “market opportunities and **market infrastructure.**”

Figure 26: Producer Perceptions of Farm Policy



The majority of farmers do not have faith that the current policies will enable sustained farming practices.

Though not statistically significant, we found those that want to keep their land as farmland tend to be more profitable than those that want to develop their land (Mann-Whitney: $z = -1.500$, $p = .158$, $n = 30$).

Producing food for the local market

As the core of the food system, local producers must have an interest in participating in an intentionally localized food system in order for it to work. To begin to gauge this interest, we asked farmers about the existing opportunities for marketing their products locally and about their interest in participating in the local food economy.

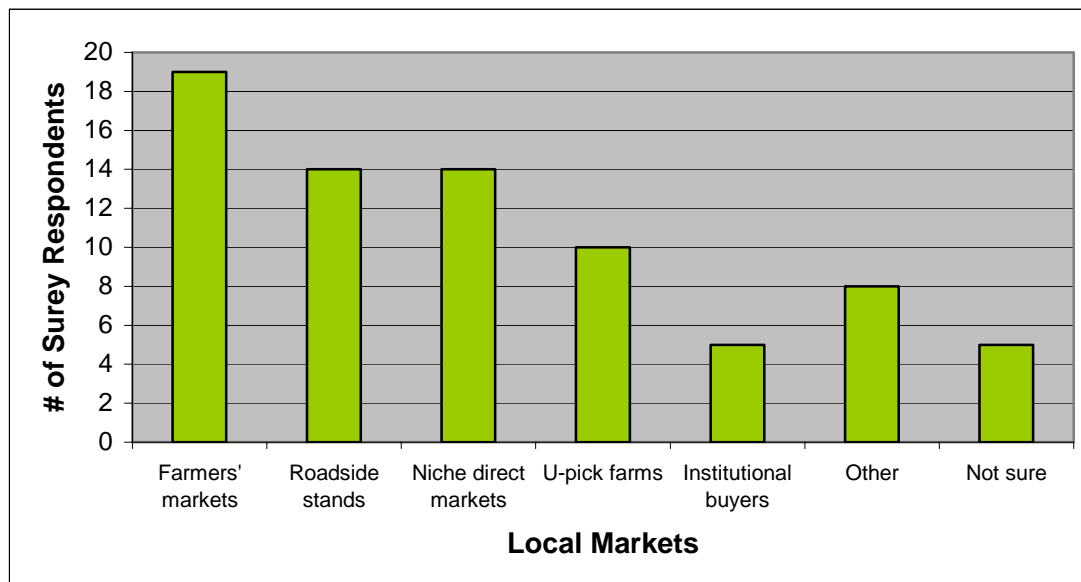
Existing Opportunities to Market at the Local Level

With regard to existing local food marketing opportunities, we asked farmers to check all that applied from the following options: farmers' markets, roadside stands, U-pick farms, institutional buyers, and direct niche markets (Figure 27). There was space to write in other outlets, as well.

- 19 of the 38 farmers (50.0%) reported that “**farmers' markets**” were an opportunity that existed in their community for the direct sale of farm products.
- 14 of the 38 farmers (36.8%) reported that “**roadside stands**” were an opportunity that existed in their community for the direct sale of farm products.

- Ten of the 38 farmers (26.3%) reported that “**U-pick farms**” were an opportunity that existed in their community for the direct sale of farm products. U-pick farms often have farm stands that sell regional products that did not originate on the farm directly.
- Five of the 38 farmers (13.2%) reported that “**institutional buyers**” were an opportunity that existed in their community for the direct sale of farm products. Institutional buyers include schools, hospitals, prisons and government facilities.
- 14 of the 38 farmers (36.8%) reported that “**niche direct markets**” were an opportunity that existed in their community for the direct sale of farm products. When asked to elaborate on what these niche direct markets were, farmers wrote “local slaughter house,” “word of mouth to consumers,” “restaurants and co-ops,” “community supported agriculture,” “straw sales,” “home delivery,” and “supply large farm with feed.”
- Eight of the 38 farmers (21.1%) reported that “other” types of opportunities existed in their community for the direct sale of farm products. Farmers listed “other” opportunities as: “on farm retail store,” “direct on the farm,” “food co-op,” “retailers and distributors,” and “growers cooperative.”
- Five farmers (13.2%) were “not sure” about the opportunities that exist in their communities for direct sales.

Figure 27: Existing Opportunities to Market Local Goods

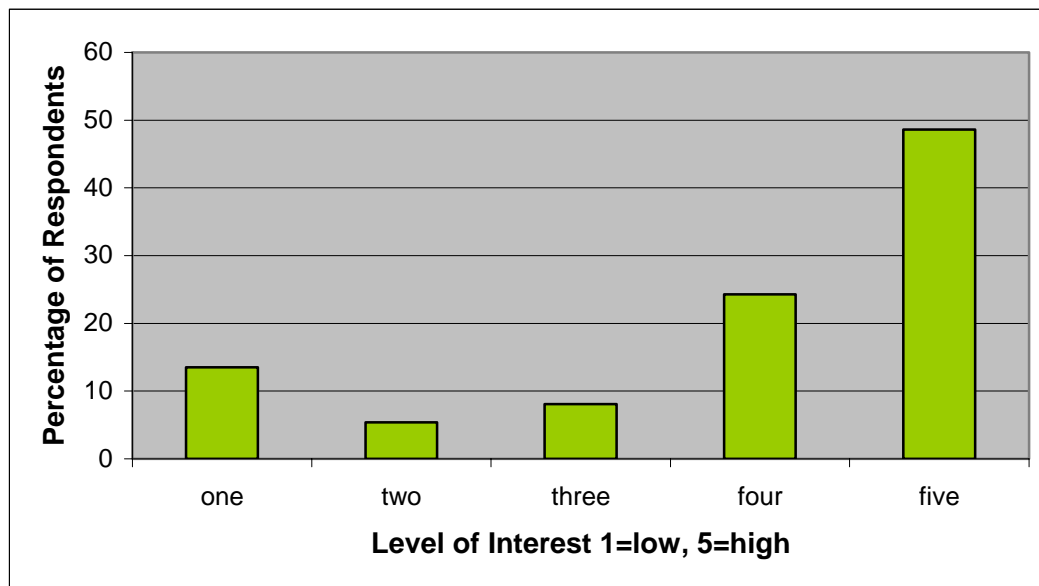


Local producers are most aware of classic local markets such as farmers' markets and roadside stands. Fewer are aware of opportunities such as institutional buyers (schools, hospitals, etc.) to sell their local goods to.

Future interest in participating in the local food economy

We asked farmers to rate their level of interest in selling their food directly at the local level using a Likert scale. With “1” as lowest interest and “5” as highest interest, the overall mean was 3.89 (n=37), with a standard deviation of 1.43. Nearly three fourths of the respondents indicated a high or very high level of interest in direct marketing their products. Nearly half of the respondents (48.6%) rated their interest as a “5” and nine (24.3 %) reported a “4.” At the other end, five of the 37 farmers (13.5%) indicated a low interest of “1” in selling their food on the local market (Figure 28). The five farmers that indicated low interest in selling their products on the local market were all large farms growing over 500 acres of grains plus some produce, meat or dairy.

Figure 28: Producers’ Future Interest in Marketing Local Goods



Producers indicated a very strong interest in participating in the local foods market with nearly half indicating a high interest of (5) and another 25% reporting a 4.

Full vs. Part Time Employment and Interest in Local Marketing

We tested to see if there was a relationship between interest in local agricultural markets and whether farming was full or part time occupation for the survey respondent. Using the Mann-Whitney Test, we found no significant correlation between farmer occupation and interest in selling local foods (sig=.602). However, 70% of fulltime farmers and 80% non-fulltime farmers rate their interest high in selling local foods with a 4 or 5. Fulltime farmers were more apt to rate interest in local foods lower (26% rated their interest with a 1 or 2 score), whereas zero non-fulltime farmers ranked their interest at this level.

Preserving Farmland and Interest in Local Marketing

A split group descriptive statistic test was run between the survey question “When you retire, what do you expect to do with your farm and farmland?” and question “Rate your interest level in selling your products directly at the local level.” The results in question addressing retirement plans were consolidated into two groups: those that desired to keep their farmland as agricultural land and those that desired to develop their farmland.

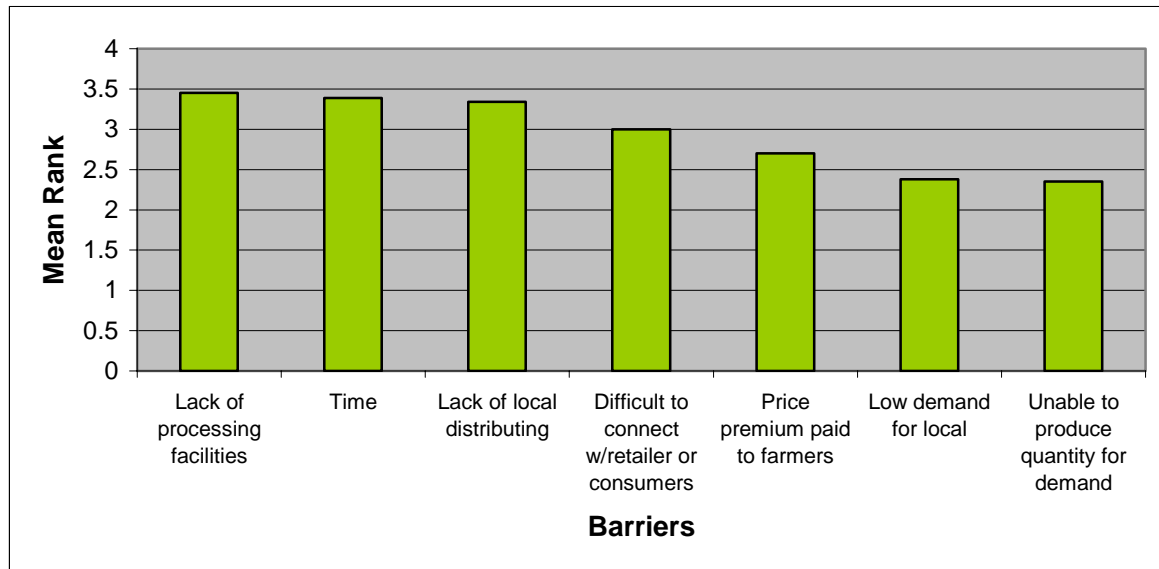
After running a Mann-Whitney Test, we found no significant correlation between what the farmers wanted to do when they retire and their interest in selling local foods (sig.=.266). However, we observed that those who wanted to keep their farmland as farmland were more likely to rate a higher level for interest in local foods than those that sought to develop their farmland. The mean scores for this were 3.91 and 3.14, respectively.

Barriers to participating in the local food market

One of the key goals of our survey was to learn more about the barriers and perceived barriers to food production for the local market in order to better inform efforts to improve the connections among stakeholders in the local food system. Based on background research, we identified seven potential barriers and asked respondents to indicate the level of importance of each on a “1” (low factor) to “5” (high factor) Likert scale. The question read: “Using the scales below, indicate the degree to which the following factors limit your direct local sales” (Figure 29).

The top three barriers indicated were “**lack of processing facilities**” (mean=3.45), “**requires too much time**” (mean=3.39), and “**lack of distribution system for local products**” (mean=3.34). With a mean of 3.00, “difficult to find, interact, or correspond with retailers and consumers” was a close and notable fourth barrier. Also important to note are the less highly rated barriers: “unable to produce sufficient quantity to meet demand” (mean=2.35), “insufficient demand for local products” (mean=2.38), and “price premiums paid to farmers” (mean=2.70) were the lowest rated options.

Figure 29: Producers' Perceived Barriers to Involvement in Local Markets



Top barriers to farmers include lack of local processing facilities, additional time requirements for local marketing, and lack of distributors willing to transport local goods.

To supplement their responses to given options, we asked farmers list any other barriers to direct local sales. Farmers provided an array of answers, but some key themes emerged. These included government regulations (“federal and state regulations,” “government regulations are unreasonable”), costs and prices (“labor,” “costs too much to start a business” “prices are chronically low-it is hard to produce and market enough to sustain oneself”) and lack of market for their products (“there is no local marketing in the quantity we produce,” “no buyer in marketplace”). One farmer mentioned that there are “no elevators that purchase organic grains.” Another indicated “publicity and advertisement” as a barrier to direct marketing of their products locally.

Interest in Local Sales and Perceived Barriers of Local Food System

A non-parametric Spearman correlation test analyzed the relationship between Question 8: “Indicate the degree to which the following factors limit your direct local sales” and Question 9 “Rate your interest level in selling your products directly at the local level.” Two relationships showed significant associations. There was a negative correlation between level of local food interest and the barrier “difficult to find, interact, or correspond with retailers and consumers.” ($r = -0.388$, $p = .047$). Therefore, those farmers with a greater interest in increasing local food sales were likely to rate “difficult to find, interact, or correspond with retailers and consumers” as a low barrier. Those who were less interested in local marketing rated connections with retailers and consumers as a

considerable barrier. Similarly, farmers with significant interest in increasing local food sales were likely to rate “insufficient demand for local products” as a low barrier and vice versa ($r = 0.425$, $p = 0.012$). The mean ranks between level of local food interest and the barrier “insufficient demand for local products” were also negatively correlated.

Some additional tests

The following tests all showed no statistical significance but may be worthy of note and further study.

- Farmers with more interest in local food sales tend to operate small or medium sized farms. Spearman- $(r=-.209, p=.214)$
- Producers who want to keep their land as farmland when they retire have a higher interest in local foods sales than those that desire to develop their farmland. Mann-Whitney- $(Z=-1.199, p=.266, n=30)$

Producer Survey: Summary of findings

The survey of food producers in the five-county region returned many interesting and significant results. Key findings from the producer survey included:

- Nearly half of the farmers surveyed currently sell some of their farm products directly to consumers.
- Two thirds of the farmers sell at least some products within the state of Michigan; 42% sell at least some products outside the state.
- Many farmers are not aware of some opportunities to market their products locally, e.g. institutional buyers.
- Nearly 75 percent of farmers in our sample are interested in increasing their direct local sales.
- Farmers who are more interested in local food sales tend to operate small or medium sized farms.
- Part-time farmers have a high degree of interest in local food sales.
- Producers who want to keep their land in agricultural use when they retire have a higher interest in local foods sales than those who desire to develop their farmland.

- Farmers most interested in participating in the local food system **did not** find demand for local products to be a barrier.
- Farmers who are less interested in local marketing found interacting with retailers and consumers to be a considerable barrier. Those farmers who had high interest in local marketing did not find interactions with retailers and consumers to be a barrier.

Processor Survey Results

Introduction

Processors are businesses that add value to raw agriculture material. In doing so they make products available to a wider array of consumers through more diversified forms of food products. It is through processing facilities that we get products like canned vegetables and fruits from produce, crackers and bread from milled grain, cheese from milk, soy milk and tofu from soybeans, and slaughter house cuts of beef from animals. Processing is also a central means by which we consume local goods year-round. Though it is difficult to find local lettuce in January, we can easily purchase local jams, canned goods, dairy products and meats regardless of the season.

In today's global agri-food system, many processing facilities are autonomous entities often hundreds to thousands of miles away from the farms from which they receive products. On-farm processing presents an alternative to this model of remote processing. In on-farm processing, farmers are in control of the management of processing and marketing activities, and thus receive the economic benefits of the value-added opportunities (Gellynck *et al.* 2002). Local food systems look to on-farm processing as a means to overcome some of the shortages of local processing facilities, as well as creating more robust economic opportunities for local producers.

Processing in Southeastern Michigan

In southeastern Michigan, processors are possibly the least well-represented sector of the food system, with relatively few local processing facilities housed in our region. While it is difficult to quantify the number of processors given the many different definitions of food processing, there are over 100 food businesses that can be considered processors in the five-county area.⁸ The majority of these are “starch processors” including bakeries, candy and confectionaries, brewers, wineries, snack manufacturers and noodle manufacturers. There are about a dozen dairy processors that produce ice cream and frozen desserts and about 20 meat processors including meat packers and sausage makers. Examples of local processors include Jiffy Mix, Zingerman's Creamery, and Eden Foods.

Survey goals

Regionally-based processing businesses are necessary to maintain a diverse local food system that exists beyond niche markets. Local processors are also a solution to the barrier of seasonality—they

⁸ This number was derived from a list of food-related businesses in the Study Area furnished to FSEP by Michigan State University Product Center.

allow people to consume local goods right through the winter months. To elucidate regional processors' perception of the local food system and inform these perceptions to the central actors of our food system, we developed and distributed a survey to area processing businesses. The goals of the survey were to assess processors' current and future interest in the local food system, gauge perceived barriers to their involvement in processing local foods for the local market, and to compare this information with general information about the type of processing businesses surveyed.

Survey design

The processor survey consisted of eleven questions (Appendix 9). The questions were all multiple choice and five-point Likert scale questions. After a basic set of questions about the business location, size, and type of customer base, we asked about current level of participation in the local food market, future interests in participating in the local food market and the perceived barriers to participating in the local food economy. Respondents had the option of including their contact information at the end of the survey if they were willing to be contacted for more information.

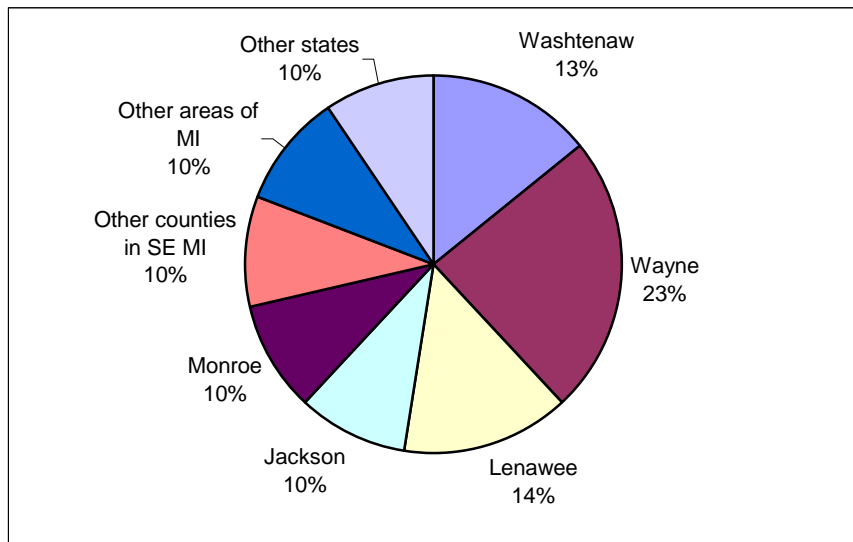
Response rates and demographics

We received a 10% response rate with 8 individual responses to the 77 surveys we mailed out to a randomly generated list of processors in the area. Because of the small response rate, we only ran descriptive statistics on this survey. Of the eight processors responding, all were from different zip codes. Five were based in Wayne County two in Lenawee and one in Washtenaw.

Geographic Service Area

When we asked to indicate all the counties and regions their business served, we found four businesses served more than one area, with two choosing all of the counties and other areas of Michigan. Of the four processors that only reported working in one area, one served Wayne County, one served Lenawee, one served other counties in Southeastern Michigan (Hillsdale), and one served other states (Figure 30). In general, there was a fairly even distribution to each of the counties in our region. However, this question did not take into account size and capacity of the processing facilities. The following figure shows the service areas within which processing businesses supply.

Figure 30: Processor Service Areas

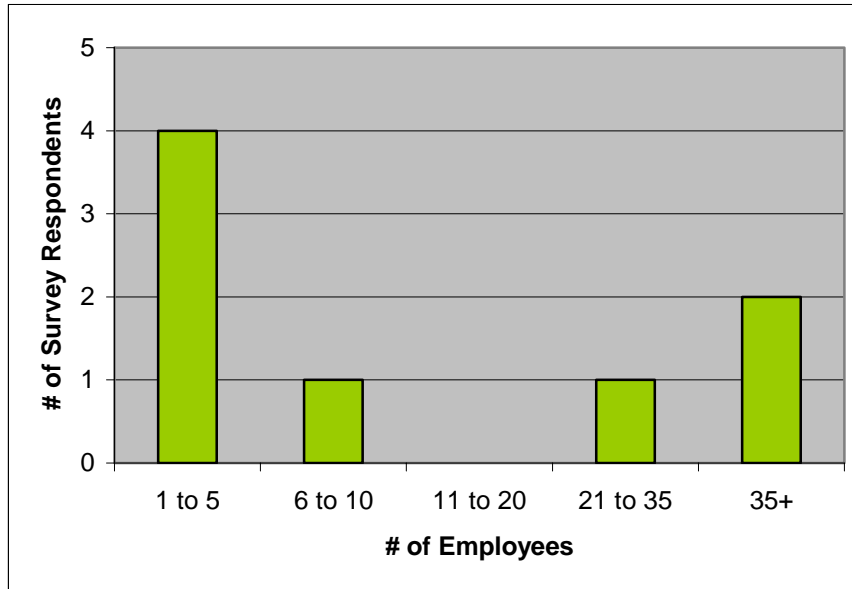


Processors sell goods in all of the counties in southeastern Michigan as well as other areas of the state and other states.

Number of Employees

The size of processor businesses varied with four small businesses (1-5 employees); one with a medium sized business (6-10 employees); and 3 with a large business (greater than twenty employees). Therefore, most of the processors are smaller operations, with over 60% having fewer than 20 employees (Figure 31).

Figure 31: Number of Processor Employees

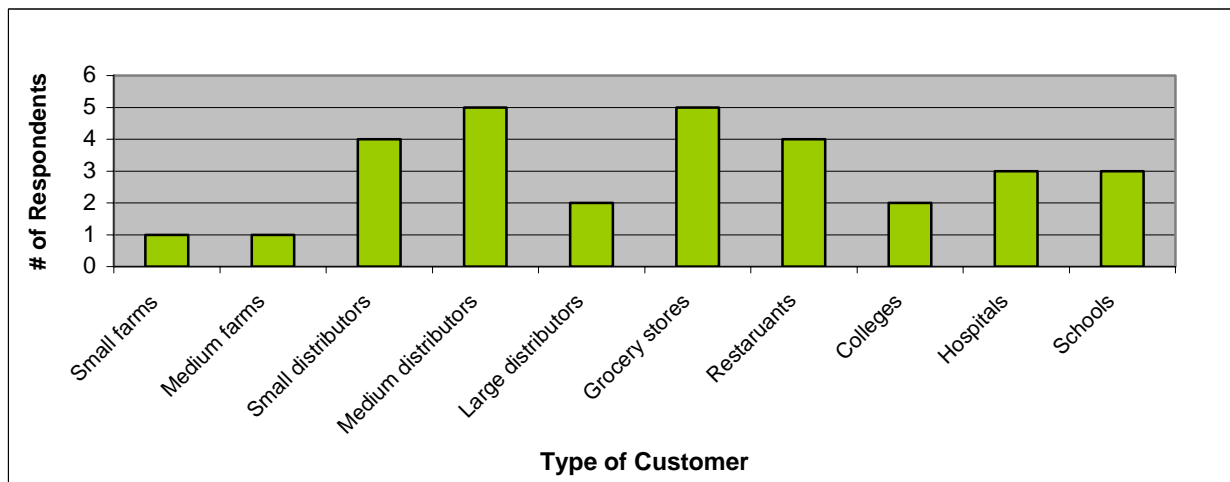


Most of the processors surveyed are smaller businesses, with over 60% having fewer than 20 employees.

Customer Base

Processors that work with local retailers as well as institutional buyers represent two of the greatest needs in the development of the regional southeastern Michigan food system. The graph below shows the distribution of customers processors served (Figure 32).

Figure 32: Processor Customer Base



Most processors currently work with small or medium distributors, grocery stores, and restaurants.

From the graph we see that, most processors surveyed currently work with small (4) or medium (5) distributors, grocery stores (5), and restaurants (4). A few work with institutions such as colleges (3)

and hospitals (3). Institutional buyers may represent an important future opportunity for regional food system growth. Institutional buyers create a ‘critical mass’ or significant demand for local goods, which help to develop infrastructure and business strategies around a local market. Few processors currently work with farms, with only one respondent indicating work with both small and medium farms.

Interest in local foods

In response to “What percentage of the food that you process is local?”

- 4 said 0%
- 1 said 1-25% (a bakery)
- 1 said 26-50% (a soybean processor)
- 1 said 51-75%(a snack foods company)
- 1 said 76-100%

The majority (5 of the 8) of the processors do not process or process little local food. The one business that indicated 76-100% of its food comes from local sources appears to be a poultry processing facility. A snack foods company indicated 51-75% of its ingredients as coming from local producers. However, **50% process at least some local foods currently.**

Change in the percentage of local foods

We asked whether the percentage of local foods the company processes has increased, decreased, or remained constant over the last five years. **The majority (6 of 8) of respondents had either experienced an increase or consistent demand for local products.** A bakery and a snack foods processor reported the increase in demand for local products. Only two indicated a decrease in demand for products sourced locally, including the poultry facility and the soy products company. The four that reported a constant percentage of demand were also those that reported no demand for local products in the first place.

Requests for local foods

When we asked if processors had received requests for local foods, four reported that they had and four reported that they had not. Those who have never received requests also indicated that they do not process any local ingredients and reported that this lack of requests has remained constant over

the last five years. If the processor had received a request for local food, they were asked three follow up questions:

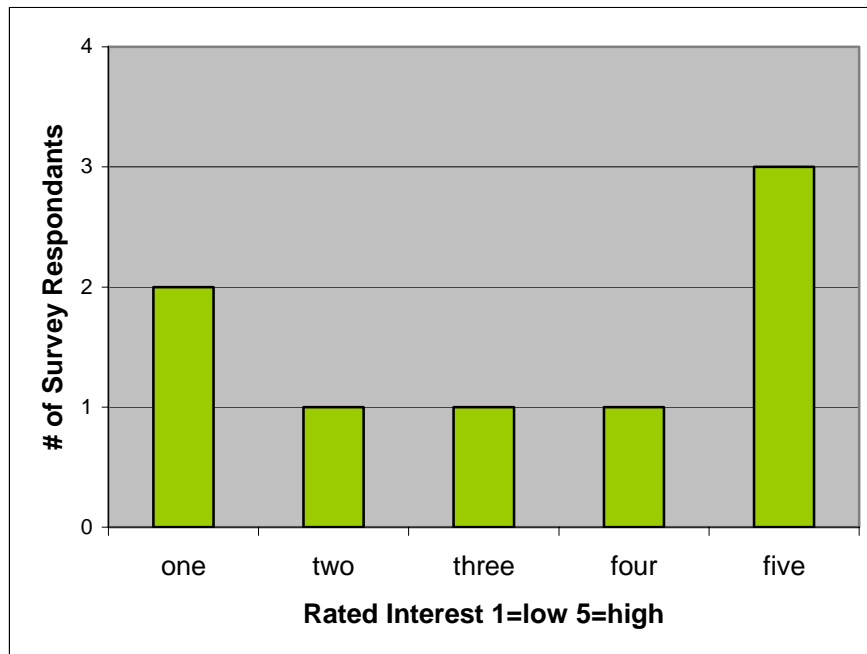
- 1) How often do you receive requests for local foods?
 - 2-reported less than once per month
 - 2-reported 1-5 times per month
- 2) What kinds of local products are requested?
 - 1 said produce
 - 1 said dairy
 - 2 said other: poultry and snack foods
- 3) What percent of these requests are you able to satisfy?
 - 2 said 1-25%
 - 1 said 76-100% (poultry)
 - one did not answer

In general, we found processors receive modest requests for local products but work to satisfy the local requests that they received. However, they were generally not able to satisfy all of the requests received.

Level of interest in working with local producers: (n=8)

All respondents were asked to rate their level of interest in working with local producers to distribute their food on a 1-5 Likert scale from low to high (n=8). The interest, on average is a little above moderate interest (mean of **3.25**). However, many of those that answered had significant interest, with three individuals indicating a high interest of 5 and one an interest of four. Two indicated a low interest of one and a single respondent indicated an interest of two (Figure 33).

Figure 33: Processor Interest in Local Foods



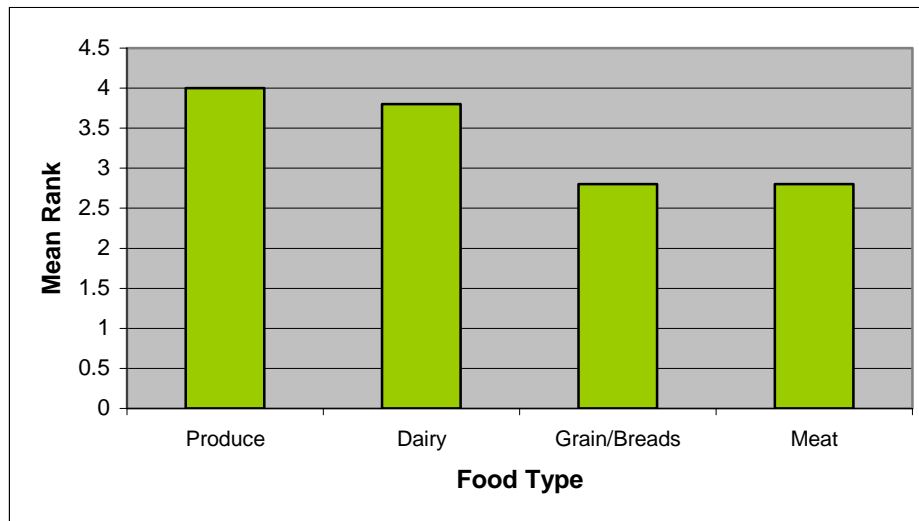
Though the mean interest in processing local foods was moderate, 3 of 8 processors indicated a very high, 5, interest in processing local food and one indicated an interest of 4.

Interest in specific types of local foods

To get a more clear idea of the types of local foods local processors would be most interested in working with, we asked respondents to rate their level of interest in various categories on a 1-5 Likert scale from low to high interest. We received a variable of high and low interest for the different food categories. Generally, the type of food the company currently processes corresponds to a high interest in working with that type of local food.

From the survey we found that **most processors are interested in working with produce (mean=4) and dairy (mean=3.8)**. Both grain/bread products and meats registered a mean of **2.8**. Looking at the individual responses, three respondents rated produce with a five; three rated dairy a five; two rated meat with a four; and one rated grain a five and another with a four. Other products of interest listed in response to an open-ended question included poultry, and organic honey, organic wheat berries, organic sesame seed, and organic sunflower seed.

Figure 34: Processor Interest in Types of Local Food Type



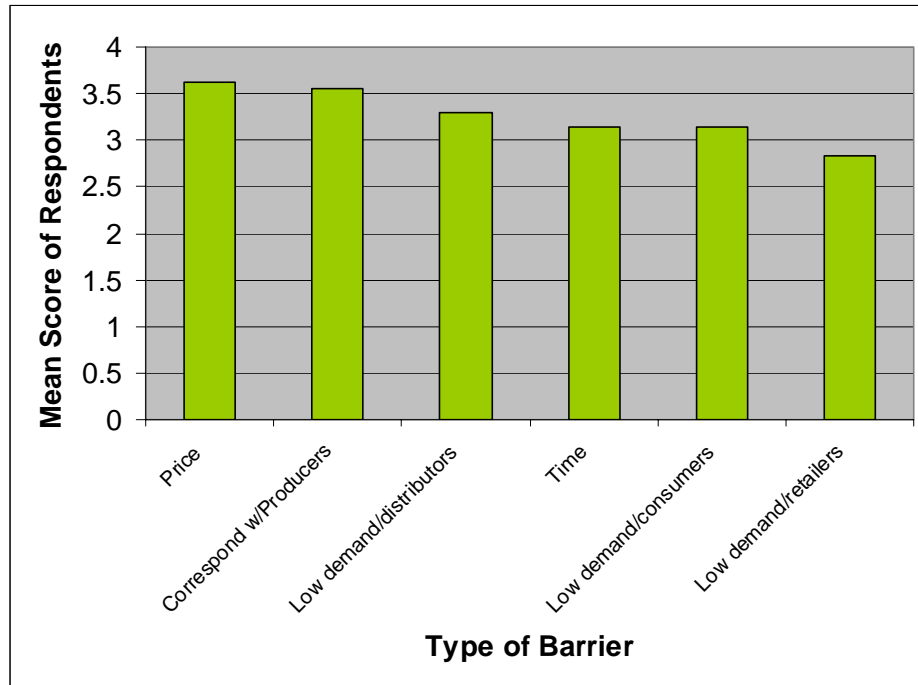
Processors indicate the highest interest in working with local produce and dairy products, followed by grain and meat products.

Barriers to local processing

Determining barriers and perceived barriers to local food processing allows us to speculate as to areas of our food system that need the most attention when determining where to allocate resources toward the infrastructure of a regional food system. We identified several potential reasons and asked respondents to indicate the level of importance of each: “Using the scales below, indicate the degree to which you perceive the following factors as limitations to you increasing the amount of local food you distribute.”

The factors perceived as the greatest limitations to increasing the amount of local foods the company processes are: 1) Price (mean=**3.63**); 2) Difficult to find, interact, or correspond with local producers (mean=**3.56**); 3) Insufficient demand from distributors to transport local goods (mean=**3.29**); 4) Requires too much time (mean=**3.14**); 5) Insufficient demand from consumers (**3.14**); 6) Insufficient demand from retailers (**2.83**). One additional barrier noted was “bird flu” from the poultry facility. In sum, price and the ability to find and interact with producers pose the largest barriers to processors involvement in local food ingredients (Figure 35).

Figure 35: Barriers to Processors



The largest barriers to processors working with local foods were price, corresponding with producers, and insufficient demand from distributors.

Processor Survey: Summary of findings

- **Fifty percent** of respondents **indicated carrying at least some** local foods currently.
- Seventy-five percent said the proportion of local foods carried has remained constant or increased in the past five years.
- **Fifty percent** of respondents reported that they **receive requests** for local foods. Those who have never received requests for local foods also indicated that they do not process any local ingredients and reported that this lack of requests has remained constant over the last five years.
- Processors receive modest requests for local products but work to satisfy the local requests that they received. However, they were generally not able to satisfy all of the requests received.
- Most of the demand processors receive is for local food is for **produce** and **dairy**.
- Barriers to processing local food include: **price**, difficulty **communicating** with local producers, and insufficient **demand** from distributors.

Distributor Survey Results

Introduction

In a word, distributors could be called the lynchpin of the food system. They connect two other critical forces of the food system, producers and retailers, in order to link supply with demand, often on a grand scale. Since only about a half of one percent of all food sales in the United States is a direct sale, distributors are involved in almost all food sales throughout the country and in southeastern Michigan. Distribution is consistently noted as one of the key challenges to developing a more localized food system (Halweil 2005). In most cases, distributors are able to remain profitable and viable when they help move food products from widespread locations to widespread locations (McClelland 2006). On the other hand, there are a handful of models of innovative local distribution infrastructure used throughout the country including websites⁹ and pilot projects of large distributors¹⁰. Where there is interest among distributors, there may be potential for developing an alternative distribution system in the region.

Survey goals

The goals of the distributors' survey were to gather information about the current trends and characteristics of locally-based distributors, to gauge interest in distributing local foods, and to assess the barriers to local food distribution from the perspective of the distributors. The survey had 11 multiple choice and Likert scale questions plus the option to “opt in” to be contacted in the future and to provide contact information (Appendix 10). We developed the questions based on our preliminary knowledge of the sector, basic research about local food distribution challenges and conversations with FSEP leaders.

Response Rate and Demographics

Twenty-one individuals completed and returned the survey, a response rate of 22 percent. After reviewing the returned surveys, it was clear that one respondent was not a distributor, but a pick-your-own fruit location. This individual did not answer any of the distributor-specific questions. The effective sample size for the distributor survey was 20. The respondents represented a fairly broad range of distribution businesses spanning three counties, serving a broad range of businesses throughout Michigan and beyond.

⁹ Such as the Supermarket Coop: www.supermarketcoop.com/superhome.htm

¹⁰ SYSCO Minnesota Farmers' Market: www.syscomn.com/fmarket.htm

Business Location

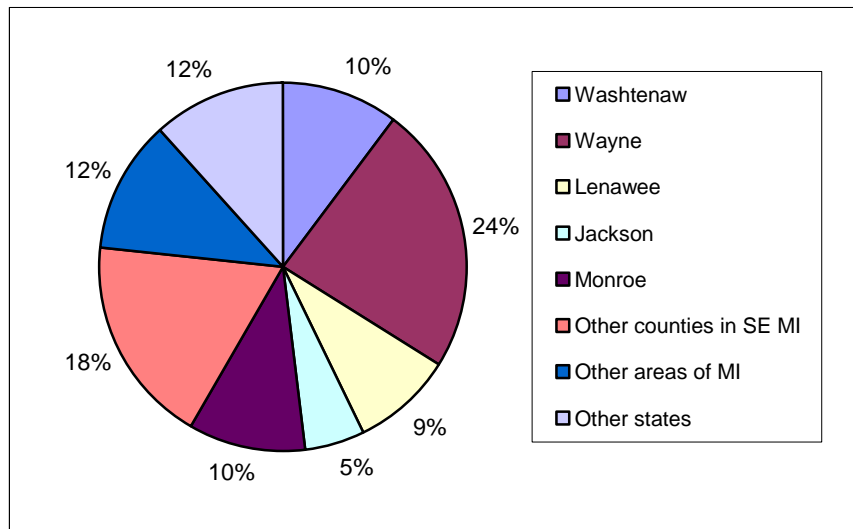
Nineteen reported the location of their business by zip code. Most of the 11 different zip codes had a frequency of one, representing a wide geographic distribution. There were a few clusters of distributors located in two zip codes, 48207 ($n=5$), and 48209 ($n=4$). The area of zip code 48207 includes the Eastern Market area of Detroit where dozens of distributors are based. Zip code 48209 is in a section of southwest Detroit and includes the Mexicantown neighborhood, also home to many food-related businesses. Nearly, half of the respondents who indicated a zip code were based in Detroit and 15 of 18 were based in Wayne County. Of the other three, two were from Lenawee and one from Monroe. Two respondents did not indicate a zip code or business location.

Service Area

We asked distributors to indicate which counties and regions their business serves. The question allowed them to indicate all that applied, and most (18 of 21) serve multiple areas. The three distributors who only reported working in one county all serve Wayne County, the most populous in the region. Three distributors checked all of the eight options, stating that they work with each of the counties in the region, throughout Michigan and in other states. The service within the five-county study area was fairly even, but relatively fewer of our respondents serve Jackson County (Figure 36):

- Eight distributors serve Washtenaw County
- Seven serve Lenawee County
- Eight serve Monroe County
- Four serve Jackson County
- Eighteen serve Wayne County
- Fourteen work with other counties in southeastern Michigan
- Nine serve other areas of Michigan
- Nine distributors work in other states

Figure 36: Distributors' Geographic Service Area

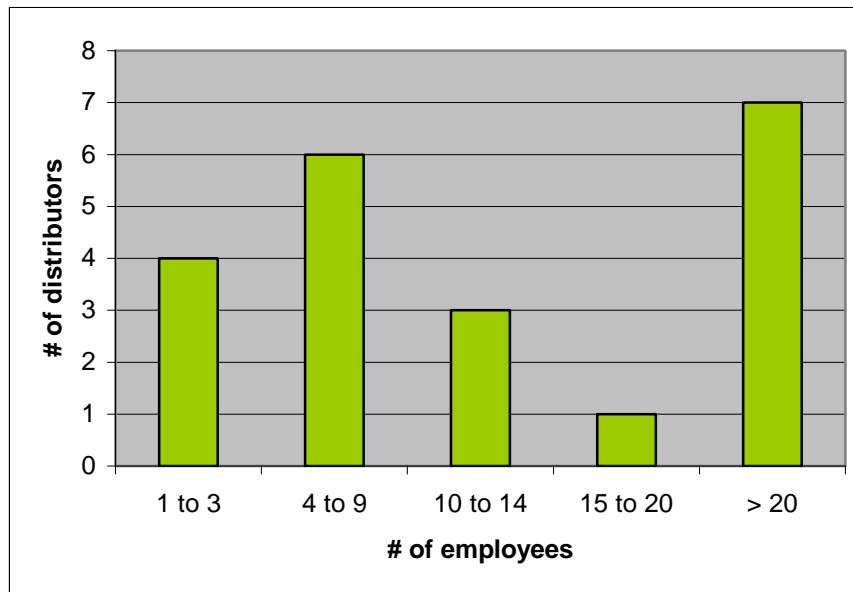


Local distributors serve all counties in the study area. Jackson Co. was the least served and Wayne Co., the most populous and industrial area in the region, was served by the most distributors.

Number of Employees

The size of the distribution businesses that participated in the survey varied. There were four small businesses (1-3 employees), 10 mid-sized (4-20 employees) and seven large businesses (more than 20 employees). More precisely, four companies had 1-3 employees; six had between 4 and 9; three had between 10-14; one had between 15 and 20; and seven had more than 20 employees.

Figure 37: Number of Employees: Distributors



The size of the distribution businesses varied with 4 small, 10 mid-sized, and 7 large businesses.

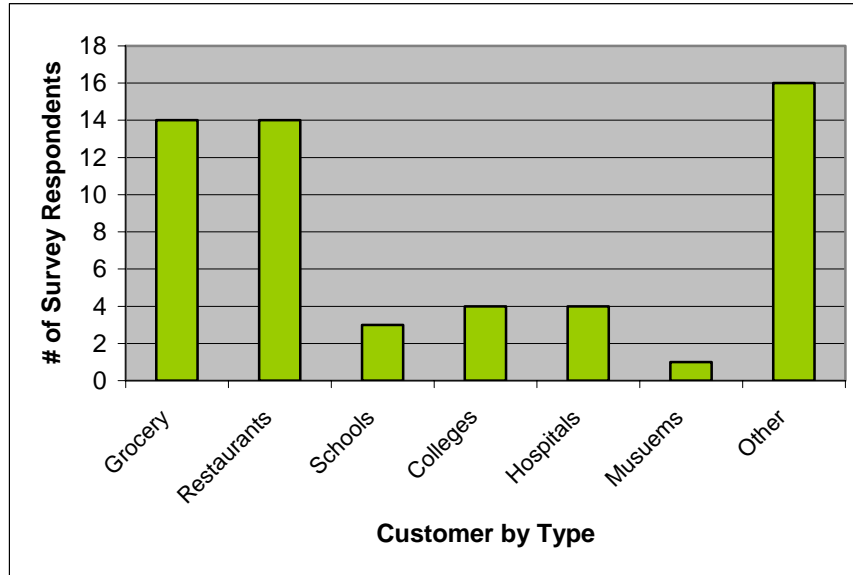
Customer base

Distributors make business decisions based on client demands. To better understand the role distributors play in the local food system, it is necessary to have an idea of the types of businesses and institutions the local distributors serve. We listed several types of customers and asked respondents to check all that applied. The survey data, shown in Figure 38 reveals that **grocery stores and restaurants are the primary clients** of area distributors and most respondents worked with either grocery stores, restaurants or both. Fourteen distributors service each grocery stores and restaurants. Of the two who did not report working with either grocery stores or restaurants, one was a pick your own farm and the other a large scale distributor who distributes only beyond the immediate region.

Educational institutions are other major customers. Three distributors work with schools (implied elementary and high school districts) and four serve colleges. Four distributors provide food for hospitals and one works with museums. Many of respondents also checked “other” and wrote in additional types of businesses they serve. “Other” clients included other distributors (2), price clubs like Costco and Walmart (2), produce markets (2), produce wholesalers (who service all of the listed businesses) (2) and “jobbers” defined by one respondent as “those wholesalers that service restaurants,” country clubs, catering company, and processors. (National studies and state reports

emphasize the important role that large, institutional buyers can play in sustaining local farms and food-businesses (Halweil 2005; Connors 2006; Michigan Food Policy Council 2006).

Figure 38: Distributors' Customer Base



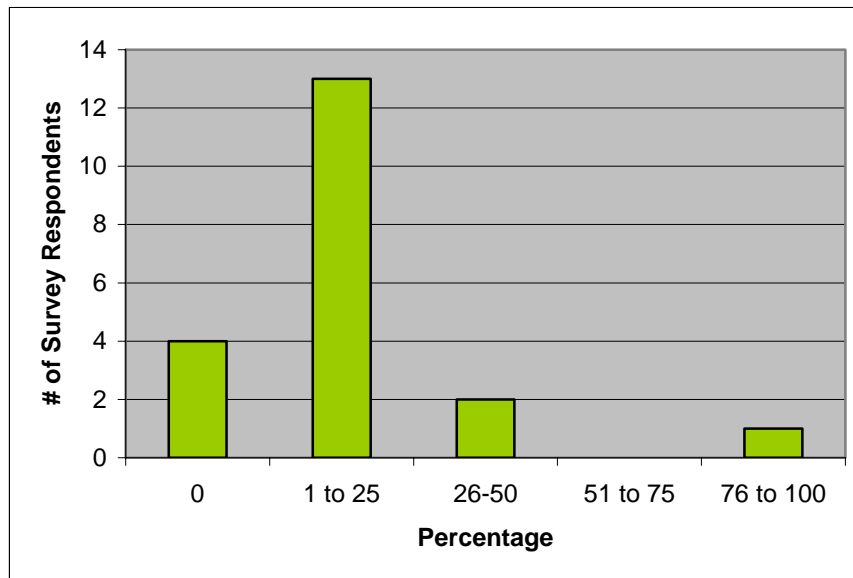
Grocery stores and restaurants are the primary clients of area distributors.

Distributing Local Foods in Southeastern Michigan

Percentage of Local Foods Currently Distributed

When asked what percentage of the food or food products distributed is grown or produced locally, most distributors reported distributing at least some local foods but few reported more than 25 percent (Figure 39). Four indicated that zero percent of their products are locally grown or produced. Thirteen (65%) reported that 1-25% of their products are local and two indicated 26-50 percent. One distributor reported that most (76-100%) of the products distributed were grown or produced locally. This distributor was a large business that serves grocery stores, restaurants and processors in Washtenaw, Lenawee, Monroe and Wayne counties as well as other areas of Michigan and other states.

Figure 39: Current Distribution of Local Foods



Eighty percent of respondents indicated carrying at least some local foods currently, though few carried a large amount of local goods.

We also asked whether this proportion of local foods in the distributors' inventory has increased, decreased or remained constant over the last five years. Out of 19 who responded to the question, four (21%) reported that the percentage had increased and two (10.5%) reported a decrease, however most (68%) said the percentage had remained constant over the last five years suggesting a consistent and slowly growing demand for local products.

Requests for Local Food

When asked if they had ever received requests for local food from their customers, over half of the 20 respondents (60%) said yes. Eight respondents (40%) reported that they had never received requests for local foods. Those who had received requests were asked a few follow-up questions. Eight of the respondents answered these questions:

- *How often do you get requests?*
- *What kinds of local food requests have you received?*
- *What percentage of these requests are you able to satisfy?*

Six (of eight or 75%) reported requests less than once per month, one said one to five times per month and one reported more than ten times per month. Every distributor who responded to these

questions had received requests for **produce** and one for **dairy** products (choices included also meats, grain/bread or other). Two of the eight (25%) were not able to satisfy any of the requests. One was able to satisfy between 1 and 25% and five (62.5%) were able to satisfy 76-100% of the local food requests.

Level of Interest in Working with Local Producers

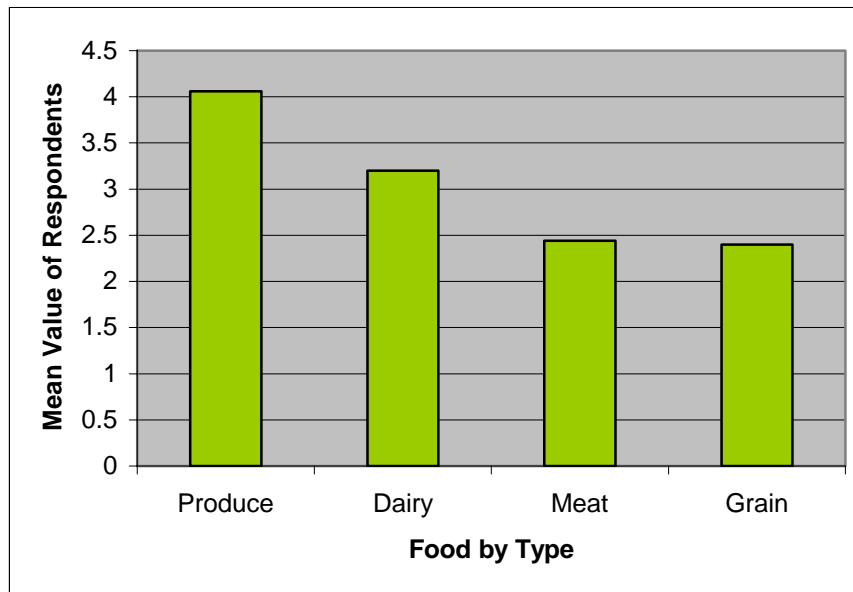
All respondents were asked to rate, on a five-point Likert scale from low to high, their level of interest in working with local producers to distribute their food (n=19). The mean level of interest was 2.63 with a standard deviation of 1.54 indicating **broad range of interest**. About half (10, 52%) of those who answered the question gave a rating of three or greater including three who indicated the highest level of interest. On the other end, six indicated lowest interest.

Level of Interest in Specific Types of Products

To get a more clear idea of the types of local foods local distributors would be most interested in distributing, we asked respondents to rate their level of interest in various categories on a 1-5 Likert scale from low to high interest. For most areas of interest, there was a high standard deviation, as a result of a mix of relatively high and relatively low interest (Figure 40).

- The highest level of interest was in distributing local **produce**: 17 of 21 indicated an interest and the mean level of interest was 4.06 on a five-point scale (std dev =1.25). Eight distributors indicated the highest level of interest in distributing local produce and 14 of 17 rated it a three or higher.
- **Dairy and Cheese** were the next most popular: 10 of 21 indicated an interest and the mean level was 3.20 (std dev=1.93) Six indicated an interest level of four (2) or five (4). (The remaining four rated it a “1”)
- Ten distributors were somewhat interested in Grain and Bread products, the average level was lower (mean= 2.40, std dev=1.71)
- Nine respondents would be interested in distributing local meat products. The mean level of interest was also relatively low (mean=2.44, std dev=1.81).

Figure 40: Interest in Distributing Local Food by Type



Distributors indicated the highest interest in distributing more local produce followed by dairy products.

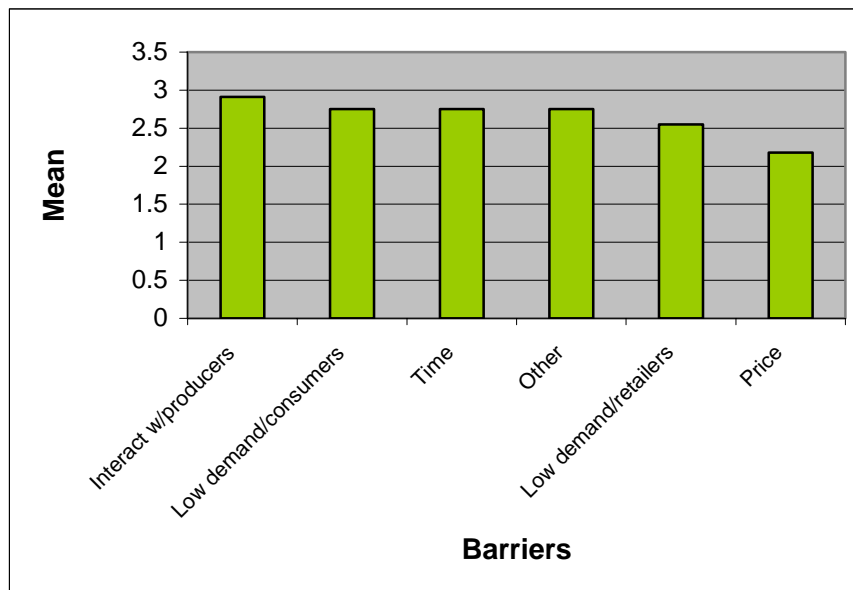
Barriers to local food distribution

One of the key goals of our survey was to learn more about the barriers and perceived barriers to local food distribution in order to better inform efforts to improve the connections among producers, distributors and consumers in the local food system. We identified several potential reasons and asked respondents to indicate the level of importance of each: “Using the scales below, indicate the degree to which you perceive the following factors as limitations to you increasing the amount of local food you distribute.”

All of the means were clustered just below the “medium” rating of 3 and variance was somewhat high, again indicating a range in perceived degree of limitations imposed by the various barriers (Figure 41). Twelve distributors noted **insufficient demand** from consumers as a barrier (mean = 2.75 std dev = 1.29). Insufficient demand from retailers (i.e. grocery stores) was found by 11 respondents to be a barrier (mean 2.55, standard dev. 1.29). Twelve distributors indicated that working with local food **requires too much time** (mean = 2.75 std dev = 1.66). Eleven cited the difficulty of locating and interacting with local producers as a barrier (mean = **2.91**, std dev = 1.64). Finally, 11 also noted **price** as a barrier (mean 2.18, std dev. = 0.98)

Four respondents indicated “other” barriers and provided explanations of additional barriers. Some commented about the mismatch between availability and demand: “product availability” and “raw milk has little demand.” Another distributor who indicated a very high interest in distributing local produce mentioned that “packaging and pre-cooling capabilities” were a barrier to working with local foods. A few of the distributors in the area focus on ethnic foods and wrote in this focus as an additional barrier, “customer interested more in Middle Eastern food” and “We distribute Indian groceries.” However, this did not mean they were not interested in distributing more local products. One Indian foods distributor indicated an interest in local grain and bread products and local dairy products as a four on the five-point scale.

Figure 41: Barriers to Local Food Distribution



Top barriers are communicating with producers, insufficient demand from consumers, and time required when working with local foods.

Distributor Survey: Summary of findings

- Eighty percent of respondents indicated carrying at least some local foods currently.
- Almost 90 percent said the proportion of local foods carried has remained constant or increased in the past five years.
- Sixty percent of respondents reported that they receive requests for local foods.

Over half reported being able to meet more than 75% of the demand for local products, but nearly 40% were **not** able to meet more than 25% of the demand.

- Most of the demand is for local food is for **produce**
- Barriers to distributing local food include: lack of consumer and retailer **demand** for local products, the amount of **time** it takes to work with local foods, and difficulty **communicating** with local producers.

Retailer Survey Results

Introduction

Retail outlets represent the contemporary interface between consumers and agricultural goods. With the decline of agriculture as a common American livelihood, nearly all people in the United States use supermarkets the primary means by which they get their food (Halweil 2005). In fact, even when people indicate a desire to buy local goods, they prefer to buy them at a supermarket (Betty, 2004). Despite the recent growth of farmers' markets and increased consumer demand for local goods, only 0.4% of all food sales in the US are direct. Food is primarily accessed via retailers in the food system.

Survey Goals

Our retailer survey was designed to elicit information about stores' current inventory of locally sourced foods, storeowners' and managers' desire to carry more local products, and their perception of challenges to carrying more local goods (Appendix 11). From the analysis of the survey, we extracted opportunities that may enable retailers to become greater stewards of local goods. We also worked to show how their perceptions and demands correspond with other sectors of the food system.

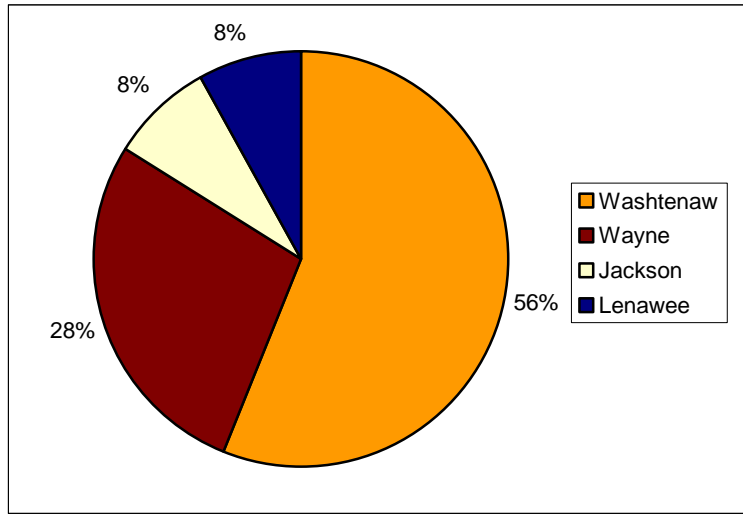
The retailer arm of our multi-sector survey included queries to a variety of store-related retailers, with restaurants purposefully left out. Another committee from the FSEP leadership team was working on a survey related to restaurants at the time this project began, and we did not want to duplicate work, given our limited resources. We mailed surveys to chain supermarkets, independently owned markets or supermarkets, mass merchandisers, food co-ops, and bakeries. In choosing the survey recipients, we paid special attention to target each sector of agriculture (produce, meat, grain, and dairy), and to represent each county relative to the number of retailers it houses. We focused on sending surveys out to independently owned markets, where decisions about purchasing local foods more readily take place. At the same time, we sought responses from chain retailers to compare and contrast their demand and perspective on local foods.

Response Rate and Demographics

In total, we collected 36 surveys. Twenty-five respondents specified their zip code. From those that indicated location, there were eighteen zip codes represented throughout the five county area. We received 14 responses from Washtenaw County, seven from Wayne County, and two each from

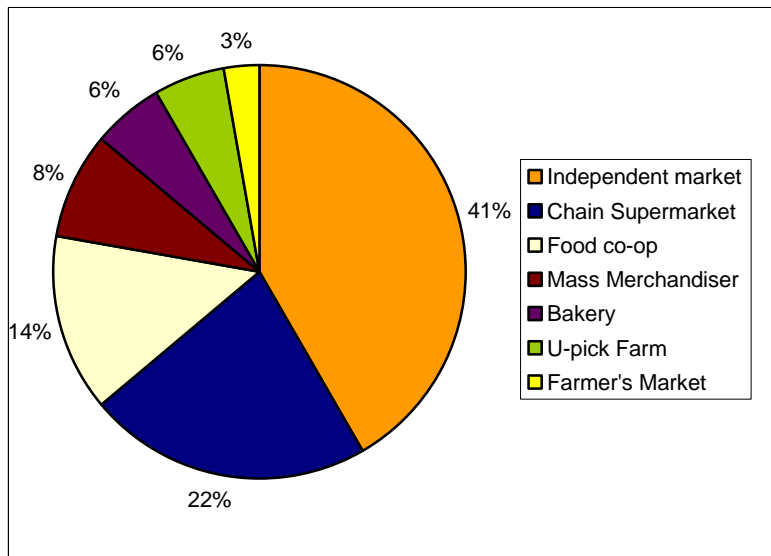
Jackson and Lenawee Counties (Figure 42). We did not receive and retailer responses from Monroe County, though we sent them to businesses in the County. Of the 36 retailers, the characterization of the businesses are as follows: independently owned market or supermarket-15; chain supermarket-8; food co-op 5; mass merchandiser-3; bakery-2; u-pick farm or other-2; farmers’ market-1 (Figure 43).

Figure 42: Retailers’ Response by County



Most survey respondents reside in Wayne or Washtenaw County, which also have a sizably larger population base than Jackson, Lenawee, or Monroe Counties.

Figure 43: Type of Food Retailers

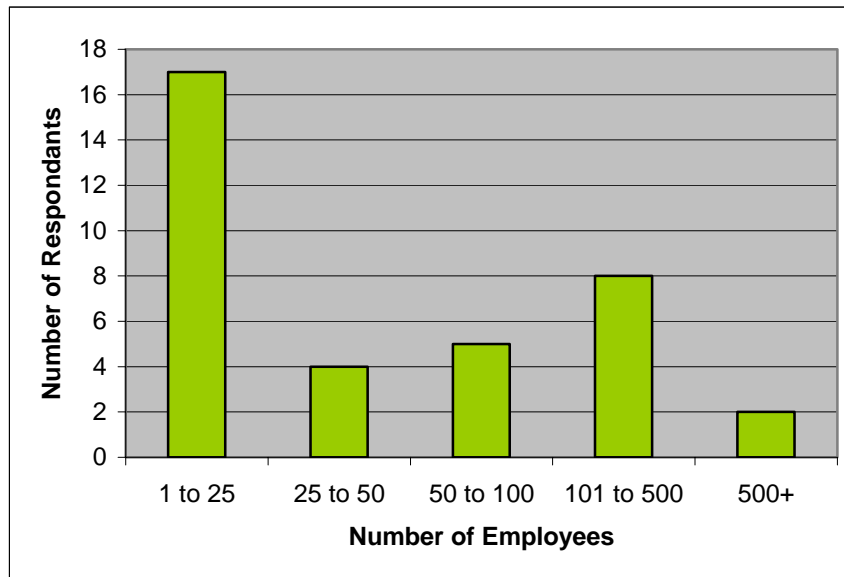


The majority of respondents were independent markets or chain supermarkets.

Business size

Generally, the businesses surveyed were smaller in size, with the chain grocery stores and mass merchandisers representing larger scale operations (Figure 44). The following is an aggregate response to reported employment for each business (N=36): seventeen business employ 1-25 persons; four employ 26-50 persons; five employ 51-100; eight employ 101-500; and 2 employ more than 500 persons.

Figure 44: Retailer Employment



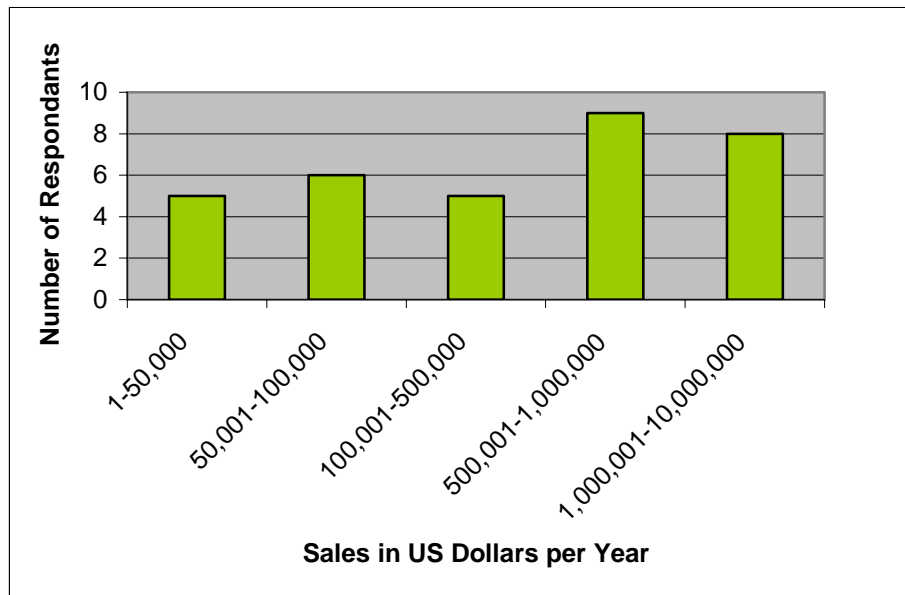
The majority of survey respondents employed fewer persons with 17 of 36 businesses employing between 1-25 people.

Volume and types of sales

The volume of food sales reported were as follow in US dollars per year (N=33): five reported \$1-50,000; six reported \$50,000-100,000; five reported \$100,000-500,000; nine reported \$500,000-1,000,000; eight reported \$1-10 million. The estimated number of customers per week was (N=36): three reported 1-200; five reported 201-500; six reported 501-1000; five reported 1,001-2,500; seventeen reported more than 2,500 (Figure 45).

The types of food products sold at each establishment are as follows (n=36, respondents could choose more than one answer): 31 sold fruits and vegetables; 28 sold meat and fish; 31 sold dairy products; 33 sold bread, flour and baked goods; 32 sold jam, honey, and sauces; 30 sold tinned, packaged, and prepared goods; 29 sold beverages.

Figure 45: Retailer Food Sales by Volume

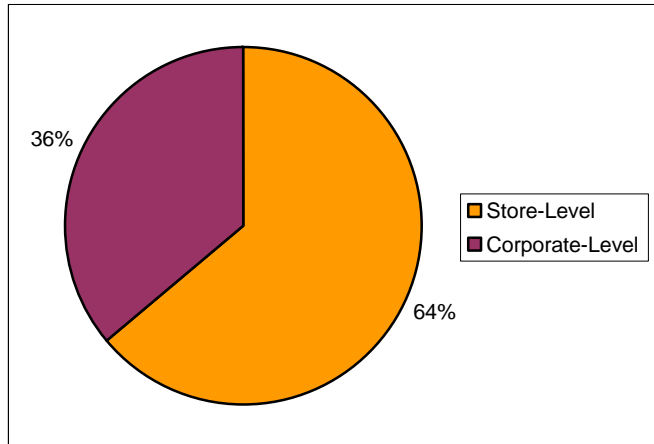


There was a fairly even response between smaller and larger operations.

Decision-making level

Twenty-three retailers claimed to make decisions regarding food purchasing and pricing at the establishment/store level. Thirteen claimed these decisions had to be transferred to the corporate level to receive approval (Figure 46). Using Fisher's Exact test, we found a significant difference between larger retail operations such as chain supermarkets, independent retailers, and others regarding where decisions were made ($p=.000$). We found that the larger chain retailers made decisions at the corporate level.

Figure 46: Retailer Decision Making

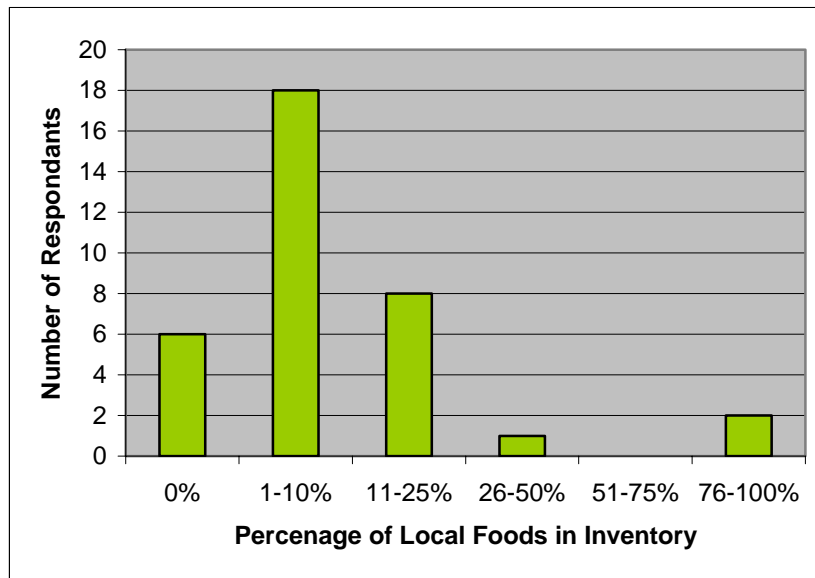


Chain stores required decision making regarding food purchasing and pricing at the corporate level, while independent market made decisions at the store-level.

Retailing Local Foods in Southeastern Michigan

We asked retailers to indicate the percentage of their food inventory that is locally grown or produced foods (N=35) (Figure 47). Nearly **eighty-five percent of the respondents carry some local products**. The actual volume stores carry is not yet large. Seventy-five percent of retailers claimed that less than 25 percent of their inventory was local goods. Seventeen percent claimed to have no local inventory. There was no relationship found between type of retailer and percentage of current local food inventory. Kruskal-Wallis ($\chi^2=.163$, $df=3$, $p=.922$, $N=35$). Furthermore, there was no significant relationship between type of retailer and type of local goods in the current inventory. Kruskal-Wallis ($\chi^2=2.538$, $df=2$, $p=.281$, $N=36$).

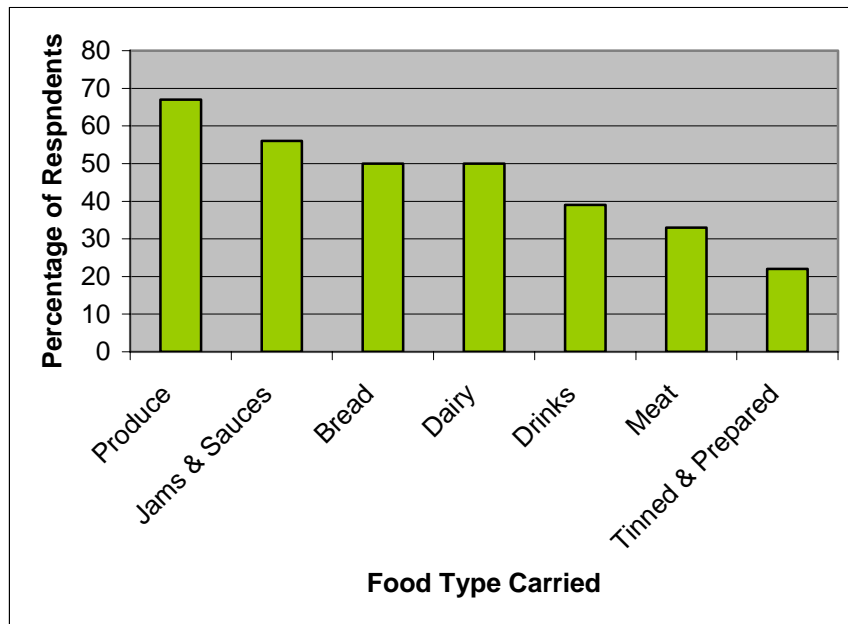
Figure 47: Current Retailer Inventory of Local Food



Nearly 85% of all retailers carry some local food. Few carry large percentages of local food.

Produce, honey and sauces, dairy and breads from the region are more commonly carried than drinks, meats or tinned goods. In total, 67% sell local produce; 56% sell local jams, honey, or sauces; 50% sell local bread, flour, or baked goods; 50% sell local dairy; 39% sell local drinks (alcoholic & soft); 33% sell local meat, fish, or game; and 22% sell local tinned, packaged, and pre-prepared goods (Figure 48).

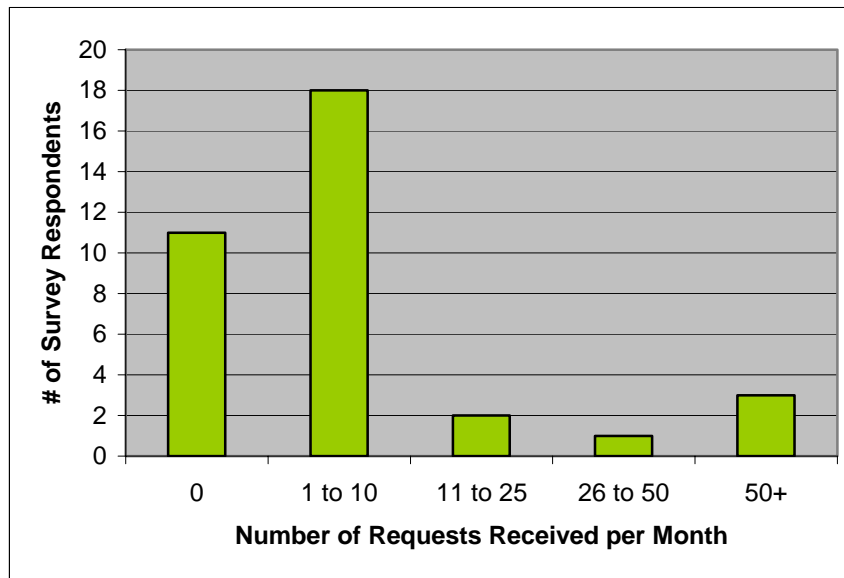
Figure 48: Current Local Inventory



Retailers tend to sell produce and jams & sauces over other food or food products

The number of requests for locally grown food is notable. **Nearly seventy percent of retailers (n=35) have received some requests each month for local foods** (Figure 49). The following are the specific percentages of local food request received: 31.4% claimed they received no requests; 51.4% claimed they received between 1-10 requests per month; 5.7% claimed between 11-25 requests per month; 2.9% claimed between 26-50 requests per month; 8.6% claimed more than 50 requests per month.

Figure 49: Requests Received for Local Food



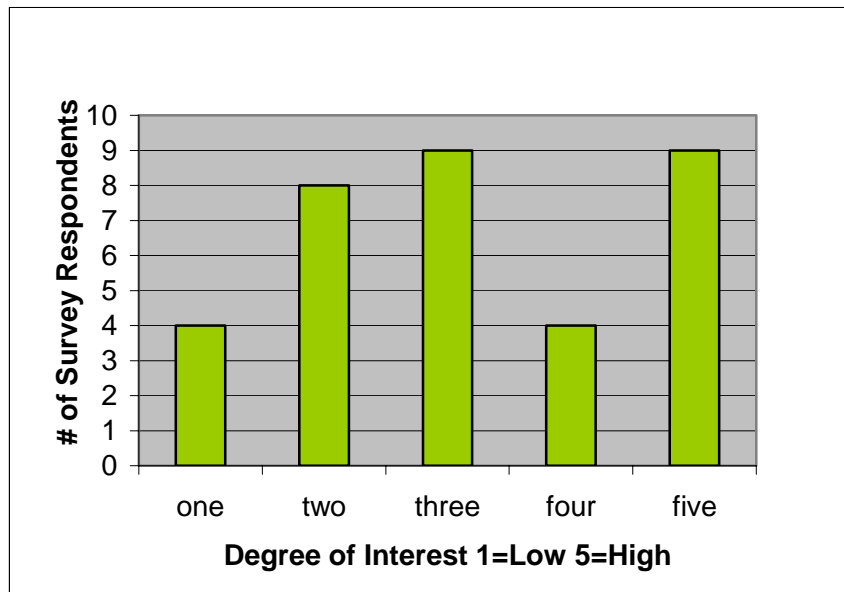
Nearly 70% of all retailers have received requests for local foods.

Interest in selling more local foods

A crucial aspect of this survey was to gain an understanding of retailers' future interest in carrying local foods. We next illustrate the general interest of retailers and then analyze connections between their interest and their demographic information. From these connections, we can begin to see opportunities and leverage points to bolster the local food system.

We first asked retailers to relate their interest in increasing the percentage of locally grown/produced food in their store using a five point Likert scale with 1=low interest and 5=high interest. Of the 35 retailers that responded to this question, 11.8% claimed low interest or '1'; 23.5% indicated '2' or fair interest; 26.5% indicated '3' or medium interest; 11.8% indicated '4' or significant interest; 26.5% indicated '5' or high interest. Though the mean was just above center at 3.18, **25% of the respondents indicated a high interest in carrying more local goods** and nearly 40% indicated significant (4) or high (5) interest (Figure 50).

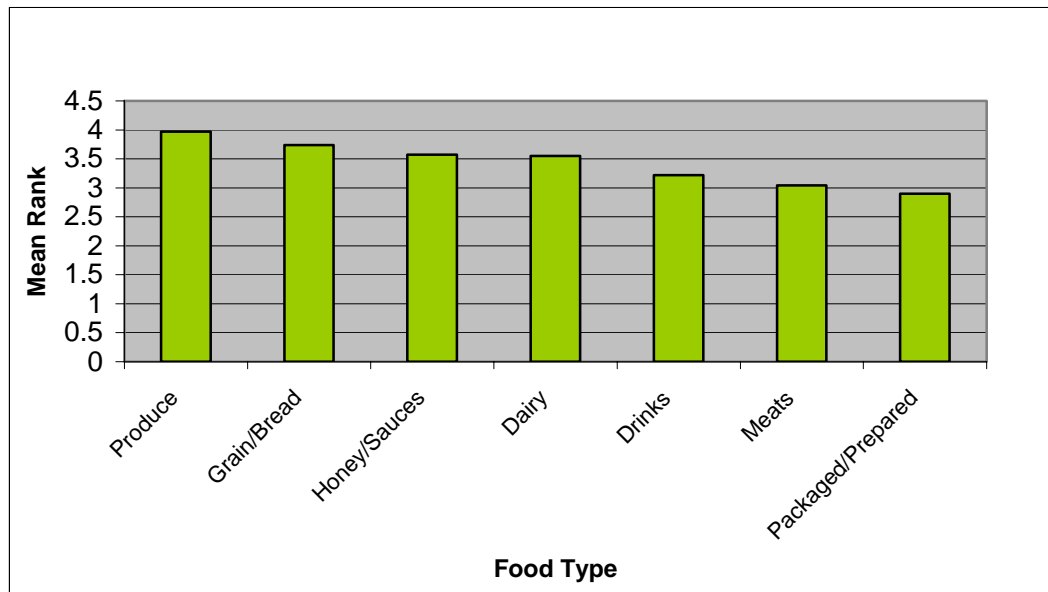
Figure 50: Retailer Interest in Increasing Percentage of Local Foods



While the mean was just above average, $\frac{1}{4}$ of retailers had high (5) interest in carrying more local goods. Nearly 40% indicated an interest of 4 or 5.

Regarding the specific local products the retailers would like to feature, **produce** was the overwhelming favorite. However, there was significant interest in just about every product type. When asked to rate their interest on the same 1-5 Likert scale, produce received a mean score of 3.97, N=30; Bread, flour and baked goods received a mean score of 3.74, N=31; Jams, honey, and sauces received a mean score of 3.57, N=30; Dairy received a mean score of 3.55, N=31; Drinks, including wines and alcohol, received a mean score of 3.32, N=28; Meat, fish and game received a mean score of 3.04, N=27; packaged and tinned goods received a mean score of 2.90, N=30 (Figure 51).

Figure 51: Retailer Interest in Local Food by Type



Retailers are most interested in carrying produce, followed by grain products and sauces, jams, and honey.

Looking at the relationship between type of retailer versus interest in selling local foods, we found no significant correlation: Kruskal-Wallis test ($\chi^2=.160$, $df=2$, $p=.923$, $N=34$). The mean interest for supermarkets was 3.13 ($N=8$); the mean interest for independent retailers was 3.27 ($N=15$); the mean interest for all others including specialty shops was 3.09 ($N=11$). Likewise, there was no relationship found between where decisions were made (in-house vs. corporate) and interest in increasing the percentage of local goods sold at the store. Mann-Whitney- $(Z= -.819$, $p=.413$, $N=34)$

We did determine a difference between the amount of requests for local foods per month and the retailers' interest in selling local goods. Kruskal-Wallis- $(\chi^2=12.722$, $df=4$, $p=.013$, $N=34)$.

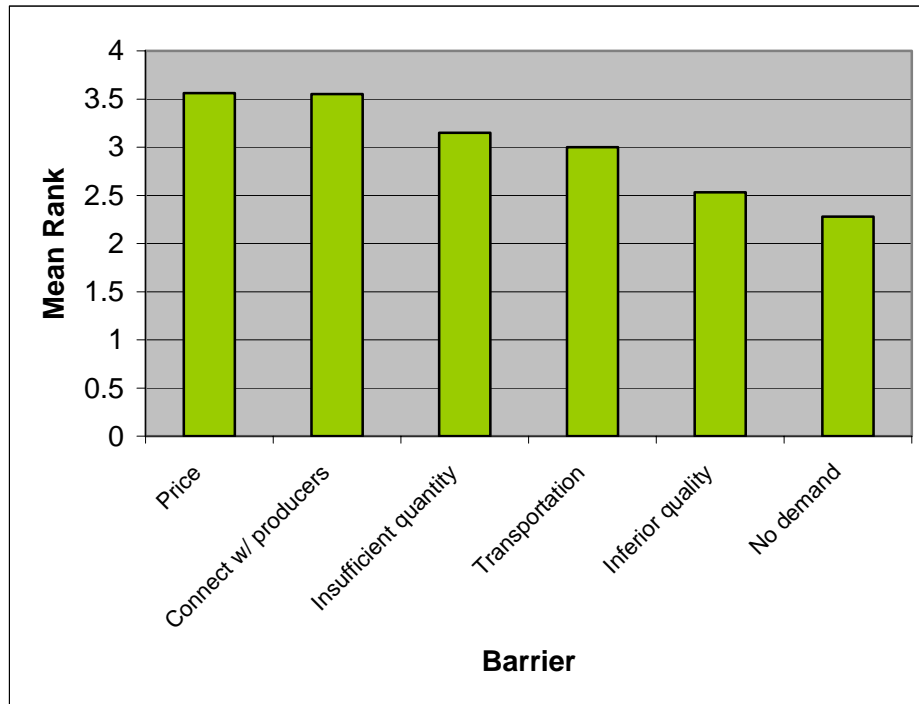
Additionally, we did find a difference between current inventory of local foods and interest in carrying more local foods. Kruskal-Wallis- $(\chi^2=11.418$, $df=4$, $p=.022$, $N=34)$.

Barriers to Retailing More Local Foods

Retailers' intention and desire to carry more local goods is a starting point to reifying change in retailers' purchasing behavior. Determining the real and perceived barriers to selling local goods is the next step in the process. We asked retailers to rate the degree to which they perceive a given list of factors as limitations to their retail outlet carrying locally grown or produced foods (Figure 52). The following is the mean score for each barrier highest to lowest: Insufficient supply/seasonality

($m=3.82$, $N=34$); Price ($m=3.56$, $N=32$); Connecting with producers ($m=3.55$, $N=33$); Insufficient quantity to meet demand ($m=3.15$, $N=33$); Transportation and receiving products ($m=3.00$, $N=33$); Inferior quality ($m=2.53$, $N=32$); No demand for local products ($m=2.28$, $N=32$); Other-‘Corporate Supply Chain’ ($m=5$, $N=1$).

Figure 52: Barriers to Retailers



Retailers cited price, connecting with producers and insufficient quantity to meet demand as the top barriers to their business selling local goods.

There were many retail barriers that were correlated together as perceived limitations. The following is a list of correlated barriers as determined by Spearman’s rho test for correlation:

- Insufficient quantity & Connecting with producers ($\rho=.439$, $p=.012$)
- Insufficient quantity & Inferior quality ($\rho=.401$, $p=.025$)
- Inconsistent supply and seasonality & Connecting with producers ($\rho=.468$, $p=.006$)
- Inconsistent supply and seasonality & Insufficient quantity ($\rho=.636$, $p=.000$)
- Inconsistent supply and seasonality & Inferior quality ($\rho=.478$, $p=.006$)
- Transportation and receiving products & Connecting with producers ($\rho=.483$, $p=.004$)

- Transportation and receiving products & Insufficient quantity ($\rho=.386$, $p=.029$)
- Transportation and receiving products & Inferior quality ($\rho=.458$, $p=.008$)
- Transportation and receiving products & Inconsistent supply and seasonality ($\rho=.528$, $p=.002$)

Interest in Local vs. Barriers to Involvement

We were interested in the relationship between interest in increasing local food sales and the perceived barriers to increasing local food sales. We found a significant negative correlation between interest and the barrier ‘no sufficient demand for local food.’ ($\rho=.376$, $p=.037$) Therefore, **those retailers who were in support of local food did not find consumer demand to be a limitation** to their interest in local goods. Other noteworthy findings (though not statistically significant) were the relationship between interest and inferior quality ($\rho=.335$, $p=.065$), and the relationship between interest and inconsistent supply/seasonality ($\rho=.225$, $p=.158$)

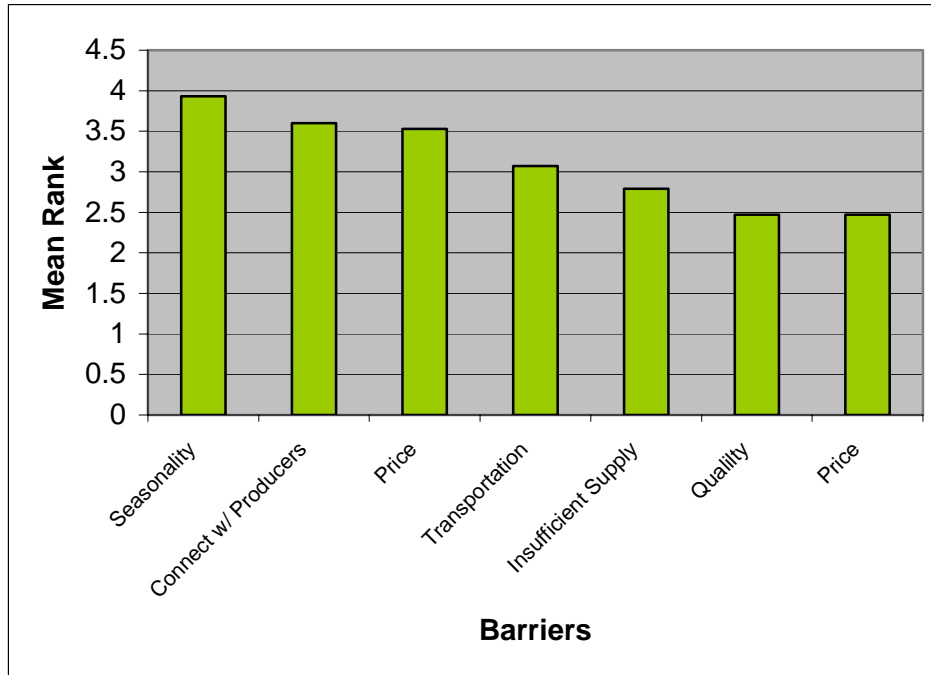
Perceived Barriers vs. Type of Store

Again, we grouped store type by supermarket/mass merchandisers, independently owned grocery stores, and others including specialty stores. The top three barriers for each of the store types are reflected in the following table:

Figure 53: Barriers According to Type of Retail Outlet

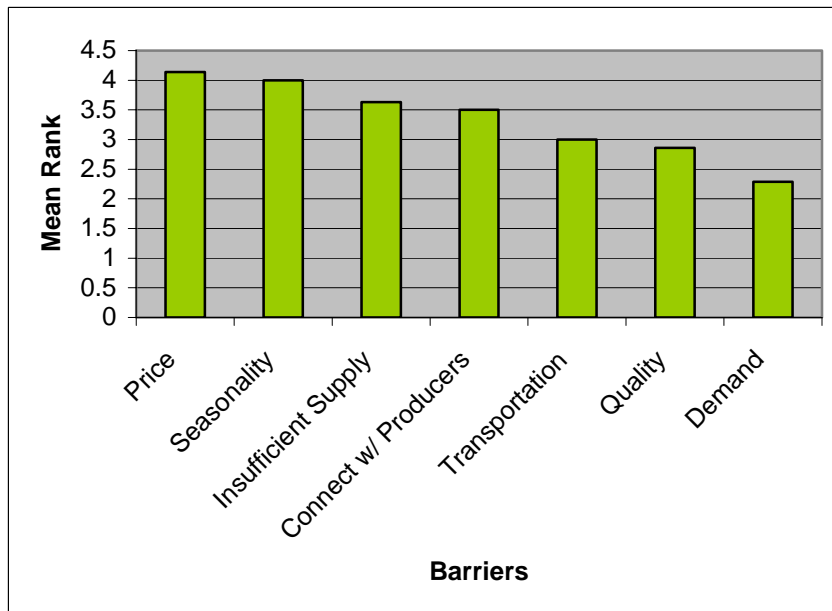
Store Type	Top Barrier	Second Barrier	Third Barrier	Fourth Barrier
Supermarket/ Mass Merchandiser	Price ($m=4.14$, $N=7$)	Inconsistent supply/seasonality ($m=4.00$, $N=8$)	Insufficient Supply to meet demand ($m=3.63$, $N=8$)	Connecting with Producers ($m=3.50$, $N=8$)
Independent Grocery/Market	Inconsistent supply/seasonality ($m=3.93$, $N=15$)	Connecting with Producers ($m=3.60$, $N=15$)	Price ($m=3.53$, $N=15$)	Transportation and receiving products ($m=3.07$, $N=15$)
Speciality/Other	Inconsistent supply/seasonality ($m=3.55$, $N=11$)	Connecting with Producers ($m=3.50$, $N=10$)	Insufficient Supply to meet demand ($m=3.27$, $N=11$)	Price ($m=3.20$, $N=10$)

Figure 54: Barriers to Independent Retailers



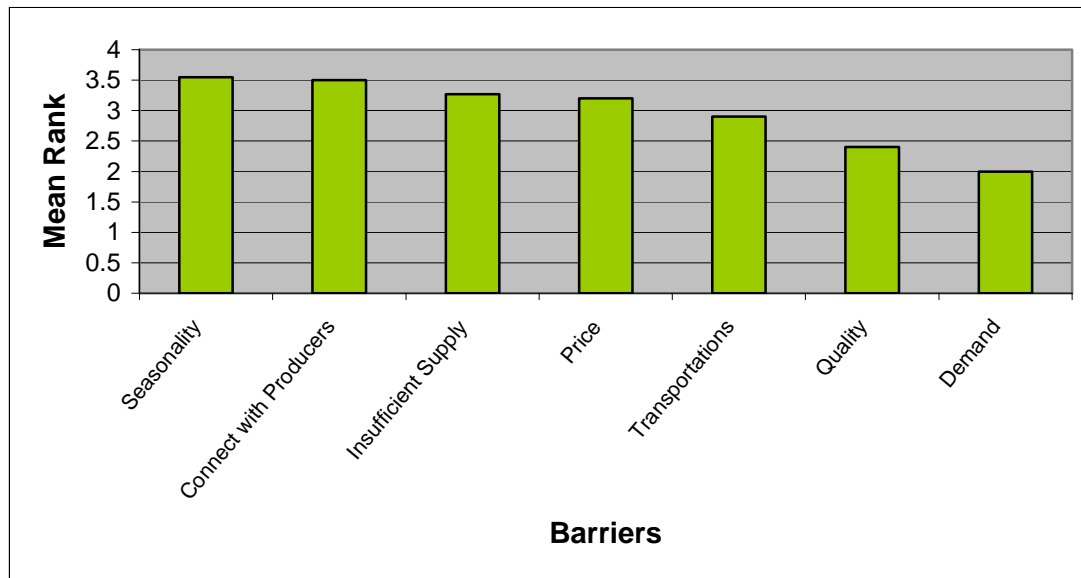
The top barriers to independent retailers were seasonality, connecting with producers, and price.

Figure 55: Barriers to Large Retailers



The top barriers to large retailers were price, seasonality, and insufficient supply to meet demand.

Figure 56: Barriers to Specialty Stores / Other



The top barriers to specialty stores were seasonality, connecting with producers, and insufficient supply to meet demand.

Perceived Barriers vs. Size of Store

We found no significant correlations between the size of retailers and any of the barriers. However, we found it worth to note that larger stores regarded “Insufficient supply to meet demand” higher than smaller stores.) Spearman’s rho- ($\rho = .265$, $p = .136$)

Perceived Barriers vs. Number of Requests

We did find a significant positive correlation between the number of requests retailers receive and the barrier “inferior quality,” meaning that those businesses that receive more requests are likely to perceive inferior quality as a barrier. Spearman’s rho- ($\rho = .363$, $p = .041$).

We also found a significant negative correlation between the number of requests retailers receive and the barrier “No demand for these types of products.” Spearman’s rho- ($\rho = -.395$, $p = .025$). This suggests that **those retailers that receive requests do not see demand for the requests as a barrier**—a finding that follows logically from number of requests received.

Perceived Barriers vs. Percentage of Local Inventory

We found one significant negative correlation between the percentage of local foods in the current inventory of retailers and the barrier “Connecting with producers.” Spearman’s rho- ($\rho = -.414$,

$p=.018$). Therefore, **those retailers that carry more local foods did not find connection with producers to be a major challenge.** Though not a significant finding, those retailers that currently stock local foods also tend not to see price and inconsistent supply and seasonality as major barriers.

Retailer Survey: Summary of Findings

We found many interesting findings in our retailer survey. Here is a highlight of the results:

- We received a 24% response rate, with 36 of the 147 surveys mailed back.
- Eleven of the 36 were large retailers and 25 were small retailers.
- The respondents were located in four of the five counties. Though we sent surveys to Monroe County, we did not receive any in return. We received 17 from Washtenaw, 7 from Wayne, 2 from Jackson, and 2 from Lenawee.
- Most retailers were full service grocery stores that stock all types of food and beverage related products.
- 85% of retailers carry at least some goods sourced from the region.
- There was strong interest in carrying local foods with 40% of the stores indicating a very high or high interest.
- Produce was the most favored type of local food retailers wished to carry. However, there was significant interest in each food type.
- $\frac{3}{4}$ receive regular requests for local food.
- We found a significant correlation between number of requests received and degree of interest in carrying local foods.
- Top three barriers to retailers were:
 1. Seasonality
 2. Price
 3. Connecting with Producers
- Retailers that were very interested in carrying local goods did not find consumer demand to be a barrier.
- Those retailers that receive more requests are likely to perceive inferior quality as a barrier.
- Those that carry more local foods did not find connection with producers to be a major challenge.

Consumer Survey Results

Introduction

One aspect of the food system that connects us is that we all consume food. We all need the nourishment and energy that food provides, regardless of our socioeconomic status, gender, race or ethnicity. And all of us possess a unique relationship with food. Yet, this relationship is often superficial. Most of us do not even know where our food comes from. Our current global food system has developed into such a complicated set of relationships that we, in Michigan, often get many of our tomatoes from California, asparagus from China, or beef from South America. Yet, all of these items are produced locally in our region.

Local food systems seek to establish an intentional set of relationships between local farmers, processors, distributors, retailers, and consumers of our food and food products. Reworking and strengthening the interconnections within our food system may help us address community problems ranging from public health, to economic development and job loss, to urban sprawl and our dependency on fossil fuels.

A cornerstone of a viable local food system is the committed participation of well-informed consumers who can influence how and where their food is produced. When local agriculture and food production are integrated in community, food becomes part of a community's problem-solving capacity rather than simply a commodity that's bought and sold. By turning toward the local we increase the capacity, as a community, to enhance our social, economic, political, and environmental well-being.

In conducting this survey, our main objectives were to collect basic characteristics of shoppers within the Study Area, assess current shopping trends, gauge interest in increased consumption of local foods, and identify potential barriers and opportunities for consuming local foods.

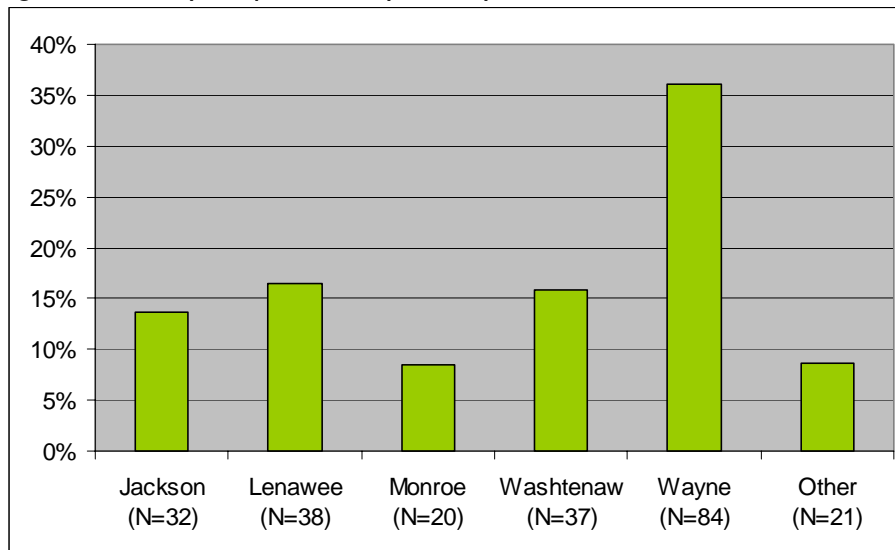
Survey Design

As a primary research objective, our project team collected and analyzed original data from 247 randomly sampled consumers at various food retail outlets within the Study Area. The consumers' survey (Appendix 12) consisted of 22 questions ranging from basic demographic information to shopping trends to perceptions about local foods in their community.

Survey Distribution

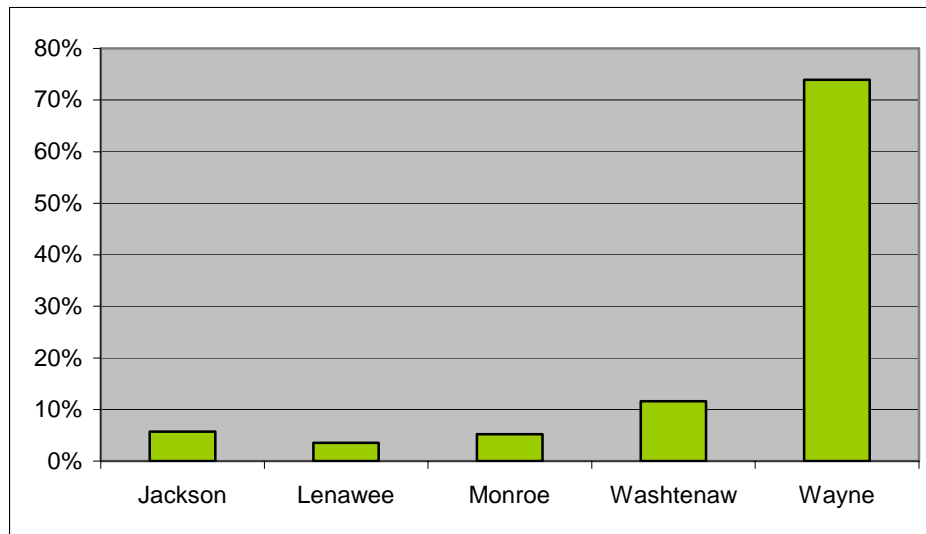
The distribution of survey respondents among the 5 counties of the Study Area include 32 shoppers (13.8 percent) from Jackson County, 38 (16.4 percent) from Lenawee County, 20 (8.6 percent) from Monroe County, 37 (15.9 percent) from Washtenaw County, 84 (36.2 percent) from Wayne County, and 21 (9.1 percent) from counties outside of the Study Area (Figure 57). Although we originally planned to obtain an equal number of completed surveys from each of the five counties, in actuality we obtained fewer surveys from Monroe County and more from Wayne County, which more accurately reflects the large number of residents within this urban population center (Figure 57). Demographically, in many respects the sample population surveyed within the Study Area closely resembled that of the actual population within the five counties, as described in greater detail below.

Figure 57: Survey Respondents by County



The number of respondents varied by county with the most from Wayne County, the most populous. While all surveys were collected within the Study Area, some respondents were not residents of one of the five counties.

Figure 58: Percent of Study Area Population by County, 2002



The majority of people in the Study Area reside in urban Wayne County (Source: U.S. Census Bureau, 2002 Census)

Sample Demographics

Of the 232 survey respondents (93.9 percent) that provided their age range, 79 (34.1 percent) identified themselves as age 18-34, 126 (54.5 percent) as age 35-64, and 27 (11.5 percent) as age 65 or older. As planned, no surveys were collected from individuals under the age of 18. Our calculations show that the mean age of the consumers that completed the survey was approximately 44.

Since survey respondents were randomly selected at each location, the team anticipated that the range of reported races/ethnicities would closely reflect the population of residents within the Study Area (Figure 59). In reality, of the 230 survey respondents that reported their race/ethnicity, 176 (76.5 percent) indicated that they considered themselves to be White or Caucasian,¹¹ 32 (13.9 percent) were African American, 7 (3.0 percent) were Asian or Pacific Islander (including the Indian subcontinent), 6 (2.6 percent) were American Indian or Alaskan Native, 4 (1.7 percent) were Hispanic or Latino (Spanish culture or origin, regardless of race), and 5 (2.2 percent) indicated that their race/ethnicity was not included as an option.

¹¹ Persons not of Hispanic origin, having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Figure 59: Comparison of Race/Ethnicity Classifications within the Study Area

Race/Ethnicity	Survey Respondents	Study Area ^{AC}	State of Michigan ^{AC}
White persons	76.5%	64.7%	81.4%
African American persons	13.9%	13.3%	14.3%
Asian or Pacific Islander persons	3.0%	2.3%	2.2%
American Indian and Alaska Native	2.6%	0.4%	0.6%
Persons of Hispanic or Latino origin	1.7% ^B	4.0% ^C	3.7% ^C
Persons reporting 2 or more races or race/ethnicity not listed	2.2%	1.5%	1.4%

^A Source: U.S. Census Bureau (2004)

^B Respondents selected this option as their race/ethnicity and may or may not be included in other survey race/ethnicity categories.

^C Hispanic individuals may be of any race and are also included in other applicable U.S. Census race categories.

Two-hundred nineteen survey respondents provided their household income range in response to this survey question. Of these individuals, 21 (9.6 percent) of the respondents indicated a household income roughly at or below the U.S. federal government's 2006 poverty guidelines¹², defined as \$9,800 for single-person households within the 48 contiguous states and the District of Columbia.¹³ On average, respondents' households consisted of two adults and 0.58 children under the age of 18. Thus, after adjusting these household income data to account for the average number of individuals within a household, our results reveal that poverty estimates for our sample population accurately reflect poverty trends within the five-county region of the Study Area, as reported by the U.S. Census Bureau (Figure 7). Additional income figures collected from our sample population are shown in Figure 60.

¹² Federal Poverty Guidelines published in the Federal Register, January 24, 2006 (Volume 71, Number 15), Page 3848-3849.

¹³ Percentage of survey respondents who indicated a household income range of less than \$10,000.

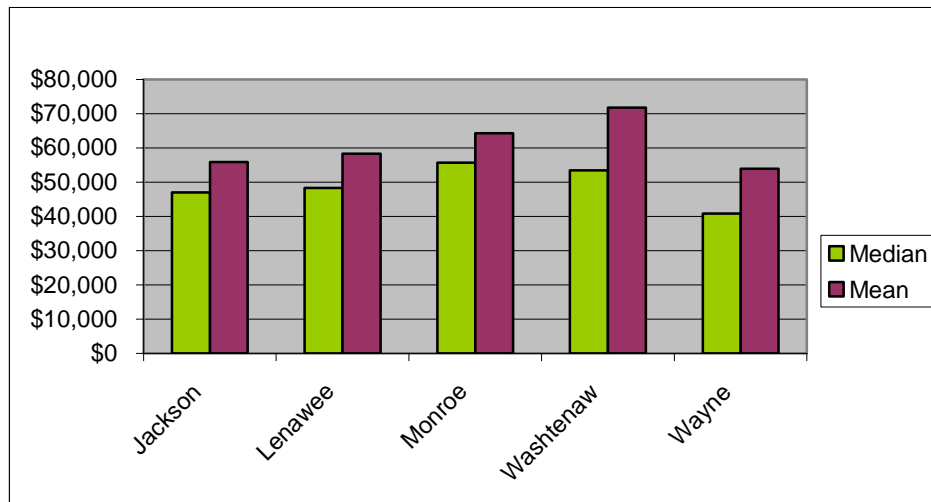
Figure 60: Comparison of Household Income Ranges within the Study Area

Household Income Range	Survey Respondents	Study Area ^A	State of Michigan ^A
Less than \$10,000	9.6% (N=21)	8.3%	8.6%
\$10,000 to \$14,999	7.8% (N=17)	6.0%	6.1%
\$15,000 to \$24,999	15.5% (N=34)	11.5%	12.0%
\$25,000 to \$34,999	11.9% (N=26)	11.2%	11.7%
\$35,000 to \$49,999	17.4% (N=38)	14.0%	15.0%
\$50,000 to \$74,999	18.3% (N=40)	20.0%	19.5%
\$75,000 to \$99,999	6.8% (N=15)	13.3%	11.8%
\$100,000 to \$149,999	8.7% (N=19)	10.8%	10.0%
\$150,000 or more	4.1% (N=9)	4.9%	5.2%
Median household income	-	\$49,073	\$46,039
Mean household income	\$51,982	\$60,844	\$60,008

^A Source: U.S. Census Bureau, 2005 American Community Survey

Based on this information, we can conclude that our sample population included a larger percentage of mid- to low-income households than is reflected by the actual population within the Study Area. This conclusion is further confirmed by our calculated mean income of \$51,982 for the sample population, compared with U.S. Census Bureau figures of \$60,844 for the Study Area and \$60,008 for the state of Michigan as a whole. Mean and Median household incomes by county are shown in Figure 61.

Figure 61: Mean and Median Household Income by County

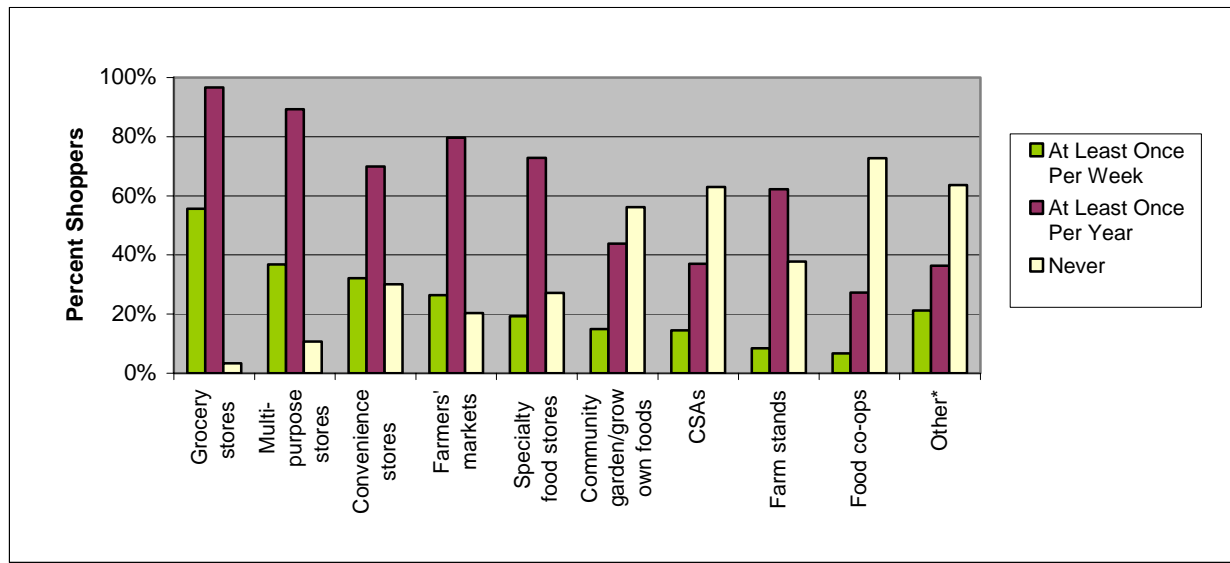


Washtenaw has the greatest mean income and tied with Monroe for the greatest median income. Wayne has the lowest mean and median income of the five counties. (Source: U.S. Census Bureau, 2005 American Community Survey)

Consumers' Shopping Habits

Of the 239 survey respondents that provided information about their shopping responsibilities, 142 (59.4 percent) were responsible for 80 percent or more of the food shopping for their household, while 28 (11.7 percent) were responsible for 61-80 percent, and 69 (28.9 percent) were responsible for less than 60 percent of the food shopping. Data collected on consumers' shopping habits also revealed several notable findings, including that 132 shoppers (55.6 percent) within the sample population visit *grocery stores* (e.g., Kroger, Busch's, Farmer Jack), 83 shoppers (36.8 percent) frequent *multi-purpose stores* (e.g., Meijer, K-Mart, Target), and 67 shoppers (32.1 percent) visit *convenience stores* to purchase foods at least once per week. Other types of stores that are visited less frequently to obtain foods include *specialty food stores* (e.g., Whole Foods, ethnic markets), *farmers' markets*, and *farm stands*. However, over the course of a year, an estimated 80 percent of consumers purchase food at *farmers' markets*, 62 percent at *farm stands*, 43 percent *grow their own foods* or participate in a *community garden*, 37 percent obtain foods from *community supported agriculture (CSA) initiatives*, and 27 percent purchase foods at *food cooperatives* at least once (Figure 62).

Figure 62: Frequency of Food Purchases by Retail Outlet



Most people buy their food from grocery stores or multi-purpose stores such as Meijer or Target. The “Other” option allowed survey respondents to list additional types of retail outlets or other means of obtaining foods, as appropriate. These included wholesale outlets (e.g., Sam’s Club), pharmacies, restaurants, and hunting.

When conducting Kruskal-Wallis tests on these data, statistically significant differences were revealed among the five counties with respect to the frequency of food purchases at all listed food retail outlets (e.g., grocery stores, specialty food stores, multi-purpose stores, food cooperatives, farmers’ markets, farm stands) and other food sources (e.g., CSAs, community or own garden) except *convenience stores* ($\chi^2=7.996$, $df=5$, $p=.156$, $N=199$). These results were also reflected by one-way ANOVA tests.¹⁴ Post hoc comparisons using Tukey HSD tests also revealed the following key findings:

- Shoppers in Lenawee County are statistically more likely than those in Wayne County to purchase foods at *grocery stores* ($p=.048$); more likely than their counterparts in Wayne County to purchase foods at *multi-purpose stores* ($p=.001$); more likely than shoppers in Jackson ($p=.004$), Monroe ($p=.039$), Washtenaw ($p=.000$), and Wayne ($p=.001$) counties to obtain foods from *CSAs*; more likely than Jackson ($p=.000$), Monroe

¹⁴ One-way ANOVA tests show highly significant differences between the five counties of the Study Area with respect to frequency of food purchases at: specialty food stores ($F(5, 195)=3.612$, $p=.004$); multi-purpose stores ($F(5, 207)=4.672$, $p=.000$); CSAs ($F(5, 181)=4.894$, $p=.000$); food co-ops ($F(5, 177)=5.402$, $p=.000$); farmers’ markets ($F(5, 198)=9.524$, $p=.000$); and farm stands ($F(5, 185)=4.759$, $p=.000$). No significant difference was found between the five counties with respect to the frequency of food purchases at grocery stores ($F(5, 216)=1.911$, $p=.094$); however, post-hoc comparisons using Tukey HSD tests do show a significant difference between shoppers in Lenawee and Wayne counties.

($p=.000$), Washtenaw ($p=.000$), and Wayne ($p=.000$) county shoppers to buy foods at *farmers' markets*; and more likely than shoppers in Washtenaw or Wayne counties to purchase foods at *farm stands* ($p=.001$ and $p=.000$, respectively);

- Shoppers in Washtenaw and Wayne counties are statistically more likely than Jackson County shoppers to purchase foods at *specialty food stores* ($p=.045$ and $p=.009$, respectively); and
- Shoppers in Washtenaw County are statistically more likely than shoppers in Jackson ($p=.002$), Lenawee ($p=.000$), and Monroe ($p=.009$) counties to buy foods at *food cooperatives*.

These results suggest that the type of retail outlets available for obtaining food may vary by county within the Study Area. However, these findings may also be a factor of varying socioeconomic status among residents of the communities within each county.

Using Spearman's rank correlation tests, the team was also able to identify several instances of differentiated markets for retailers based on shopping trends within our sample population. For example, there is a statistically significant negative correlation between shoppers that frequently purchase foods for their household at *grocery stores* and their frequency of purchases at *food cooperatives* ($\rho=-.154$, $p=.033$). Thus, it appears that these two types of retail outlets attract differing sets of consumers for food retail purchases. Similarly, shoppers that frequently purchase foods for their household at *multi-purpose stores* are statistically unlikely to purchase foods at *specialty food stores* ($\rho=-.162$, $p=.021$). Conversely, a highly significant correlation was noted among consumers that frequently purchase foods at *multi-purpose stores* and their frequency of food purchases at *convenience stores* ($\rho=.233$, $p=.001$).

To investigate potential connections between household income and the frequency of food purchases at specific types of retailers, we conducted Spearman's rank correlation tests which showed a highly significant relationship between household income and the frequency of food purchases at *specialty food stores* ($\rho=.193$, $p=.007$). Conversely, these tests also revealed a highly negative correlation among household income and purchases at *convenience stores* ($\rho=-.229$, $p=.001$).

Our team also investigated any potential connections between race/ethnicity and shopping trends at various retail outlets. Kruskal-Wallis tests of these data showed a statistically significant difference between the three primary race/ethnicity classifications (i.e., white/Caucasian, African American, and other) with respect to consumers' frequency of shopping for food at *specialty food stores* ($\chi^2=11.528$, $df=2$, $p=.003$, $N=201$), *multi-purpose stores* ($\chi^2=12.646$, $df=2$, $p=.002$, $N=214$), *convenience stores* ($\chi^2=6.446$, $df=2$, $p=.040$, $N=199$), and *food cooperatives* ($\chi^2=8.998$, $df=2$, $p=.011$, $N=185$). One-way ANOVA tests confirm these results.¹⁵ More specifically, post-hoc comparisons using Tukey HSD tests indicate that all “other” shoppers (i.e., non-white and non-African American consumers) are statistically more likely than white shoppers to purchase foods at *specialty food stores* ($p=.003$); shoppers classified as white or African American are significantly more likely than other non-white or non-African American shoppers to purchase foods at *multi-purpose stores* ($p=.028$ and $p=.001$, respectively); African American shoppers are statistically more likely than white shoppers to buy foods at *convenience stores* ($p=.018$); and “other” shoppers are statistically more likely than white or African American shoppers to buy foods at *food cooperatives* ($p=.002$ and $p=.046$, respectively). Conversely, Kruskal-Wallis test results show no statistically significant difference between the three race/ethnicity classifications and consumers' frequency of shopping for food at *grocery stores*, *CSAs*, *community gardens/grow own foods*, *farmers' markets*, and *farm stands*. These data may warrant further investigation to answer potential questions about access to healthy and nutritious foods in various communities and populations, and may highlight opportunities to utilize more effective product pricing and marketing techniques.

Further, Mann-Whitney tests showed no statistically significant difference between households with children under 18 compared with households with no children as it relates to their frequency of food purchases at *grocery stores*, *specialty food stores*, *multi-purpose stores*, *CSAs*, *community garden/grow own food*, *convenience stores*, *food cooperatives*, and *farm stands*. However, consumers with no children were, in fact, statistically more likely to shop for food at *farmers' markets* ($z=-2.886$, $p=.004$).

¹⁵ One-way ANOVA tests show significant differences between three classifications of race/ethnicity (i.e., white, African American, and other) and frequency of food purchases at: specialty food stores ($F(2, 198)=5.501$, $p=.005$); multi-purpose stores ($F(2, 211)=6.797$, $p=.001$); convenience stores ($F(2, 196)=3.946$, $p=.021$); and food co-ops ($F(2, 182)=5.826$, $p=.004$).

Consumers' Awareness of Food Origins

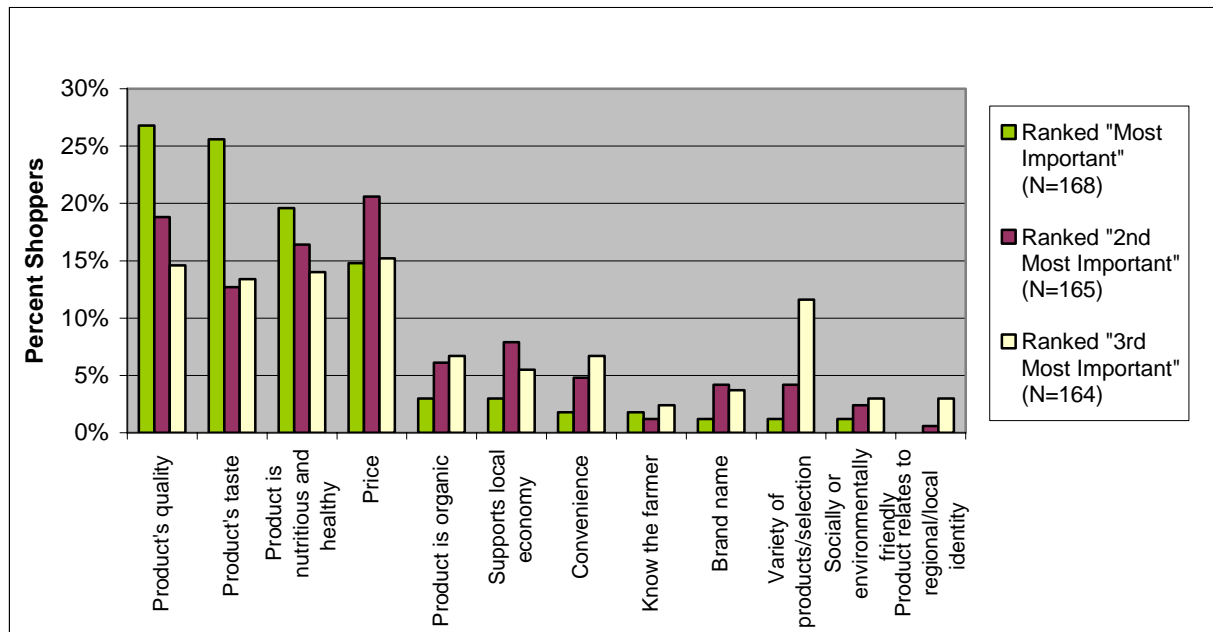
We then asked respondents to rate how often they thought about how and where their food was produced using a five-point Likert scale with “1” as Never and “5” as Always. Of the 246 survey respondents (99.6 percent) that replied, 114 shoppers (46.3 percent) selected either 1 or 2 to indicate that they *frequently* think of these factors, 115 (65.0 percent) chose 3 or 4 to reflect that they *occasionally* or *rarely* think of these factors, and 17 (6.9 percent) selected 5 to show that they *never* consider these factors. Aggregate survey responses for this question showed a mean response of 3.33 (SD=1.096), which roughly correlates with *occasionally* thinking of how and where food is produced. We then used a one-way ANOVA to test for significance among the five counties in the Study Area with respect to the frequency of thinking about how where food was produced; however, these results showed no differences among the counties.

To investigate other potential influences on consumers' likelihood of considering how and where their foods were produced, our team ran Mann-Whitney tests which showed no statistical significance between consumers with or without children under 18 in the household as it relates to how often they think about how and where food was produced. A Spearman's rank correlation test also shows that consumers who frequently purchase foods at specialty food stores ($\rho=.327, p=.000$), CSAs ($\rho=.359, p=.000$), food cooperatives ($\rho=.172, p=.017$), farmers' markets ($\rho=.411, p=.000$), farm stands ($\rho=.284, p=.000$), or who participate in community gardens or grow their own food ($\rho=.306, p=.000$), are statistically significantly correlated with their frequency of thinking about how and where their foods were produced. Conversely, no significant relationship was shown to exist between the frequency of thinking about how and where food was produced and the frequency of food purchases at grocery stores, multi-purpose stores, and convenience stores.

Factors that Influence Consumers' Food Purchases

Our project team was also interested in learning more about the factors that influence consumers' decisions to purchase foods for their household. Of the 168 survey respondents (68 percent) that completed this portion of the survey, 45 (26.8 percent) selected *product quality*, 43 (25.6 percent) listed *product taste*, 33 (19.6 percent) chose *nutritional value*, and 25 (14.9 percent) listed *price* as the most important factors considered when purchasing food items (Figure 63).

Figure 63: Factors Considered by Consumers when Purchasing Food Items



The top factors considered by consumers are quality, taste, nutritious value, and price.

We then compared these responses with consumers' frequency of shopping for food at specific types of retailers and found several potential patterns. For example, consumers that shop most frequently at grocery stores, multi-purpose stores, and convenience stores tend to value *price* as the most important factor when purchasing foods; consumers who purchase foods at specialty food stores and food cooperatives consider *nutritional value* of foods to be most important; and consumers who frequently shop at farmers' markets, farm stands, or participate in CSAs value *product quality* as the most important factor when purchasing foods. However, one-way ANOVA tests confirm significant differences among the top four purchasing factors for only specialty food store and farmers' market shoppers.¹⁶ Specifically, post-hoc comparisons using Tukey HSD tests reveal that shoppers who value *quality* and *nutritional value* over *price* are statistically more likely to purchase foods at specialty food stores ($p=.045$ and $p=.043$, respectively); and shoppers who value *taste* and *quality* over *price* are statistically more likely to purchase foods at farmers' markets ($p=.032$ and $p=.029$, respectively).

¹⁶ One-way ANOVA tests show a significant difference among the top four purchasing factors (i.e., taste, quality, price, and nutritional value) with respect to the frequency of food purchases at specialty food stores ($F(3, 122)=3.284, p=.023$) and farmers' markets ($F(3, 122)=3.108, p=.029$). Similar tests show no significant differences with respect to CSAs ($F(3, 114)=2.225, p=.089$).

Further, Chi-square and Fisher's Exact tests revealed a significant relationship between the number of children under 18 living in a household and the consideration of *quality* and *price* as the top two most important factors when purchasing foods ($\chi^2=4.062$, $df=1$, $p=.044$, $N = 62$).

The Demand for Local Foods

In investigating the demand for local foods within the Study Area, our team asked survey respondents to indicate how important they felt it was to have local foods grown and available for purchase in their community, using a five-point Likert scale with "5" as *very important* and "1" as *does not matter at all*. Of the 231 respondents (93.5 percent) that provided an answer to this question, 196 (84.8 percent) selected 5 or 4 to indicate that it was either *very* or *somewhat important*, 25 (10.8 percent) selected 3 showing that they were *neutral* and did not feel strongly either way, and only 10 (4.3 percent) recorded a 1 to show that it *does not matter at all* to have local foods grown and available in their community. Consequently, the mean response from this question was 4.29 (SD=.875), which confirms the relative importance of the availability of local foods to most consumers within the sample population. When analyzing these data by geographic location, a one-way ANOVA test showed no significant difference among the five counties with respect to consumers' importance of the availability of local foods in their community.

We then analyzed the survey responses to learn how specific demographic factors may impact consumers' opinions of the importance of local food availability within their community. When considering the sample population by age, 33 (42.9 percent) of the respondents between 18 and 35 years old indicated that local food availability in their community was *very important*, as did 70 (56.9 percent) of respondents between 35 and 64, and 12 (46.2 percent) of the respondents age 65 or older. However, a Spearman's rank correlation test indicated that there was no significant relationship between consumers' age and importance of local food availability ($\rho=.104$, $p=.119$). Similarly, a Kruskal-Wallis test showed no statistically significant differences between consumers' importance of local food availability in their community with respect to consumers' household income ($\chi^2=1.402$, $df=4$, $p=.844$, $N = 213$). A Spearman's rank correlation test also confirms this conclusion ($\rho=.069$, $p=.319$).

Further, in considering race/ethnicity as a potential factor, our team used Kruskal-Wallis tests to compare three groupings of race/ethnicity (i.e., white, African American, other) with consumers' importance of the availability of local foods in their community. Results from this inquiry show no

statistically significant relationship between these two factors. On the other hand, the number of children under 18 in the household appears to influence a shopper's importance of the availability of local foods in their community, as identified by a Mann-Whitney test of these two factors ($z=-2.077$, $p=.038$). Specifically, consumers with no children under 18 in the household are statistically more likely to feel that it's important to have local foods grown and available for purchase in their community.

Although a large majority of survey respondents felt that it was very or somewhat important to have local foods available within their community, their perceptions of current local food availability within their communities were much less optimistic. Specifically, survey respondents were asked to rate the availability of local foods within their community based on a five-point Likert scale, with "5" as *excellent* and "1" as *poor*. Of the 232 survey respondents, 88 (38.0 percent) reported food availability as *above average* or *excellent*, 74 (31.9 percent) as *average*, and 70 (30.2 percent) as *fair* or *poor*. The mean response for this question was 3.09 (SD=1.14), showing that the average consumer within the sample population perceives food availability within their community to be about *average*. This discrepancy between relative importance and perceived lack of availability may be interpreted as an important indicator of the demand for local foods within the Study Area.

In investigating the nature of geographic location with respect to these perceptions, a one-way ANOVA test shows a highly significant difference among the five counties with respect to perceptions of local food availability in consumers' communities ($F(4, 194)=4.917$, $p=.001$). More specifically, post-hoc comparisons using Tukey HSD tests show that shoppers in Washtenaw County perceive greater access than their counterparts in both Monroe and Wayne counties ($p=.022$ and $p=.006$, respectively).

To learn more about this potential opportunity for local entrepreneurs, our team compared data on race/ethnicity and consumers' perceptions of the availability of local foods in their community. However, using a Kruskal-Wallis test, we determined that there was no statistical significance among the three race/ethnicity classifications (i.e., white, African American, other) in this regard. Similarly, Spearman's rank correlation tests show no significant relationships between age and consumers' perceptions of availability of local foods or between household income and consumers' perceptions of availability of local foods.

Frequency of Local Food Purchases

Next, our team investigated the frequency of local food purchases by consumers within the Study Area. Of the 241 survey respondents that completed this question, 121 (50.2 percent) indicated that they purchase local foods *at least once per week* during the typical growing season, defined as May to December. Of the remaining respondents, 69 (28.6 percent) of consumers purchase local foods *several times per month*, 33 (13.7 percent) purchase local foods *at least once per month*, and only 18 (7.5 percent) *never* purchase local foods during this time period. Not surprisingly, a Spearman's rank correlation test found a highly significant relationship between consumers' perceptions of the availability of local foods in their community and the frequency of purchases of local foods during the typical growing season ($\rho=.248$, $p=.000$). This suggests that consumers who know that local foods are available are more likely to purchase these items; whereas, consumers who are not aware of the availability of local foods in their community are not likely to buy local foods.

To explore this issue further, we then compared the frequency of local food purchases during the growing season with demographic data collected from the sample population. First, a Spearman's rank correlation test revealed a statistically significant relationship between the age of consumers and their frequency of local food purchases during the typical growing season ($\rho=.133$, $p=.044$).

However, a Kruskal-Wallis test shows no statistically significant difference between age groupings in this scenario ($\chi^2=5.050$, $df=2$, $p=.080$, $N=229$), indicating that all age groups are significant with respect to their purchase frequency. Further, a Spearman's rank correlation test indicated that household income levels are not significantly related to frequency of local foods purchases. Similarly, Kruskal-Wallis tests show no significant difference between the three ethnicity classifications (i.e., white, African American, other) or among the number of children under 18 living in the household as these demographics relate to consumers' frequency of local food purchases during the growing season.

We then compared consumers' frequency of purchases of local foods during the typical growing season with the top four factors identified as most important when purchasing foods (Figure 64). The data collected from our sample population of 142 survey respondents show that shoppers who purchase local foods most frequently (*at least once per week*) tend to value product quality and taste when purchasing foods, whereas less frequent shoppers (*at least once per month*) tend to value nutritional value and price as most important when purchasing foods. Shoppers that reported

never purchasing local foods during the typical growing season identified price as their most important purchasing factor for food items.

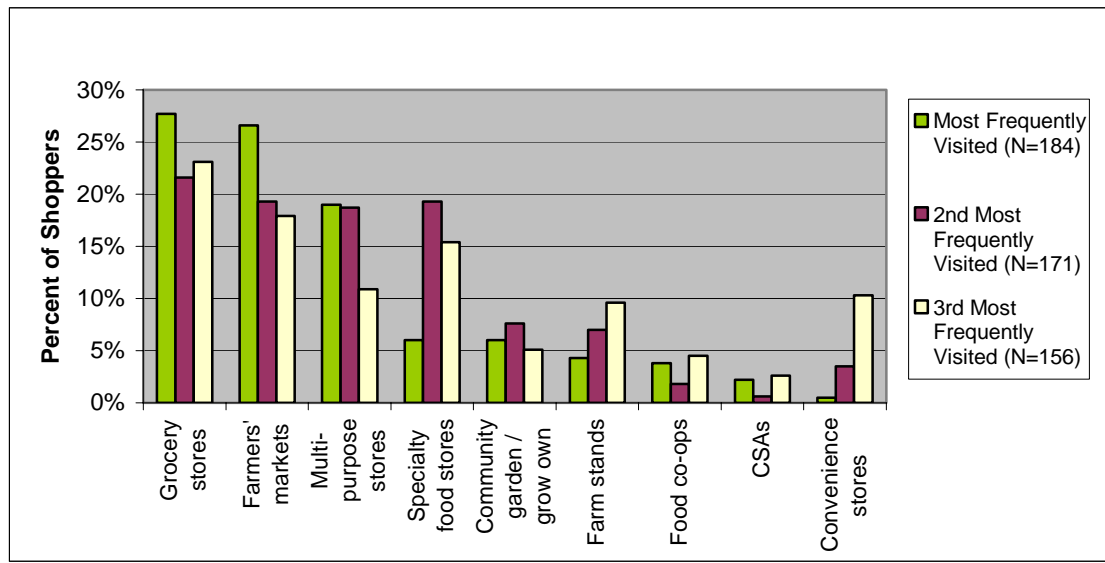
Figure 64: Frequency of Local Food Purchases during the May-December Growing Season Compared with Purchasing Factors

Most Important Factors When Purchasing Foods	Frequency of Local Food Purchases (% Shoppers)			
	At least once per week (N=66)	Several times per month (N=42)	Once per month (N=21)	Never (N=13)
Taste	51.2%	18.6%	14.0%	16.3%
Quality	51.5%	32.6%	16.3%	0.0%
Price	39.1%	21.7%	17.4%	21.7%
Nutritional value	39.4%	45.5%	12.1%	3.0%

Purchasing Local Foods

When asked to identify the three places visited most frequently to purchase or obtain local foods in their community, 51 (27.7 percent) survey respondents indicated that they visit grocery stores, 49 (26.6 percent) visit farmers' markets, and 35 (19.0 percent) visit multi-purpose stores to purchase local foods (Figure 65). Conversely, other retailers such as specialty food stores, farm stands, food cooperatives, CSAs, and convenience stores are visited less frequently. However, Kruskal-Wallis tests showed no statistically significant relationship between the frequency of consumers' food purchases at these top three retail outlets and perception of the availability of local food in their community.

Figure 65: Frequency of Visits to Food Retail Outlets to Purchase Local Foods



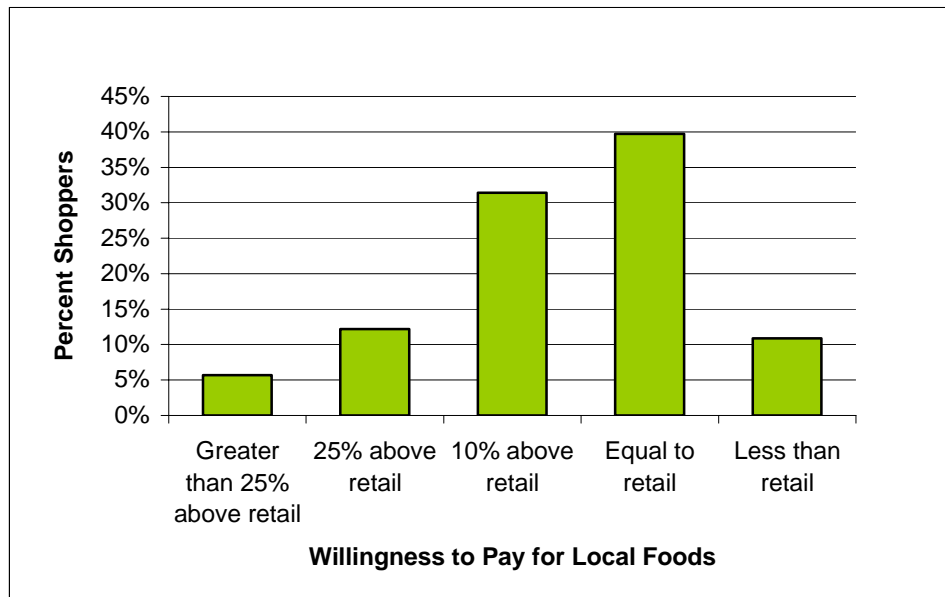
Consumers most often purchased local foods at grocery stores, followed by farmers' markets and multi-purpose stores.

Using a Pearson Chi-Square test, the data show a significant relationship between the top three retailers visited most frequently to purchase local foods and the county in which the consumer resides ($\chi^2=20.386$, $df=10$, $p=.026$, $N=127$). However, statistical testing of the survey data indicate that race/ethnicity, household income, and age do not appear to be associated with the frequency of consumers' visits to specific types of food retailers to purchase local foods. Interestingly, however, a Chi-square test showed a statistically significant relationship between the number of children under 18 in the household and the types of retailers visited most frequently to purchase local foods ($\chi^2=7.754$, $df=2$, $p=.021$, $N=123$).

Consumers' Willingness to Pay for Local Foods

Finally, our team chose to investigate primary factors influencing consumers' willingness to pay for locally grown or produced foods to further clarify the demand for local foods within the Study Area. In posing this question to our survey respondents, of the 229 individuals (92.7 percent) that provided an answer, 113 (49.3 percent) were willing to pay greater than the typical retail price for similar items, 91 (39.7 percent) were willing to pay equal to the typical retail price, and only 25 (10.9 percent) were willing to pay less than the typical retail price for similar food items (Figure 66).

Figure 66: Consumers' Willingness to Pay for Locally Grown or Produced Food Items



While most consumers are only willing to pay equal to retail for local goods, nearly 20% are willing to pay 25% or greater.

To further investigate the potential factors that may influence a consumers' willingness to pay for local foods, our team compared these data with several demographic factors. Interestingly, Spearman's rank correlation tests showed no statistically significant relationships between household income range ($\rho=.129$, $p=.061$) or age and consumers' willingness to pay for locally grown or produced foods. And a Chi-square test also showed no statistically significant relationship between the number of children under 18 living in the household and consumers' willingness to pay. On the other hand, Kruskal-Wallis tests did, in fact, show a highly significant difference between the three race/ethnicity classifications (i.e., white, African American, other) with respect to a consumers' willingness to pay for locally grown or produced foods ($\chi^2=10.496$, $df=2$, $p=.005$, $N=222$), which was also confirmed by a one-way ANOVA test showing similar results ($F(2, 219)=4.793$, $p=.009$). Specifically, post-hoc comparisons using Tukey HSD tests showed that white shoppers are statistically willing to pay more than African American shoppers when evaluating race/ethnicity based on three classifications ($p=.007$).¹⁷ However, in further investigating this finding, a Mann-Whitney test showed that no significant difference exists among the three race/ethnicity

¹⁷ One-way ANOVA tests comparing race/ethnicity data with all six categories also revealed a significant difference among race/ethnicity classifications with respect to consumers' willingness to pay for local foods ($F(5, 216)=2.471$, $p=.033$); post-hoc comparisons using Tukey HSD tests showed that white shoppers are statistically willing to pay more than African American shoppers ($p=.028$).

classifications with respect to household income ($z=-1.434$, $p=.152$) within the Study Area, which further illustrates the importance of race/ethnicity over household income in this finding.

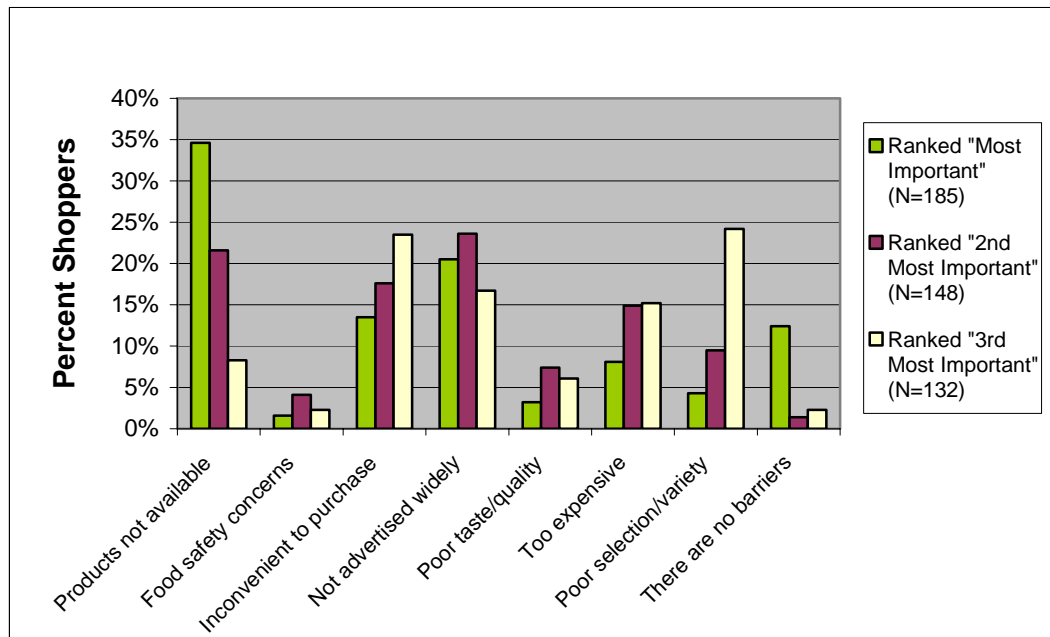
In addition, a Kruskal-Wallis test showed statistically significant differences between the top four purchasing factors considered when purchasing foods (i.e., taste, quality, price, and nutritional value) with respect to consumers' willingness to pay for locally grown or produced foods ($\chi^2=10.817$, $df=3$, $p=.013$, $N=137$). A one-way ANOVA test also supported this conclusion ($F(3, 133)=3.480$, $p=.018$), while post-hoc comparisons using Tukey HSD tests revealed that shoppers who consider the nutritional value of foods to be most important when purchasing foods are significantly willing to pay more for local foods ($p=.015$).

In comparing a consumers' willingness to pay for local foods, Spearman's rank correlation tests showed a highly significant relationship between willingness to pay and shoppers that frequently purchase foods at specialty food stores ($\rho=.271$, $p=.000$), farmers' markets ($\rho=.293$, $p=.000$), or participate in CSAs ($\rho=.213$, $p=.003$). Other significant relationships were identified between a consumers' willingness to pay and their frequency of food purchases at food cooperatives ($\rho=.148$, $p=.047$) or obtaining foods from a community garden or their own garden ($\rho=.162$, $p=.027$). Conversely, a Spearman's rank correlation test identified a significant negative relationship between a consumers' willingness to pay for local foods and their frequency of shopping for foods at multi-purpose stores ($\rho=-.157$, $p=.022$), indicating a potential price sensitivity among those consumers. No statistically significant relationship was found between consumers' willingness to pay for local foods and their frequency food purchases at grocery stores, convenience stores, or farm stands.

Barriers to the Consumption of Local Foods

To identify potential barriers to purchasing local foods, we asked respondents to identify the top three barriers within their community. Of the 185 respondents (74.9 percent) that replied, 64 (34.6 percent) identified their perceived top barrier as the availability of local products, 38 (20.5 percent) indicated that local items are not widely advertised, and 25 (13.5 percent) suggested that local items were inconvenient to purchase. Additional write-in comments from survey respondents also confirmed that shoppers perceive advertising or labeling of local foods to be poor or nonexistent at retail outlets in their communities. However, 23 (12.4 percent) survey respondents felt that there were no significant barriers to purchasing local foods in their community.

Figure 67: Potential Barriers to Purchasing Local Foods



Consumers' top barriers are low availability of local products, inconvenient to purchase, and lack of knowing where local products exist through advertising.

We then compared these data with basic demographic data for the survey respondents to learn more about potential differences in perceived barriers among residents within the Study Area. Using a Chi-square test, we identified that no statistically significant relationship exists between the number of children under 18 living in consumers' households and the factors considered to be barriers when purchasing local foods in their community. With respect to race/ethnicity classifications, the descriptive statistics gathered from the survey show that white and "other" race/ethnicity shoppers (e.g., Asian, American Indian, Alaskan Native, or Hispanic/Latino populations) tend to feel that local foods are not available in their community, whereas African American shoppers tend to feel that local foods are not advertised widely within their community and are too expensive (Figure 68). In addition, Kruskal-Wallis tests showed no significant differences among the top three perceived barriers and the perception that there are no barriers to purchasing local foods in consumers' communities as it relates to consumer age groupings or household income.

Figure 68: Top Barriers to Purchasing Local Foods Compared with Consumers' Race/Ethnicity

Top Barriers to Purchasing Local Foods	Race/Ethnicity (% shoppers)		
	White/Caucasian (N= 143)	African American (N=18)	Other (N=17)
Products not available	37.1%	16.7%	41.2%
Food safety concerns	0.0%	0.0%	17.6%
Inconvenient to purchase	13.3%	11.1%	17.6%
Not advertised widely	21.7%	22.2%	5.9%
Poor taste/quality	1.4%	16.7%	5.9%
Too expensive	6.3%	22.2%	5.9%
Poor selection/variety	4.9%	0.0%	5.9%
Other ^A	1.4%	5.6%	0.0%
No barriers exist	14.0%	5.6%	0.0%

^A Other was identified by survey respondents as location and/or perceived racial segregation.

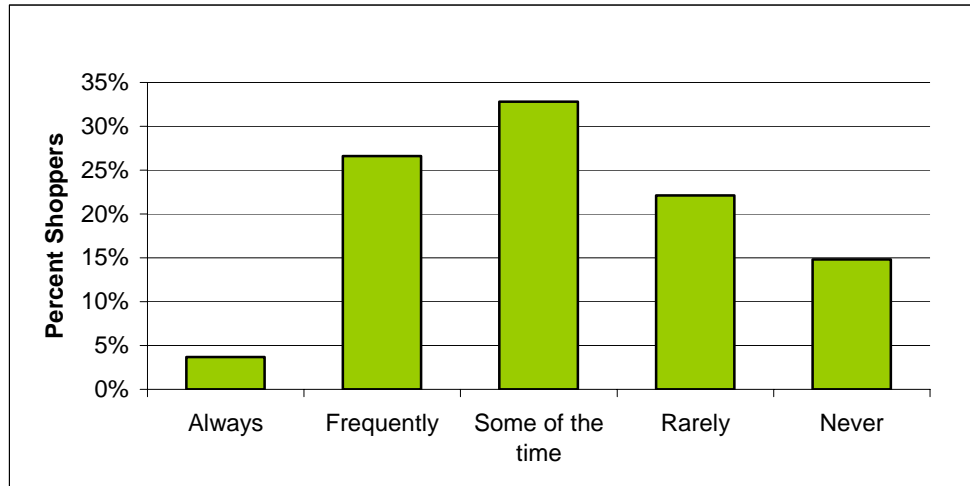
When comparing consumers' perceived barriers to purchasing local foods with their geographic location by county within the Study Area, a Pearson Chi-square test showed that no significant relationship exists between these two factors.

Opportunities for Local Foods

As noted in our review of the existing food system literature, the demand for and sales of organic foods may be a potential indicator of future trends for local foods. To investigate this potential linkage within the Study Area, our team asked survey respondents to provide estimations of their frequency of purchases of organic food items (Figure 69). Of the 244 individuals (98.8 percent) that responded, 9 (3.7 percent) reported that they *always* purchase organic foods, 65 (26.6 percent) purchase organic foods *frequently*, 80 (32.8 percent) purchase them *occasionally*, and 90 (36.9 percent) *rarely* or *never* purchase organic foods. Using Spearman's rank correlation tests, we were then able to identify a highly statistically significant relationship between consumers' frequency of organic food purchases and their frequency of local food purchases during the typical growing season ($\rho=.210$, $p=.001$), which confirms the conclusions identified by previous studies that similar consumers are currently seeking out both organic and local food items. One might be able to infer from these results that, over time, the demand for local foods may eventually mirror that of organic foods which has sparked significant growth within the organic food industry over the last several

years. Thus, local farmers and producers, as well as other food system stakeholders, should take note of this demand and potential for local foods and work to address this unmet demand.

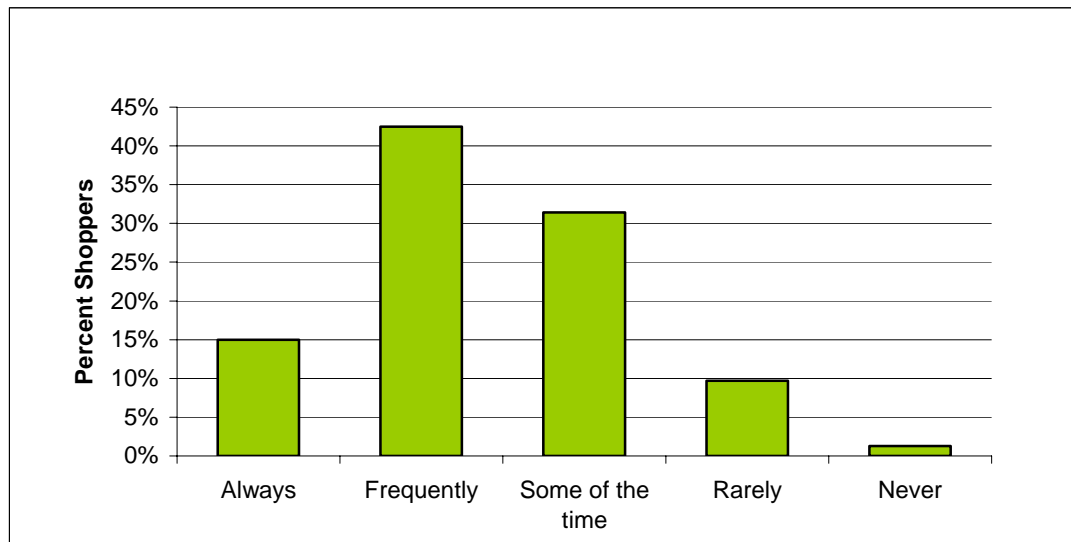
Figure 69: Frequency of Organic Food Purchases



Over half of the respondents reported purchasing organic foods “some of the time” or “frequently.”

Another potential opportunity for local foods that we investigated was for restaurants to increase their usage of local food items in meals. To test this hypothesis, we asked survey respondents to identify how often they would likely select dishes at restaurants or other food service establishments that were prepared with local foods, if they were available (Figure 70). Of the 226 individuals (91.5 percent) that responded, 130 (57.5 percent) indicated that they would *frequently* or *always* choose these items, 71 (31.4 percent) would select these dishes *some of the time*, and only 25 (11.0 percent) would *rarely* or *never* order these items.

Figure 70: Frequency of Ordering Dishes Made with Local Foods



Consumers indicated a promising intent to order dishes made with local foods at restaurants if offered to them in the future.

Consumer Survey: Summary of findings

- Over half of consumers surveyed frequently purchase food from grocery stores; 1/3 shop at multi-purpose stores on a weekly basis.
- Eighty percent of shoppers buy at farmers' markets, 62 percent at farm stands, 43 percent grow their own foods, 37 percent participate in CSAs, and 27 percent buy at food co-ops at least once per year.
- Forty-six percent of shoppers reported they "always" or "frequently" think about how or where their food was produced.
- Eighty-five percent of shoppers felt that local food availability in their community was either very or somewhat important.
- Thirty-eight percent rated local food availability in their community as above average or excellent; 30 percent rated it fair or poor. Consumers in Jackson, Lenawee and Washtenaw counties perceive greater access to local foods.
- Fifty percent purchased local foods at least once per week during the growing season (i.e., May to December); 8 percent never did.
- No relationship was found to exist between household income or race/ethnicity and the frequency of local food purchases.

- Consumers who buy local tend to value quality and taste; less frequent buyers value nutritional value and price; other shoppers value price.
- Twenty-eight percent visit grocery stores to buy local foods; 27 percent visit farmers' markets; and 19 percent visit multi-purpose stores.
- Forty-nine percent were willing to pay greater than retail price for local foods; 40 percent were willing to pay equal to retail price; and 11 percent were willing to pay less than retail.
- No relationship was found to exist between consumers' willingness to pay and household income.
- Shoppers that were willing to pay higher prices for local foods tend to value nutritional value over price in purchasing food items for their household.
- Top barriers to purchasing local foods included: availability, convenience, and lack of advertising; 12 percent surveyed perceived no barriers.
- Fifty-eight percent of shoppers would select dishes prepared with local foods at restaurants, if available.