FARMERS' MARKETS AND ORGANIC PRODUCE

IN OKLAHOMA

By

KRIS E. GILL

Bachelor of Arts in Anthropology and Sociology

Mills College

Oakland, California

2003

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
May, 2006

FARMERS' MARKETS AND ORGANIC PRODUCE

IN OKLAHOMA

Thesis Approved:

Dr. Alyson Greiner
Thesis Adviser

Dr. Allen Finchum

Dr. Thomas Wikle

Dr. A. Gordon Emslie
Dean of the Graduate College

ACKNOWLEDGMENTS

Thank you to my advisor, Alyson Greiner,
for her patience and encouragement
through the many stages of this research.

Thank you to Stephen W. Tweedie,
for his generous travel scholarship
which allowed this research to transpire.

A special thank you to Doug Walton,
of the Kerr Center for Sustainable Agriculture,
who provided and translated his statistical research
on organic farming in Oklahoma.

Thank you to all my interviewees
and survey respondents
for your participation in this research.

And finally, thank you Sara,
for everything.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Over the past fifteen years, the popularity of both the farmers' market and organic produce has grown considerably but studies have done little more than mention a connection between the two. Farmers' market studies have focused on general consumer behaviors such as why they shop at and what they expect from the farmers' market. Organic studies have attempted to find significant correlations between organic purchases and certain consumer demographics, especially income and education, but rarely move beyond this baseline. Geographers have scarcely begun to examine the potential wealth of farmers' market research. The purpose of this project is to investigate the connections between farmers' markets and the issues related to organic produce availability.

While a national study of this type would attract many interested parties, this project focuses on one state, Oklahoma, which is currently trying to establish itself in the organic market. Its customers are relatively new to the details of organic produce (i.e., certification, approved farming methods, etc.) and more farmers in the state have been showing an interest in growing organically. Since the state is still in the early stages of organic popularity among consumers, this study will provide information to organic farmers and other agencies interested in promoting organic produce in the state.

This research is can be geographically situated with respect to time and distribution studies. The narrow history on farmers' market distributions and their change over time is discussed in the following section; this study will add to this body of knowledge. Organic farming, on the other hand, has been overlooked in terms of the national distribution of organic farms in relation to other centers of agricultural activity and in regards to the level of demand for each state. The fact that so much of the organic produce sold in Oklahoma is trucked in from states like California suggest that organic farm locations will mimic current conventional farm locations, but as organic popularity rises, this trend may change. In the case of Oklahoma, many are hoping to see local organic farmers meet the in-state demand for organic produce and other products (see Walton 2005; Appel and Oakley 2005; Shulty 2005, Penick and Redhage 2005).

Research Questions

When initiating this research I was interested in a number of questions, such as: Which farmers' markets offer organic produce in Oklahoma? How does Oklahoma organic availability compare to states more established in organic farming, like California? Is there more organic certification in California? Are particular types of farmers' markets more likely to offer organic produce? Does location affect organic availability or farmers' market type? Are consumers satisfied with organic availability in Oklahoma? Why are there so few certified organic growers in Oklahoma? These questions influenced the methodology for this project and guided its focus.

Methodology and Study Area

This project will utilize surveys and interviews to address issues including how Oklahoma farmers' markets compare to those in California, how market types are related

to organic and produce offerings, what opinions farmers have about organic certification, and finally how farmers' market consumers in Tulsa, Oklahoma perceive organic certification and availability. A comparison between the markets in Oklahoma and California, a well established organic state, will demonstrate how Oklahoma's emerging organic culture deviates from this.

To investigate the distribution of organic produce in Oklahoma's farmers' markets, and to compare this availability to California farmers' markets, I will use an organic concentration survey of individual farmers' markets which will rate each market according to the amount and degree of organic produce it offers. A selection of farmers' markets near Tulsa, Oklahoma and Oakland, California are used for this survey. A farmers' market consumer survey will be used in Oklahoma to evaluate consumers' relationships to organic produce, its certification, and its availability. Finally, interviews with government officials, non-profit organizations, farmers, and others related to farmers' markets and organic produce in Oklahoma will guide the discussion of barriers to organic knowledge and produce distribution in the state.

Definitions

Farmers' Market

Direct marketing traditionally involves the sale of produce directly from the farmer to the consumer. Aside from the farmers' market, direct marketing can be found in pick-your-own operations, catalogue sales, and Community Supported Agriculture (CSA), also known as subscription farming (Payne 2002). Pick-your-own farms require the customer to go into the field and literally 'pick-their-own' produce; these are usually advertised as experience opportunities for family outings and are usually limited to one

item – blueberries, peaches, or corn for instance. A CSA involves one or many farmers who deliver a scheduled quantity of produce to each of their subscribed customers; this ensures farmers money and demand early in the season so they can plant accordingly. While CSA's are starting to play a larger role in Oklahoma organic produce, this project will focus on the farmers' market as that is where most consumers make first contact with a farmer.

According to economics professor Thomas K. Tiemann, direct marketing markets in urban areas are of four types: traditional market, public market, the festival market, and the farmers' market (2004). A traditional market is defined by "vendor produced and purchased foods for retail in unrevitalized portions of cities," while a public market offers "the same goods as traditional markets but in new or refurbished buildings or [as] part of urban revitalizations" (Tiemann 2004). Festival markets are the trendier extreme and are "often aimed at tourists [as] part of revitalized urban areas" (Tiemann 2004). For the purposes of this research, I will focus on the fourth type of market, the farmers' market, which is defined as "a common facility or area where multiple farmers/growers gather on a regular recurring basis to sell a variety of fresh fruits, vegetables, other farm products" (Payne 2002, 173) "and often crafts" (Tiemann 2004).

Organic

In general, organic farming refers to a collection of methods that produce crops without synthetic, and often petroleum based, products such as pesticides, herbicides, and fertilizers. For the purposes of this research, organic refers to any produce or product that is grown or processed according to the standards outlined by the United States Department of Agriculture (USDA 2005c; ODAFF 2005b). These standards dictate what

a farmer can put on their land and are the minimum level of adherence for certification. Some farmers may go beyond these minimum regulations but no distinction between the two groups will be made. Farms registered with a USDA affiliated agency will be called "certified organic." Farms making above $5,000 a year selling organic produce are required to be certified growers while farms making less than $5,000 a year are required to be registered as selling organically though they are not considered "certified" growers. Some farmers have decided to remain uncertified and unregistered even though they grow organically; these farmers will be referred to as "non-certified organic growers."

Though research is still inconclusive on the actual benefits to consuming organic products, consumers know they are not consuming synthetic chemicals, GMO's, or sewage based fertilizer (USDA 2005c) and they have the perceived benefit that organic products are more nutritious. Aside from the actual and perceived personal health benefits to consuming organic products, organic farming (when done holistically, often going beyond USDA guidelines) can have positive environmental effects as well. These effects include improving the soil quality, increasing biodiversity, reducing the amount of resistant insects, preventing synthetic chemical runoff that may persist in the ecosystem for years, and many others (Perry and Scultz 2005; Riebel and Jacobsen 2002; Horne and McDermott 2001).

In order to examine the connections between the farmers' market and organic produce, it would be beneficial to have a solid understanding of the factors related to each. The literature review that follows provides an overview of farmers' markets including their historic distribution in America and the services and social functions the farmers' market provides. The review will then examine the regional patterns associated

with produce consumption and availability. This section will also address organic produce and Oklahoma farmers' markets.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Most literature on farmers' markets in the United States falls into four categories. The first category includes government documents from the United States Department of Agriculture and other federal and state-level agricultural agencies. Reports by these organizations cover a variety of information including participation in and administration of individual markets, the physical characteristics of the marketplace, and general farmer and consumer demographics. These reports are a primary source for studies that focus particularly on the economic contribution and agricultural aspects of the farmers' market.

The second category consists of economic analyses of farmers' markets. These studies have looked at consumer expenditures, producer incomes, and the economic impact of farmers' markets in relation to all other food production and sales. The third category of information on farmers' markets has come from minor academics and concerned citizens interested in their local markets. These papers, many of them published in informal venues such as market newsletters and local newspapers, highlight the benefits and eccentricities of a particular farmers' market, or are geared toward rescuing a local farmers' market from closure or critique. Finally, the fourth

category of farmers' market data and literature comes from academics and professionals who have compiled information from each of the categories listed above.

While I have referenced many governmental documents and various economic and academic studies of the farmers' market, I have only used the individual market studies as they appear within the context of the academic writings. The focus of these individual market studies are often too narrow and their similar findings, such as why consumers like to go to the farmers' market, have been collected and analyzed by papers in the fourth category.

The field of geography does not have a large representation in the farmers' market literature, however, three articles[1] have contributed immensely to the discussion of the history and distribution of American farmers' markets, the services and social functions provided by farmers' markets, and the regional patterns of produce consumption and availability in the United States. These three topics structure this literature review.

History and Distribution of American Farmers' Markets

Early History and Traditional Functions

Geographer Jane Pyle (1971) assembled the findings of farmers' market surveys that were sporadically conducted by various agencies between 1880 and 1969. This created a fragmented history of the distribution of farmers' markets in the United States. Her research tells us that before the nations' urban areas became inundated with massive chain supermarkets, the farmers' market played a major role in the distribution of produce and meat in America (Pyle 1971). The early 1800s farmers' markets in the

[1] Farmers' Markets in the United States: Functional Anachronisms by Jane Pyle (1971); The Municipal Farmers' Market As An Urban Service by Don Shakow (1981); Consumption of Fresh Produce in the Metropolitan United States by Barbara Shortridge and James Shortridge (1989). These will be discussed in greater detail later in the review.

nation were created by a political authority to provision an urban population (Pyle 1971) and it is in this time period that the country experienced its first major increase in the number of farmers' markets. The earliest function of the market was to bring goods in from the surrounding hinterland in order to provide for a non-producing urban population (Pyle 1971). Because of this structure, the farmers' market traditionally catered directly to the needs of the local community (Shakow 1981). Low prices were expected because there were no middlemen and very low overhead for the farmers (Pyle 1971). The markets themselves provided a social link between the urban and rural communities and lifestyles (Pyle 1971).

A different trend had emerged by 1880. During the end of the nineteenth century many middlemen infiltrated the market creating retail operations. Over time the farmers' market failed as a cheap source of produce and market numbers started to decline (Pyle 1971). Gradually, the overall decline slowed and corrected itself—in 1918 the market numbers were similar to 1880 levels but the presence of markets shifted from the East to the South and Midwest (Pyle 1971). In 1918, two-thirds of all large cities maintained one or more farmers' markets (Pyle 1971).

Farmers' Market Decline

As urban areas grew in the early 1900s, farmers' markets became decentralized to accommodate neighborhoods throughout each city. However, farm lands were also beginning to experience urban and suburban encroachment. According to Pyle, by 1946, the importance of the farmers' market to food distribution had greatly deteriorated (Pyle 1971).

Farmers' market decline accelerated after World War II as a result of four forces:

improved transportation and refrigeration techniques, the encroachment of the suburbs on agricultural land, the rise of grocery chains, and attempts by municipal officials to convert market districts to uses with higher tax profits (Shakow 1981). These factors were compounded by a suburban housing boom caused by the massive number of returning veterans (Greene 2004). This trend continued throughout the 1950s, 60s, and 70s as more urbanites moved to suburban areas (Greene 2004). This de-urbanization increased the encroachment of developed areas onto farmland and added to the decentralization of cities. Figure 1 below illustrates the decline of Pike Place Market in Seattle, Washington during this period. It graphs the number of sellers permits given to farmers between 1925 and 1978.

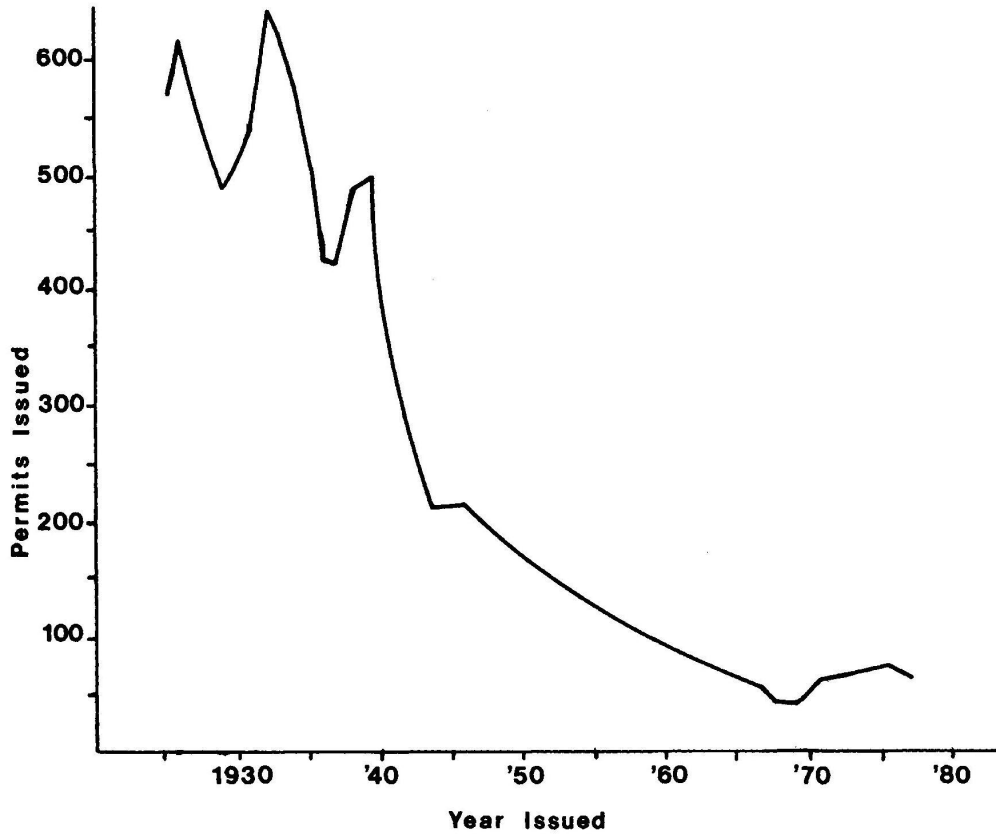


Figure 1. Farmer permits issued at Pike Place Market, Seattle 1925-1978 (Shakow 1981, 71).

Major decline during and following World War II is clearly visible. The illustrated drop in permits, combined with the other factors of decline listed above, suggest that many of the producer-to-consumer farmers' markets had disappeared. In fact, many had become retail and wholesale markets (Pyle 1971). Retail markets, as discussed in the 1918 market trends, meant that produce was available to the consumer but it was not as cheap as it had once been. Wholesale markets only sold produce in bulk and the emerging grocery chains were their main clientele.

Services and Social Functions Provided By Farmers' Markets

Today's Farmers' Market Renaissance

Despite the mid-century decline in market numbers, today's farmers' markets have seen a great revival. Between the mid-1980s and the mid-1990s farmers' market popularity experienced a renaissance. In 1976, Public Law 94-463, the Farmer to Consumer Direct Marketing Act was passed and is credited by Allison Brown (2002) as the beginning of the current growth in farmers' markets. In 1985, an article in *Americana* magazine boldly stated that "farmers' markets are no longer falling victim to supermarkets" (Colley 1985, 39). The steady comeback of farmers' markets continues and they are still advertised as capable of meeting a variety of social and economic needs.

Because there was such a lapse of time with no great farmers' market economy (about 40 years), there was very little national research done on the topic. The studies that were conducted focused primarily on individual markets throughout the nation (Brown 2002; Payne 2002). The fact that many of these studies occurred since the revival began in the mid-1990s illustrates the lack of serious social and academic interest until quite recently.

The change in farmers' market growth in the U.S. illustrates the tremendous increase in popularity. In 1970, markets totaled 340, in 1994 they had reached 1,755 in number, and in 2004 there were over 3,700 markets nationwide (Brown 2002; Payne 2002; USDA 2005a). Tim Payne (2002) illustrates the youth of many of these markets when he explains how the 2000 USDA Farmers' Market Survey revealed that 27% of markets were less than five years old. Another indicator of farmers' market growth and interest can be seen in the frequency of farmers' market census taking; between 1950 and 1994 there was only one farmers' market census but between 1994 and 2005, there have been five (Brown 2002; Payne 2002; Burns 1997; USDA 2005a).

Given this growth, Brown asks: "Why are farmers' markets successful in a developed market economy where consumers and farmers have many options for buying and selling food?" (2002, 167). She answers by noting that the success is a result of changing consumer interests and changing economies of agriculture (Brown 2002). Changing consumer interests parallel the rise in the purchase of produce (Shortridge and Shortridge 1989) and included the desire on the part of consumers to be more connected with the source of their food (Brown 2002).

Various activist and concerned citizen groups are currently upset about the specific environmental and globalization issues related to modern farming methods, as typical of Green Revolution[2] agriculture. They might respond that the changing economy

[2] The Green Revolution became the new face of agriculture in the 40s and 50s. Its original goals were to grow more food in order to feed the hungry people of the world. However, its constant use of expensive and synthetic fertilizers, herbicides, and pesticides, required increasing the levels of each of these inputs to offset their effects. Currently, many activists argue that this makes poor farmers dependent on something that cannot be afforded in increasing quantities. While initially higher crop yields resulted from Green Revolution methods, it has been shown many times that the methods involved are not sustainable, economically or environmentally, long term. For the purposes of this paper Green Revolution methods are collectively referred to as 'conventional' agriculture.

of agriculture corresponds to the corporate takeover of farms. These groups specifically refer to the industrialization of agriculture, the loss of small farms and rural communities, and the desire on the part of the consumer to interact with the grower and find an alternative to conventional agriculture (Horne and McDermott 2001).

Successful farmers' markets need to fulfill the needs of the consumer and the vendor. In fact, current market research findings correspond to many traditional market functions: producers often have the farmers' market as their only outlet to the consumer while consumers like the quality and price, enjoy attending the farmers' market, and think it is socially beneficial to do so (Brown 2002). Modern farmers' markets continue to perform social functions. They provide a touch of the rural in the urban, they meet the consumer's demand for freshness, and offer the "real or assumed advantage of dealing directly with the producer" (Pyle 1971, 197).

Many agricultural economists believe that farmers' markets only affect a localized area and are therefore of little importance (Brown 2002). However, the tremendous growth of farmers markets may change this attitude in the future. Current studies point to a number of areas in which the farmers' market has had a direct or indirect economic impact that extended beyond the market itself. Data from a national survey conducted by the USDA in 2000 show that farmers' market consumers spend an average of $17.30 each week. With weekly attendance at 2,760,000 (Payne 2002), sales total over $47 million every week. Consumers often benefit from the secondary impacts of the market. In many cases, urban farmers' markets are able to offer a cheaper supply of produce in low-income neighborhoods (Shakow 1981). By 1970, 80% of retail produce cost was attributed to the costs of assembly and distribution (Shakow 1981). The availability of a

farmers' market makes produce easily accessible and means less money needs to be spent on food, resulting in an increase in the quality of life for this population. Another secondary economic impact is illustrated by studies which found that customers attending the market also spent money in retail shops, businesses, and restaurants near the market grounds (Brown 2002). Additionally, many markets are large components of local tourism (Colley 1985) though no detailed examination of this has yet been published.

Social services must also be taken into account when discussing the value of farmers' markets. Economic geographer Don Shakow (1981) has said that a continued revival of the farmers' market could be economically beneficial to farmers, resulting in the continuation of agricultural activity in the region and stronger rural communities. Sustained farming activity is thought to directly contribute to the preservation of open space (Brown 2002) which in turn becomes a guard against urban sprawl, leading to a higher quality of life in both urban and rural areas. Other social benefits take the form of "good feelings" on the part of the consumer. Consumers feel that there is a friendlier atmosphere at the market than at the grocery store and many urbanites feel that "just being there brings them closer to the earth" (Colley 1985, 41). Whether scientifically proven or not, many consumers also believe that the produce acquired at a farmers' market is both fresher and has a higher nutrient content (Colley 1985; Govindasamy, Italia, and Adelaja 2002).

It is not just the consumer who benefits from the urban service of a farmers' market—producers do too. The farmers' market is an ideal place for an enterprising individual to turn an interest into a business. Because of the warm social atmosphere, the low monetary barriers to entry, and the little effort required to start selling, many people

become full and part-time farmers in addition to their current occupations or once they have retired (Brown 2002). In the late 1980s, advertisements for farmers' markets encouraged the retired, unemployed and underemployed to "supplement their income and their diet by planting fruits and vegetables" (ODA 1991, 1).[3] Many full-time farmers acquire a majority of their agricultural income from the farmers' market (Brown 2002). The farmers' market also functions as an important product and produce testing ground; some markets are the only source for such things as edible flowers and other culinary specialties (Brown 2002). Until quite recently, farmers' markets were the most visible source of organic produce (Brown 2002); now, however, organic produce is more visible in large natural food grocery chains like Whole Foods and Wild Oats. Overall, farmers' markets and the demand for organic produce have grown in tandem (Kremen, Greene, and Hanson 2002; Brown 2002) though it has largely been undocumented by academe.

Types of Farmer's Markets

Economics professor Thomas K. Tiemann conducted a study involving 61 markets in 7 states (2004). The foremost result of this study was a classification of farmers' markets into two categories: the indigenous market and the experience market. Each of these is a farmers' market, as defined above, but he argued that they occupy a different type of suspended space with regard to various levels of regulation (Tiemann 2004). Specifically, indigenous markets are very lax in creating or enforcing regulations for the farmers to follow, whereas experience markets have a pronounced structure that relates to its level of regulation Beyond regulation, the market types differ in other qualitative ways such as their setting, roles, and clientele. Table 1 below highlights the

[3] The exact date of this publication is unknown but it was received by Oklahoma State University in 1991 from the Oklahoma Department of Agriculture.

characteristic differences between the two types. These types will be used to classify and discuss farmers' markets included in this study.

Indigenous Markets	Experience Markets
Small grounds/town location	Large grounds
Low price	High price
Traditional regional produce	Offer latest foods and a wide variety
Offerings visible from street	Have to enter market to see offerings
Older patrons	Younger buyers and sellers
Tents	Elaborate displays
No crafts	Crafts and other goods
Few rules or regulations	More regulations
Easy to show up and sell	Vendor membership is often required
Provide part of vendor's income	Promote local produce
Seasonal	
Very small	
Most common type	

Table 1. Characteristics of the indigenous and experience markets (Tiemann 2004).

As discussed earlier, most farmers' market research has remained at the level of collecting basic market statistics. The use of market data to create these kinds classifications is an example of the direction that farmers' market researchers need to move in if they intend for their studies to remain relevant.

Regional Patterns: Produce Consumption and Availability

Produce Consumption

One reason given for the current success of the farmers' market has been the increase in produce consumption over the past decade (Govindasamy, Italia, and Adelaja 2002). For example, in a study of 21 New Jersey farmers' markets 75% of 336 respondents said that they had increased their intake of fresh produce in the last 5 years

(Govindasamy, Italia, and Adelaja 2002). In particular, this growth has been visible in the middle class (Brown 2002). Americans have had a renewed interest in eating more fresh fruits and vegetables, mainly to avoid disease and illness as advocated by such firms as the National Research Council and the American Cancer Society, but also for issues regarding weight control (Shortridge and Shortridge 1989). The campaign for the consumption of fresh produce for disease prevention and weight control has grown considerably over the last decade. The early 1990s saw the societal promotion of "5 a day" or even "7 fruits and leafy greens" a day by various health and disease awareness organizations. In more recent years the US government has issued large-scale reports on the endemic number of overweight Americans;[4] even Sesame Street is tackling childhood obesity by teaching kids about exercise and healthy eating while making its star characters ask for broccoli and telling Cookie Monster that he cannot have as many cookies as he wishes (Inskeep 2005).

A specific reason the farmers' market has become the recipient of so much attention in recent years can be found in this statement: "quality produce, not meat, is now the most important influence on the choice of supermarket by the consumer" (Shortridge and Shortridge 1989, 79). While the Shortridge and Shortridge (1989) study is dated, its findings are still relevant. The following statistics further reinforce this link between market choice and the growth of the farmers' market: 87% of respondents to a study of 21 New Jersey farmers' markets said that the availability and quality of fresh produce affected their decision of shopping location, 98.5% of survey participants expected a higher quality of produce at the farmers' market, 56% expected more variety

[4] For more information on the increase in the number of overweight Americans, see the Center for Disease Controls' obesity maps.

at farmers' markets than found in supermarkets, and 56% believed the farmers' market produce to be of lower price (Govindasamy, Italia, and Adelaja 2002).

As revealed in the Shortridge and Shortridge study (1989), the distribution of the amounts and types of produce consumed vary considerably by region. While the actual distributions may have changed since the study, their theories behind the distribution patterns remain valid. Their study offers three hypotheses regarding the variety of produce available in an area and the amount of produce that is consumed: 1) the abundance of locally grown foodstuffs should lead to a higher total consumption (i.e., the San Francisco-Oakland and Los Angeles areas in California should have high consumption rates due to the abundance of produce found in the Central Valley), 2) ethnic diversity in an area leads larger produce variety availability but it does not necessarily mean that more is consumed, 3) the cultural tradition of produce consumption in an area affects consumption rates—if an area has never really consumed high levels of fresh produce then they are likely to continue that pattern (Shortridge and Shortridge 1989). Future patterns of produce consumption, and therefore farmers' markets, will likely relate to and reflect observations such as these. Since this article was written sixteen years ago, it would be interesting to see if the areas they pointed out as heavy produce consumers correspond with the amount of farmers' market growth in those areas.

Demographics

For a business to succeed, it has to address the needs of the population it serves. Since the farmers' market draws customers primarily from the neighborhood where it is situated, the location of the market has a direct impact on the composition of the consumer base that attends it (Brown 2002). In turn, this consumer base helps determine

food prices at the market (Shakow 1981). For instance, in more affluent neighborhoods we would expect to see higher prices at the farmers' market than in lower income neighborhoods.

Due to the characteristics of low-income urban areas, the scarcity of grocery outlets and produce options for example, the availability of a farmers' market is likely to provide a tremendous service to individuals who live in low-income areas. Indeed, one traditional role of the farmers' market was to provide lower food prices for low income urban consumers (Shakow 1981). This is extremely important since low income consumers look for grocery outlets close to home (Shakow 1981) and there is a scarcity of supermarkets in most inner city areas (Burns and Johnson 1996). Farmers' market literature would benefit from linking the fluctuating growth and decline of particular markets with changes such as gentrification, urban renewal, and slum formation in neighborhoods over time.

Organic Produce

Though the popularity of the farmers' market has waxed and waned in different places for a variety of reasons (Pyle 1971), the current popularity is both partly a result of and has also contributed to the organic movement. Allison Brown tells us that "the role farmers' markets have played in the development of markets for exotic and organic food is acknowledged primarily by food writers but [has not] been confirmed by research" (2002, 173). This lack of research demands attention. As food security and purity are growing concerns in the public (Colin 2003), the demand and availability of organic produce is also likely to grow. Even though a majority of organic food is bought in health food stores, a large number of organic growers sell at some kind of farmers'

market (Conner and Christy 2002). Because of this, increasing security and purity concerns will have a direct effect on farmers' markets. In fact, there is now discussion in the literature about how the growth in organic availability and consumption has paralleled the growth of farmers' markets themselves (Kremen, Greene, and Hanson 2002; Brown 2002). In addition, the growth of organic products has itself been significant: in all food venues, organic product sales have had 20% or greater growth every year since 1990 (Conner and Christy 2002; Colin 2003; ERS USDA 2005).

Many organic studies have pointed to the influence of a variety of demographic factors, though none of the studies agree on what is the most important factor and few studies have been able to claim any factor at a level of statistical significance. Many small scale studies have demonstrated a positive correlation between education and the tendency to purchase organics, but national studies point to households with higher income as the group most likely to purchase these products (Thompson 1998). We can make the assumption that higher education and higher income reflect the same consumer group. Yet, there have been significant exceptions to this. One such example is a group of consumers labeled the 'True Naturals' in a study performed by health food giant Whole Foods. This group purchased organic products fairly regularly despite having a higher-than-average presence of household incomes below $25,000 (Thompson 1998).

Though research has yielded many contradictory and incomplete studies on the human and environmental health implications of the genetically modified organisms (GMO's) that are beginning to dominate conventional agriculture, organics have become the main source of GMO-free food. The Conner and Christy study (2002) revealed that 85% of respondents did not want to allow GMO's in the USDA organic standard.

Despite the attempts made by agribusiness interests, GMO's were not allowed in the USDA's final ruling for organic certification standards (USDA 2005c).

Many consumers of organic produce are also concerned about the physical environment, their personal health, and the health of the communities in which they live. Yet, a point of contention rests with the idea that many of these consumers belong to a higher income bracket and are highly educated; they have been likened to food snobs with twisted politics. One journalist boldly states, "In their world view, food is no longer something to be enjoyed, it is something to be feared and understood through a complicated set of new rules that acknowledge the global implications in every plate of pate" (Crister 2001, 2). While this group is well schooled on the ideas of "locally grown, seasonally grown, sustainably grown," Crister says it is news for a large number of Americans, especially the poor, the working class, and the struggling middle class (2001). He goes on to comment that for these low-income Americans produce has grown in selection, taste, and availability (Crister 2001, 3) due in part to the agribusiness practices which many "natural foodies" resist. This disconnect of access to and education about naturally grown produce needs to be addressed if environmental supporters and local food advocates are to achieve their goals of locally available sustainable produce production.

Complications can be expected when addressing these gaps between the foodie with more education and the working class American. Complications related to the educational disconnect can be seen in the example of the Los Angeles public school system. The Urban and Environmental Policy Institute introduced farmers' market salad bars to many public school cafeterias with the intention of prioritizing organics. A Los

Angeles Unified School District nutrition director reported that "the kids take away a skewed—and in their economically deprived world—unattainable ideal …and end up with the false notion that the only [produce items] that are truly safe and conscionable to eat are organic" (Crister 2001, 7). Organic produce advocacy and research needs to pay particular attention to issues regarding demographic accessibility.

The West Coast Movement

Geographers Barbara Shortridge and James Shortridge examined the patterns related to the consumption of fresh produce in the United States and found the West Coast to have a large impact on American foodways (1989). Though foodways have considerable amounts of regional expression, the Shortridge and Shortridge data reinforce the 'sophisticated palate' stereotypes of San Francisco-Berkeley and Los Angeles. In particular, California is seen as the hearth of the nutritional subculture (Shortridge and Shortridge 1989). Aside from eating more produce, national studies show that consumers in the West have a higher propensity to consume organic products (Thompson 1998). This makes the West Coast, and California in particular, an important gauge with which to measure the progress of the organic movement and the growth in farmers' markets across the country. For this reason, California is used as a ruler to measure the status of farmers' markets and organic produce in Oklahoma.

Oklahoma and the Farmers' Market

The data portraying the historical progression of farmers' markets in Oklahoma is inconsistent and scattered. First, a few pieces of information can be gleaned from Pyle's (1971) study of the distribution of farmers' markets prior to the 1970s. Her 1918 map of market locations indicates two open markets in Oklahoma with one near Tulsa and one

near Oklahoma City (Pyle 1971). The 1946 map shows three markets in Oklahoma; a wholesale market in Tulsa and both wholesale and retail markets in the Oklahoma City region (Pyle 1971). The next mention of Oklahoma markets comes from literature distributed by the Oklahoma Department of Agriculture. In 1983, one publication listed ten markets in Oklahoma (ODA 1983). In 1991, there were 33 markets listed (ODA 1991). However, these publications may incorrectly portray the actual number of farmers' markets in the state as there does not appear to have been any kind of research directed at counting markets in more rural areas, which are most likely very indigenous markets as described by Tiemann (2004).

In terms of markets that are open for business in Oklahoma today, three different inventories list three different values for the total number of markets in the state. The varying ways in which Tulsa is accounted for by each inventory provides an example of the inaccuracy of even current data. The guide published by the Oklahoma Department of Agriculture (2004) lists 24 markets with one in Tulsa at North 56th Street, the USDA (2005b) lists 25 markets in Oklahoma with the South 15th Street (Cherry Street) market also listed for Tulsa, the Chef2Chef (2005) website lists 35 in Oklahoma with both the North 56th Street and South 15th Street locations in Tulsa.

Aside from inventory data, the 1983 and 1991 publications by the Oklahoma Department of Agriculture provide information on some of the reasons why the farmers' market was promoted. In 1983, consumers were told that the farmers' market was a good deal because the produce was cheaper and fresher (ODA 1983). The market was also advertised as an "experience" for the family. Producers were told that the market was a good opportunity because they could supplement their income, have an outlet for their

goods, and increase connectivity in the farming community (ODA 1983). In 1985, the ODA revived the Farmers' Market Program in hopes of boosting the weakened agricultural economy (ODA 1991). Farmers at the time were encouraged to diversify their operations in hopes of producing goods (especially produce) in-state that, at the time, were being brought in from other states. In the 1991 publication, consumers were told of the health benefits of eating produce and were lured with phrases like "it's the way your grandparents and great grandparents shopped" and "your food dollar is staying close to home" (ODA 1991, 1). They were also told that organic produce was often the same price as conventional produce but that it may not be labeled as organic so you would have to ask (ODA 1991). Clearly, little beyond a rough inventory has been widely published on Oklahoma's farmers' markets.

The goal of this research is to expand our knowledge of farmers' markets in Oklahoma. In particular, this study focuses on the market types as described by Tiemann (2004) and the availability of organic produce at each farmers' market. The following section describes the methodology used for this research.

CHAPTER III

METHODOLOGY

Introduction

As farmers' markets and organic consumption have experienced sustained national growth during the last decade, it is reasonable to assume these patterns will be found in Oklahoma as well. Yet, unlike states such as California, New York, and Wisconsin, Oklahoma is in the early stages of its organic growth both in terms of consumer availability and the number of acres being farmed organically. For this reason, it is worth researching the current state of farmers' markets and organic produce in Oklahoma so that parties interested in expanding either cause will know where the current activity is located, what has been done, what needs to be done, and what consumers are hoping will be done. We can situate these findings within Tiemann's (2004) farmers' market classifications, the argument for organic certification regulation, and regional and consumer demographics.

To investigate the distribution of organic produce in Oklahoma, and in its farmers' markets, this research will utilize three main methods: an organic concentration survey of individual farmers' markets, a farmers' market consumer survey, and expert interviews with various agencies and persons involved in organic production or

advocacy. Each of these methods followed the human subjects research policies outlined by the Institutional Review Board of Oklahoma State University (see APPENDIX A through D for the IRB application and modification approval letters as well as the consumer consent forms).

The farmers' market organic concentration survey was designed to address the questions of which farmers' markets in Oklahoma offer organic produce, how organic availability in Oklahoma differs from that in an established organic state like Oklahoma, whether there the levels of organic certification in Oklahoma compares to California, whether farmers' market type relates to the level of organic produce availability, and whether location affects farmers' market type.

The farmers' market consumer survey addresses the question of consumer satisfaction with organic availability in Oklahoma, in particular, it focuses on the Cherry Street farmers' market in Tulsa, OK in relation to organic availability in the city. Finally, interviews with governmental, non-profit employees, and farmers are brought together with the answers to the previous questions to address the issues around why there are so few certified organic growers in Oklahoma.

Farmers' Market Organic Concentration Survey

The goal of the farmers' market survey[5] was to find the percentage of organic vendors present at each farmers' market. Farmers' markets involved in this portion of the research were selected by proximity to Oakland, California and Tulsa, Oklahoma. Oakland was used because the Bay Area provides access to a large variety of farmers' markets in California and because of my familiarity with the area and the resources available to me. Tulsa was used for Oklahoma as that is where I currently reside. During

[5] Reproduced in Appendix E.

the selection of farmers' markets, I was mindful to include a reasonable mix of urban, rural, and suburban locations, as well as isolated cities[6] and embedded cities.[7] Markets were also selected by hours and days of operation with respect to other open markets in the vicinity by utilizing the California Federation of Farmers' Markets website (2005) and the Oklahoma Farmers' Market Guide (ODA 2004). For instance, on Saturday the Yuba City, Oroville, and Chico markets are open and are close enough to each other to enable consecutive visits. In California, I compiled a list of markets from south central Modesto to north central Chico and from coastal Point Reyes to central Sacramento. In all, I visited 10 markets in California. The markets in Oklahoma were selected relative to Tulsa, and were visited over a number of weekends. In all, I visited 10 markets in Oklahoma dispersed from eastern Muskogee to central Oklahoma City and from south central Norman to north central Stillwater.

At each market, I took qualitative notes on the weather, attendance, market site, and neighborhood location. While the focus of this survey was on the produce offerings at each market, notes were taken for each of the other stalls present, for instance, bakers, horticultural offerings, soap makers, crafts, meat, eggs, and cheese booths. Notes were taken for each stall on what was being offered and if there was a sign advertising the produce as organic. I approached each vendor, explained that I was conducting thesis research, and asked if their produce was grown organically. If the answer was yes, I asked the follow-up question "are you certified or have you thought about getting certified." If the answer was no, I inquired whether the farmer had heard about organic farming or had ever tried any of its methods.

[6] Such as Chico, Stillwater, and Monterey.
[7] Such as Bethany, Oakland, and Sacramento.

I focused particularly on extracting the vendors' opinions on the certification regulations surrounding organic farming and whether or not the farmer was actually growing organically. For instance, if the farmer claimed to be organic and was not certified, I asked specific questions about the methods the farmer used to control pests, weeds, and to feed plants. A farmer may use organic compost and rabbit droppings and hand-pull weeds or mulch over weeds but if they mentioned something like Sevin dust (a strong, synthetic, and commonly used pesticide) the researcher made notes that the grower was not in fact organic; this, however, was a rare occurrence. Often times, the first question was enough to elicit the various responses and opinions that I was looking to address; in many cases, these introductory questions led to conversations with the market vendor.

Once the vendor survey was completed, I created four vendor types based on responses to the questioning described above. Vendors were assigned to conventional farmer, partial farmer, non-certified organic farmer, and certified organic farmer categories. The conventional farmer category included those practicing methods similar to Green Revolution agriculture; they use synthetic pesticides, herbicides, and/or fertilizers and, for the most part, had little or no knowledge or desire of implementing organic methods. In cases where the produce was being offered as resale or where the seller was a hired employee and information on the farming methods were circumspect, the vendor was categorized as a conventional grower.

Partial farmers were selected based on their knowledge and implementation of a limited set of organic methods. For instance, they may use something like integrated pest management combined with an organic garlic spray to control bugs and never spray

herbicide, but they use synthetic fertilizers. These are the hybrid farmers who don't fall into either conventional or organic farming categories.

Non-certified organic farmers are growing organically, according to their responses to my specific questions, but have chosen to remain uncertified or have not yet been cleared for certification under USDA guidelines. Finally, certified farmers are registered as organic growers with some certification agency whether under the United States Department of Agriculture (USDA 2005c) or an internationally recognized agency like Quality Assurance International. Totals were taken for each type at each farmers' market and converted into a percentage representation for that location; these are discussed in the Findings chapter.

Farmers' Market Consumer Survey

Customers at the Cherry Street Farmers' Market in Tulsa, Oklahoma, were asked to fill out the Farmers' Market Consumer Survey used in this research (found in APPENDIX F). Despite the lightning and intermittent rain, 78 surveys were collected on the last day of the Cherry Street Markets' 2005 season. The goal of the surveys was to provide statistical information about consumers at the market in order to make connections between their demographics, shopping patterns, and opinions about organic produce. The first part of the survey focused on demographics and asked customers what zip code they lived in, sex, age, whether they own their home, education, number of children, number of people in their household, and income. The remaining portion of the survey asked about the overall quantity of organic produce purchased, how much of it came from the farmers' market, how concerned consumers are that the organic produce is certified, whether they would be satisfied with alternative certification agencies (as

opposed to the USDA), whether they trust the seller, where else they buy their organic produce, and how satisfied they are with organic availability at the market and in Tulsa. The question addressing the consumer's concern with organic certification was taken, verbatim, from a Kerr Center survey done in 2001 (Kerr Center 2005)—this would allow a direct comparison between the results of the two surveys on this point. Statistics were derived from the survey totals to describe the typical Cherry Street shopper and to supplement the discussion of organic farming in the state of Oklahoma.

Interviews

The material gleaned from six interviews makes up the Oklahoma farmers' market and organic produce expert contribution. Three of the interviews were over two hours long. I also attended an organic farm field day near Bristow, Oklahoma, geared toward demonstrating the various components of an organic farm to the attendees. Table 2 below provides a description of each of my primary participants.

These interviewees graciously provided me with information they had on farmers' markets and organic production in Oklahoma; their comments inform and enhance the Findings chapter. Finally, I spoke with farmers selling their products at the many markets used in this research. These short and informal interviews were done during the organic concentration survey described above. Though these interviews were brief, the opinions of non-certified organic farmers on organic certification were most poignant.

Interviewee	Organization/ Occupation	Notes
Chad Goss	Organic Coordinator in the Food Safety Division of the Poultry, Egg and Organic Section of the Oklahoma Department of Agriculture (ODA)	The ODA is the only USDA authorized organic certification agency in the state and Chad Goss manages the certification operation (Goss 2005).
Mike Shulty	Farmers' Market Marketing Department of the Oklahoma Department of Agriculture	Among other things, he helps interested parties get new markets started and is currently compiling an inventory of farmers' markets in the state of Oklahoma along with their contact and location information (Shulty 2005).
Mary Penick and David Redhage	Work for the Kerr Center for Sustainable Agriculture	The mission of the Kerr Center focuses on promoting economically, environmentally, and socially sustainable farming methods (Horne and McDermott 2001)—whether or not they are organic (Penick and Redhage 2005).
Doug Walton	Work for the Kerr Center for Sustainable Agriculture	Doug is currently developing a report illustrating the economic opportunities for organic farming in Oklahoma (Walton 2005).
Kim Smith	Cherry Street Farmers' Market Manager	She is responsible for opening and closing the market, managing member dues, and advertising the market to customers and producers (Smith 2005).
Emily Oakley and Michael Appel	Owners of Three Springs Farm	They participate in the Cherry Street Farmers' Market and are in their second of three transitional years required to certify their farm as organic (Appel and Oakley 2005).
Nuyaka Natural Farm		Had a publicly open field day hosted by its owners James and Jennifer Cooper and sponsored by the Kerr Center and the USDA Risk Management Agency. Farmers and other parties interested in organic methods went to the farm for a demonstration of the various components of Nuyaka, whose owners also participate in the Cherry Street market (Nuyaka 2005).

Table 2. Interviewee Descriptions

CHAPTER IV

FINDINGS

Farmers' Market Organic Concentration Survey

The purpose of this survey is to illustrate the percent of each produce type (conventional, partial, non-certified organic, and organic as described in the Methodology) available at the farmers' market locations. In total, this survey addressed 10 markets in Oklahoma and 7 in California. Of the 10 California markets originally selected and visited, 3 were omitted as the market could not be analyzed: the Oroville market was canceled for a car show, the bystanders at the site of the Woodward market were not sure if the market had been moved or if it had not yet started for the season, and the Salinas market was not open on the scheduled day as posted on the California Federation of Farmers' Markets website (CFFM 2005). Figure 2 below shows the percentage of each produce type present at the 7 California farmers' markets. Figure 3 below illustrates these percentages for the 10 Oklahoma farmers' markets included in this survey. Farmers' markets used in this research provided 84 produce vendors from Oklahoma and 92 from California. A description of each farmers' market and its offerings appear later in this discussion.

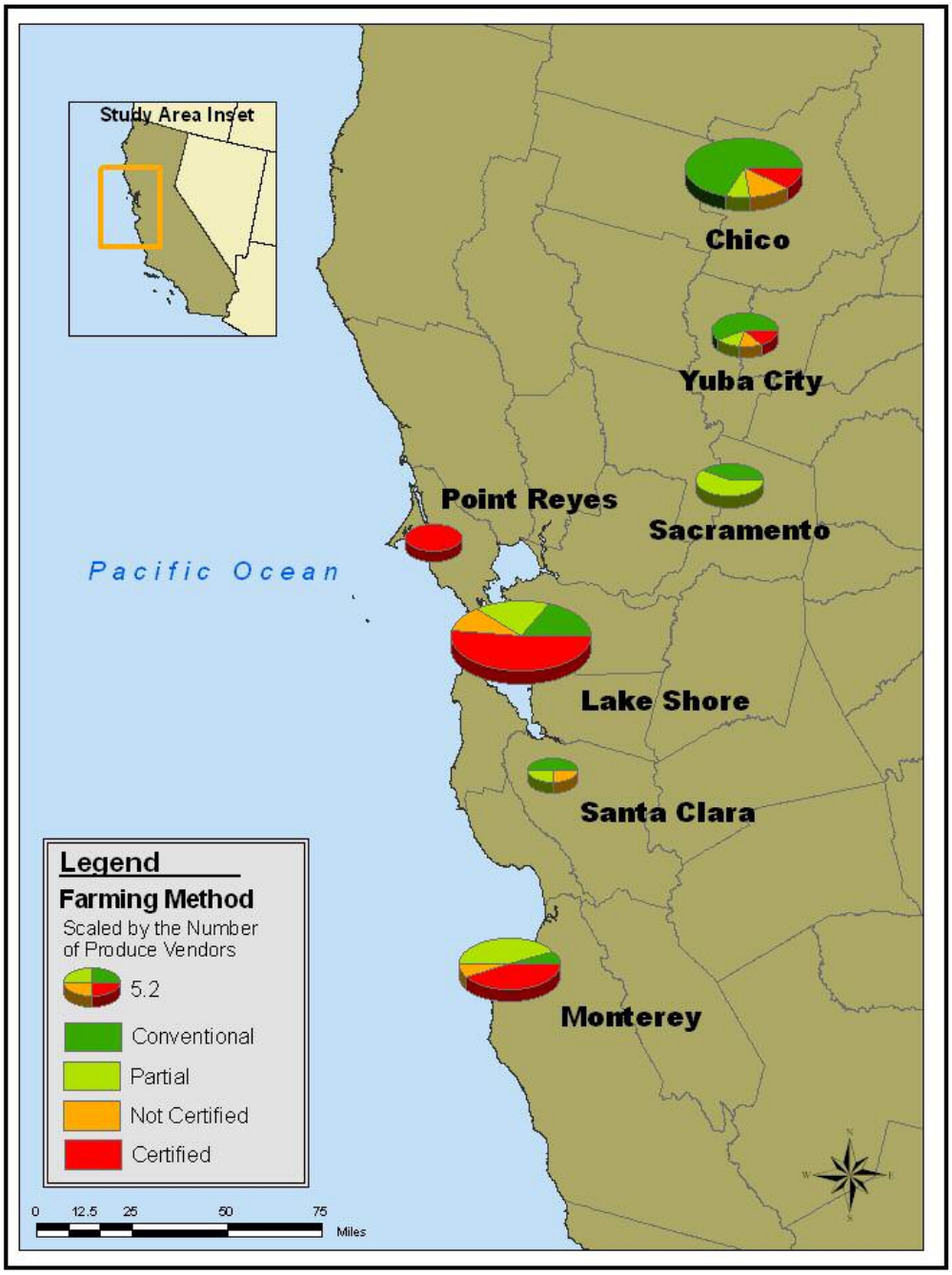


Figure 2. California Markets: Produce Vendor Farming Methods

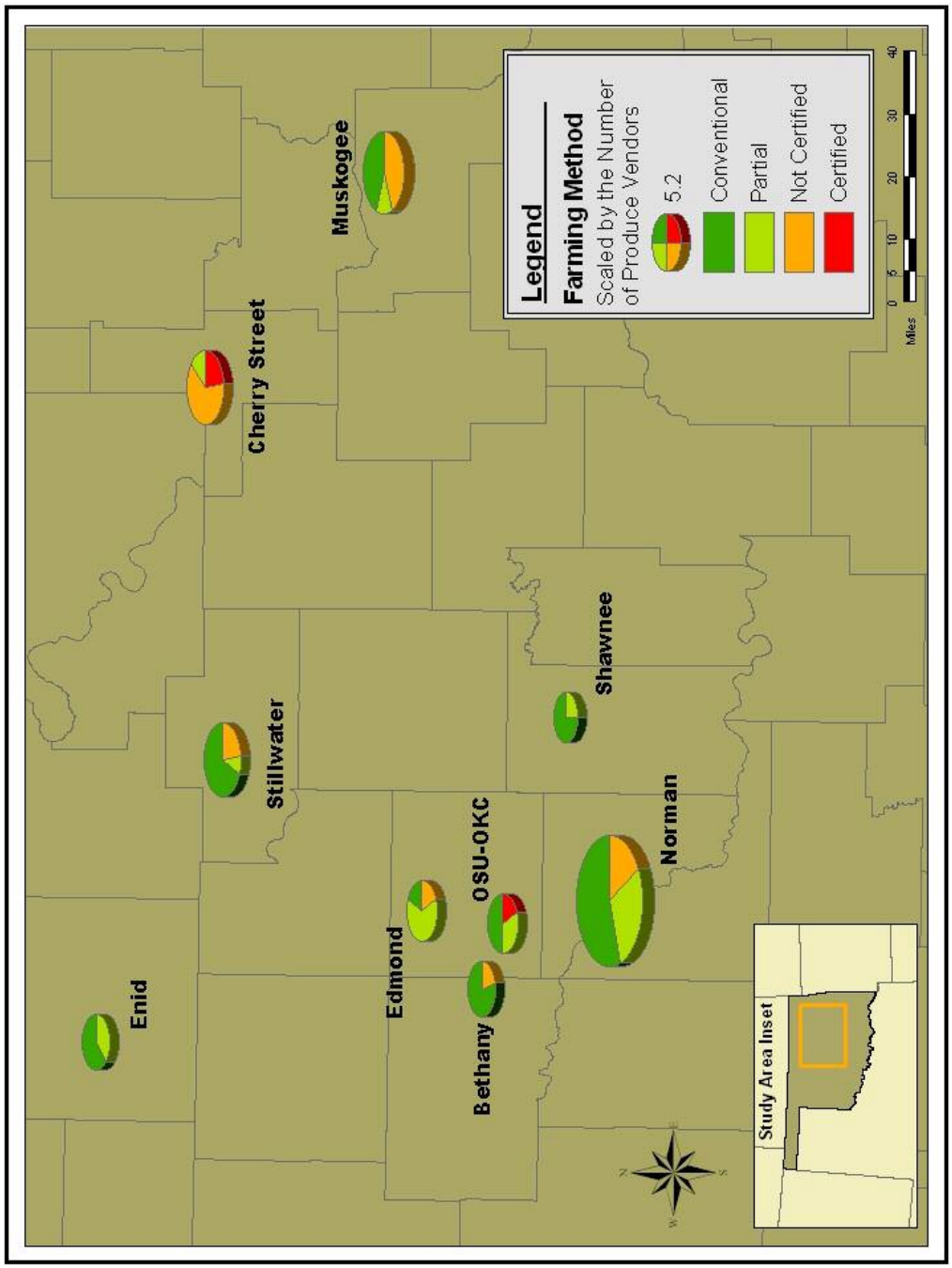


Figure 3. Oklahoma Markets: Produce Vendor Farming Methods

The number of each vendor type and the results of the organic concentration survey can be seen in Table 3 below. Shaded blocks highlight the type of produce with the highest percent available at each market. From this distribution we can see that farmers' markets in Oklahoma are more likely to offer conventional produce whereas California markets have more variation in their dominant offerings, including some that are dominated by certified organic produce.

Market	Conventional	Partial	Not Certified	Certified	Total	Conventional	Partial	Not Certified	Certified
Stillwater	6	1	2	0	9	66.7%	11.1%	22.2%	0.0%
Shawnee	3	1	0	0	4	75.0%	25.0%	0.0%	0.0%
Enid	3	2	0	0	5	60.0%	40.0%	0.0%	0.0%
Tulsa North	0	0	1	0	1	0.0%	0.0%	100.0%	0.0%
Cherry St.	0	1	6	2	9	0.0%	11.1%	66.7%	22.2%
Muskogee	5	1	5	0	11	45.5%	9.1%	45.5%	0.0%
OSU/OKC	3	2	0	1	6	50.0%	33.3%	0.0%	16.7%
Bethany	4	0	1	0	5	80.0%	0.0%	20.0%	0.0%
Edmond	1	4	1	0	6	16.7%	66.7%	16.7%	0.0%
Norman	15	9	4	0	28	53.6%	32.1%	14.3%	0.0%
Total	40	21	20	3	84	47.6%	25.0%	23.8%	3.6%
Lake Shore	5	7	3	16	31	16.1%	22.6%	9.7%	51.6%
Chico	15	2	3	2	22	68.2%	9.1%	13.6%	9.1%
Monterey	1	7	1	7	16	6.3%	43.8%	6.3%	43.8%
SantaClara	2	1	1	0	4	50.0%	25.0%	25.0%	0.0%
Yuba	4	1	1	1	7	57.1%	14.3%	14.3%	14.3%
Sacramento	3	4	0	0	7	42.9%	57.1%	0.0%	0.0%
Point Reyes	0	0	0	5	5	0.0%	0.0%	0.0%	100.0%
Total	30	22	9	31	92	32.6%	23.9%	9.8%	33.7%

Table 3. Concentration Survey Results

Based on the markets included in this study, Table 4 below shows the percent of organic and non-organic produce available at each farmers' market. The non-organic column was created by combining conventional and partial farming method growers together while the organic column was created by grouping non-certified organic and certified organic growers together. Including non-certified organic farmers with certified

organic farmers provides a picture of how many farms are implementing organic methods in the state. Oklahoma markets offer 27.4% certified and non-certified organic produce whereas California offers 43.5%.

State	Non-Organic	Organic
Oklahoma	72.6%	27.4%
California	56.5%	43.5%

Table 4. Organic Percentages by State (Certified and Non-Certified)

We can be strict in our classification of organic produce and only include those vendors who are certified by a recognized agency. Table 5 below uses a strict classification for organic produce. The column labeled "All Non-Cert" includes conventional, partial, and non-certified organic growers while the "Certified" column includes only those growers who are certified with a recognized agency. Now, the distinction between the two states becomes very pronounced. Oklahoma has 23 organic farmers but only 3 are certified whereas California has 40 organic farmers, 31 of which are certified. This difference highlights how many Oklahoma farmers are growing organically without certification.

Looking back to Table 2 above, we can see that Oklahoma has 23.8% of vendors growing organically without certification while California has 9.8% of vendors doing this. Overall, Oklahoma changes from 27.4% organic when we include the non-certified and certified organic growers to 3.6% organic when we limit membership to certified growers—that is an 87% reduction. When we compare the same change in California the percentage decreases from 43.5% to 33.7%—a 23% reduction. The difference between

the states and within Oklahoma shows that non-certified organic growers in Oklahoma have an impact on the level of organic produce available in the state.

Market	All Non-Cert	Certified	Total	All Non-Cert	Certified
Stillwater	9	0	9	100.0%	0.0%
Shawnee	4	0	4	100.0%	0.0%
Enid	5	0	5	100.0%	0.0%
Tulsa North	1	0	1	100.0%	0.0%
Cherry Street	7	2	9	77.8%	22.2%
Muskogee	11	0	11	100.0%	0.0%
OSU/OKC	5	1	6	83.3%	16.7%
Bethany	5	0	5	100.0%	0.0%
Edmond	6	0	6	100.0%	0.0%
Norman	28	0	28	100.0%	0.0%
Total	81	3	84	96.4%	3.6%
Lake Shore	15	16	31	48.4%	51.6%
Chico	20	2	22	90.9%	9.1%
Monterey	9	7	16	56.3%	43.8%
SantaClara	4	0	4	100.0%	0.0%
Yuba	6	1	7	85.7%	14.3%
Sacramento	7	0	7	100.0%	0.0%
Point Reyes	0	5	5	0.0%	100.0%
Total	61	31	92	66.3%	33.7%

Table 5. Organic Certification by State (Certified Only)

Based on the percentages of produce types in Tables 3 and 5 above, we can classify each farmers' market by what a consumer would expect to find at that location. Table 6 below illustrates three different expectations: produce type when we use both non-certified and certified organic farmers, produce type when we limit organic inclusion to certified farmers, and Tiemann's (2004) experience and indigenous classification. The first expectation, the column labeled "Dominant Type Under Cert and Non-Cert Org Classification," accepts certified and non-certified organic growers and classifies each market based on the dominant type of produce you are likely to find available; 50% or more of either certified organic or conventional (includes partial growers) produce labels

the farmers' market as such. For this division, we can see that Oklahoma has two markets where consumers are likely to find organic produce: Tulsa North at 100% and the Tulsa Cherry Street market at 88.9%. Between these, Cherry Street would be the more viable market. Tulsa North used to have about 7 vendors but this last season there was only one farmer—the owner of the land where the market is held. The Muskogee market is close to the organic expectation with 45.5% organic produce available. In California, there is the Lake Shore market in Oakland with 61.3%, the Monterey market with 50.1%, and Point Reyes with 100%. Because Monterey is so evenly divided it has been assigned an Organic/Conventional level of expectation.

Market	Dominant Type Under Cert and Non-Cert Org Classification	Dominant Type Under Certified Org Only Classification	Number of Stalls	Percent of Total Market Produce	Tiemann
Oklahoma					
Stillwater	Conventional	Conventional	15	60%	Indi-Minor
Shawnee	Conventional	Conventional	6	67%	Indigenous
Enid	Conventional	Conventional	5	100%	Indigenous
Tulsa North	Organic	Conventional	1	100%	Indigenous
Cherry Street	Organic	Conventional	37	22%	Experience
Muskogee	Conventional	Conventional	23	48%	Exp-Minor
OSU/OKC	Conventional	Conventional	18	33%	Exp-Minor
Bethany	Conventional	Conventional	7	71%	Indigenous
Edmond	Conventional	Conventional	28	46%	Experience
Norman	Conventional	Conventional	48	60%	Exp-Minor
California					
Lake Shore	Organic	Organic	54	57%	Experience
Chico	Conventional	Conventional	67	31%	Experience
Monterey	Org/Conv	Conventional	37	43%	Experience
SantaClara	Conventional	Conventional	18	22%	Exp-Minor
Yuba	Conventional	Conventional	20	35%	Indi-Minor
Sacramento	Conventional	Conventional	17	41%	Indi-Minor
Point Reyes	Organic	Organic	14	36%	Exp-Minor

Table 6. Market Expectations

The expectation changes when we apply a strict organic policy and only count certified organic offerings as was done in Table 5. Looking at the column labeled "Dominant Type Under Cert Org Only Classification" in Table 6, we can see that produce expectations for Oklahoma become consistently conventional when non-certified organic growers are removed from the organic totals. In California, Point Reyes remains with 100%, Lake Shore remains mostly organic by a small margin of 51.6% and borderline Monterey drops off with 43.8%. These produce expectations contribute to the discussion on farmers' market types.

The third expectation is related to the farmers' market type (experience or indigenous) as defined by Tiemann (2004) and discussed in the Literature Review chapter above. In the column labeled "Tiemann" in Table 6 above, I have classified the markets based on observations of size, location, market setup and structure, the level of attendance, art, craft, and service offerings, and quality of product displays. One goal of this project was to see if the organic offerings at each market helped define a market as either indigenous or experience, the assumption being that higher levels of organic offerings would be found at experience markets. This assumption was made with another: that experience markets would be found in urban areas. The root of these assumptions stems from my familiarity with the Cherry Street market in Tulsa, Oklahoma, and the Lake Shore market in Oakland, California in relation to their urban setting and experience market classification.

Tiemann uses two classifications, indigenous and experience, to describe farmers' markets; these terms were created with respect to the type of regulation governing each market, in addition to some qualitative characteristics of the markets, such as the size of

the market, its structure, and its clientele.[8] While Tiemann's classifications are generally followed, I turned the binary classification into a spectrum of classifications as many of the markets visited did not fit acceptably into either category. The terms indigenous and experience are used in the strictest sense when markets can clearly be labeled as such. However, these two terms are supplemented with a "minor" designation when the market has characteristics belonging to both categories but leans more toward one category over another.

For example, if a market is given an "indigenous-minor" classification it is usually indigenous at its core but may also have implemented regulation, may sell more crafts or offer other services, and/or may have very ornate displays, large crowds, or other characteristics that preclude it from a strict indigenous market where a few produce vendors typically pull up to a lot and sell out of their vehicle. Conversely, a market may be classified as "experience-minor" when it its characteristics preclude it from a clear "experience" designation. For instance, it may be an experience market and yet have a small number of stalls and patrons, only offer produce, or have very loose member regulations. In order to place the reader within the context of these markets, each classification is explained in relation to its market.

Oklahoma Markets

The Stillwater market in north central Oklahoma received an indigenous-minor classification. It sets up in a park off of a major street near Oklahoma State University and most of the vendors set up unadorned large folding tables and display produce in plastic bins or wooden boxes. In some cases, produce remains on the vendors' trucks and few of the vendors have covered stalls; signs or banners advertising the farm are rare.

[8] See the Table 1 in the Literature Review for more characteristics.

While it is indigenous in many ways, it offers crafts, meat, processed food such as salsa, and it has a membership organization that charges weekly fees to sell at the market.

The Shawnee market is indigenous. It is very small with few patrons and six vendors, many of them selling out of their trucks or on small card tables. They set up under a permanent shelter that is open on all sides and located just outside the unrevitalized downtown core.

The Enid market in north central Oklahoma is also indigenous. The market sets up outside the fairgrounds on an earthen patch along a side road. Consumers would have to know the market was there in order to find it as it is not visible from the main road and there is no directional sign. The small number of vendors sell produce directly out of their cars or on small card tables and there is little consumer traffic. Most patrons drive up, get what they need, and leave.

The Tulsa North market is indigenous as well. It has lost a number of its vendors and has essentially been reduced to a road-side stand. There is currently one vendor and sparse attendance.

While the indigenous Bethany market near Oklahoma City is located in a very populated area off the main street, there are very few vendors and patrons. Like the Enid market, many of the patrons stay for a very short amount of time. It is for these reasons that this market is classified as indigenous though it does have crafts person (an amazing basket weaver who works on-site) and two of the vendors set up covered stalls.

The Cherry Street market in Tulsa is an experience market in the strictest sense. There are a large number of vendors offering a variety of products. Time and care are spent on product display and most of the stalls have a large banner or sign advertising the

vendor. There is a large number of patrons and many stay to listen to the live bands, converse with the various sellers and each other, or visit the restaurants, coffee shops, and retail stores in the vicinity. Many different kinds of produce are available in large quantities but the number of stalls selling other products far exceeds the produce offerings. These include fresh baked breads, herbal soaps, horticultural plants, many arts and crafts, and a variety of processed foods.

The Muskogee market in Eastern Oklahoma is classified as experience-minor. It is small for an experience market but very large for an indigenous market. It is located along a tree-lined sidewalk between a library and a city park near the unrevitalized downtown core. Vendors sell small quantities of produce on unadorned folding tables. While these qualities denote an indigenous market, the spirit of the vendors and the patrons says otherwise. This farmers' market offers live music, a used book stand, and many stalls selling crafts and processed foods such as baked goods and homemade tortillas. There are even community outreach tables for the VFW and the local Agricultural Extension office.

The OSU-Oklahoma City farmers' market, in central Oklahoma, market sets up off the OSU Extension parking lot under a very large permanent shelter open on all sides. This experience-minor market offers many more processed foods, crafts, and other goods than it does produce. Numerous patrons park and walk around though few stay too long.

The Edmond market just north of Oklahoma City is an experience market. While the Cherry Street market had the feel of many California markets in terms of clientele and market displays, structure, etc., the Edmond market is reminiscent of a Forth of July festival in small town America. It is located off the main street in a very active

downtown area. The site has a very large permanent structure open on all sides that houses most of its vendors who sell produce as well as a number of different processed foods and crafts including meat, cheese, soy candles, soap, horticultural plants, and homemade berry pies.

Finally, the Norman market south of Oklahoma City is an experience-minor market. With 48 vendors, it was the largest Oklahoma farmers' market visited. Most sellers set up inside a building on the Extension office site while the remainder[9] set up outside. Many of the inside vendors had banners tied to the front of their folding tables, but most of the products were roughly displayed in plastic-lined bins or thinly spread over the surface of the table. There was a heavy patron flow, many of them struggling to park, but the market was very utilitarian as opposed to the strolling, enjoyable settings present at most experience markets.

California Markets

The Yuba City indigenous-minor market, in Central California, was small and lightly attended. Located on a closed part of the small-town main street, vendors set up covered stalls and folding tables. Though the market was located in a predominantly Latino part of town, the patrons were nearly all white. Produce was sold from plastic bins but sweet pea flowers cascaded over steel tubs. Many craft items and a few processed food items were sold including jewelry, knitting, and beef jerky.

The Downtown Sacramento indigenous-minor market had a utilitarian feel—business people came down to the market for food and produce but did not stay to chat with vendors or each other. The stalls were spaced out along two sides of a park block;

[9] The vendors outside were almost completely resale vendors (they bought the produce from a farmer and are selling it second hand).

this layout added to the discontinuity of the market. Aside from produce, this small market offered many ready-to-consume products like espresso, dried fruits and nuts, Crystal water products, and Chinese food.

The Lake Shore market in Oakland is the epitome of experience markets. It is located in a highly populated urban core near many shops and restaurants. While its location under the 510 freeway in the San Francisco Bay Area does not sound very appealing, this year-round market has dramatically improved its grounds over the last five years. The city developed the grass patch into an attractive multi-use area with trees, seating, child friendly fountains, gravel paths, and artistic stone work. There are a number of vendors serving hundreds of patrons from covered stalls with colorful banners and signs. A large selection and quantity of organic produce is offered along with seven baker stalls, kettle corn, granola, prepared and processed foods, meat, jelly, jerky, massage, shaved ice, knife sharpening, and even tie-died shirts and rubber duckies. Vendors are heavily regulated by both the market management and the city. As a comparison of Oklahoma and California experience markets, the Cherry Street market in Tulsa, OK charges members a yearly due of $10 and a stall fee of $15 (each market day) while the Lake Shore market charges a yearly due of $60 and a farmer stall fee of $35 (Smith 2005; MCFMA 2006).

Chico is another very large California experience market. Located in a parking lot near the California State University and the downtown core, this farmers' market stays busy until its closing time at 2 p.m. This central California market offered a lot of conventionally grown produce but was the second lowest of all California markets in its percentage of produce stalls. About 69% of the farmers' market consisted of processed

and fresh foods, oils, coffee, spices, arts, crafts, horticultural plants, and other goods and services. Many vendors had banners advertising their farms and companies and many had covered stalls.

The Monterey market, located on the Pacific Coast, is an experience market with a more relaxed feel. It sets up below giant eucalyptus trees on an earthen patch below the parking lot of the local community college. It offers roughly equal amounts of conventional and organic produce as well as produce versus other goods. While there are many patrons, ample parking and strolling customers keep the pace slow.

The Santa Clara market, found south of the Bay Area, is located in the courtyard of a Kaiser hospital. This non-traditional location is populated with the various staff and patients of the Kaiser complex looking for lunch and an excuse to get outdoors. This experience-minor market offers very little produce but many crafts, cut and potted flowers, espresso, a charity outreach table, and four bakers. A single strumming musician sets the lively pace of the small market.

Finally, the Point Reyes farmers' market, located in a very rural area on the Pacific Coast, is classified as an experience-minor market. While it has many of the qualities of an experience market, it was very small and had slow attendance. Of all the markets visited in this research, the Point Reyes market had the most finished look. It is the type of farmers' market most likely to be advertised by a "high food" magazine with its organized and bountiful displays, rich use of color at every stand, and elaborate hand-painted signs, see Figure 4 below. These pictures are included as this look is typical of most experience markets.


Figure 4. Displays at Point Reyes

Discussion

By examining Table 7 below, it appears that the percent of produce offered in relation to other products helps differentiate the experience and indigenous market. Tiemann (2004) defined the indigenous markets as offering no crafts while the experience market would offer crafts and other goods. While most markets in this

Market	Total # of Stalls	% Produce
Tulsa North, OK	1	100%
Enid, OK	5	100%
Bethany, OK	7	71%
Shawnee, OK	6	67%
Stillwater, OK	15	61%
Sacramento, CA	17	41%
Yuba City, CA	20	35%

Table 7. Vendors and Produce at Indigenous Markets

study offer fewer crafts at the indigenous markets, few of the indigenous and indigenous-minor markets offer near 100% produce. Indeed, the only two which do offer 100% produce are the Tulsa North market with one vendor and the Enid market with five vendors. As the number of vendors at a market increases, so does the likelihood that it will offer less produce and more crafts and other goods; with the exception of Bethany and Shawnee, which have similar low vendor values of seven and six vendors respectively. While experience markets do not reflect this same pattern, they tend to offer less produce. All experience markets in this study offer less than 60% produce with some markets offering only 22% produce.

As Tiemann (2004) did not classify his indigenous and experience markets in terms of their city setting, another goal of this research was to investigate any connections between market type and location. Farmers' markets in this study show that experience and indigenous markets exist irrespective of urban, suburban or rural market locations or city populations. Table 8 below lists the markets in this study along with their Tiemann classification ordered by their city populations (City-Data 2006). Point Reyes has a very low isolated rural population with a small experience market while Enid has a very indigenous market in a relatively populated city. Sacramento is indigenous in a very populated urban core while Monterey is an experience market in an isolated area with low population. Lake Shore, Cherry Street and OSU-OKC are experience markets in very populated places while Bethany, Shawnee, and Yuba City have indigenous markets in cities with low populations (though Bethany is embedded in Oklahoma City). There is no clear connection between city population and market type expectation.

Market	Tiemann	Population
Point Reyes	E xp-Minor	818
Bethany	Indigenous	20307
Shawnee	Indigenous	28692
Monterey	Experience	29674
Yuba	Indi-Minor	36758
Muskogee	Exp-Minor	38310
Stillwater	Indi-Minor	39065
Enid	Indigenous	47045
Chico	Experience	59954
Edmond	Experience	68315
Norman	E xp-Minor	95694
SantaClara	E xp-Minor	102361
Cherry Street	Experience	393049
Tulsa North	Indigenous	393049
Lake Shore	Experience	399484
Sacramento	Indi-Minor	407018
OSU/OKC	Exp-Minor	506132

Table 8. City Populations vs. Market Type

Individual farmers' markets may continuously grow or shrink over time. Predicting where individual farmers' markets may be in the future is complex as they change relative to market managers, vendors, patrons, and the desires of each group. Future research would benefit from looking at the history of individual markets in relation to its market type. This may provide information on whether farmers' markets maintain a steady path from indigenous to experience types as they grow or whether a market can move from experience to indigenous as it shrinks. Looking at this development in relation to the changing neighborhood demographics over time may also provide a wealth of information on market types and their formations.

Farmers' Market Consumer Survey

I conducted a consumer survey at the Cherry Street farmers' market in Tulsa, Oklahoma (the results can be seen in APPENDIX H). The original intention of this survey was to look at consumer demographics in relation to organic purchases, but the

most valuable information gained from this survey relates to the organic questions themselves. These questions address how much organic produce is purchased, consumer satisfaction with organic produce at the farmers' market and in the city of Tulsa, and whether or not consumers are concerned about having certified organic produce.

As the main interest of this research lies in organic farming in the state, the consumer survey did not include questions generally found in farmers' market surveys such as how the customer heard about the market and what qualities were more important in products at the market. This type of information was collected at Oklahoma markets in 2001 by the Kerr Center for Sustainable Agriculture—the survey, results, and discussion can be viewed on their website (Kerr Center 2005).

Of the 78 surveys collected for this research, 3 surveys were omitted for missing zip code information and 8 surveys were omitted as respondents did not reside in the Tulsa region (4 were from out of state—to see a map of zip codes in the Tulsa region, turn to APPENDIX G). The 67 remaining surveys were mapped by zip code of origin as depicted in Figure 5 below.

As is expected, zip codes closest to the market area have the highest number of surveys completed with zip code representation depleting as you move away from the market. Collinsville and Sand Springs (74021 and 74063) each had one survey respondent but these were discarded as each is its own city and each of these cities have their own farmers' market. It is interesting these respondents would come to the Tulsa farmers' market on a rainy day—perhaps this speaks to some aspect of the market offerings or the area around the market. This leaves the 65 surveys used in this analysis.

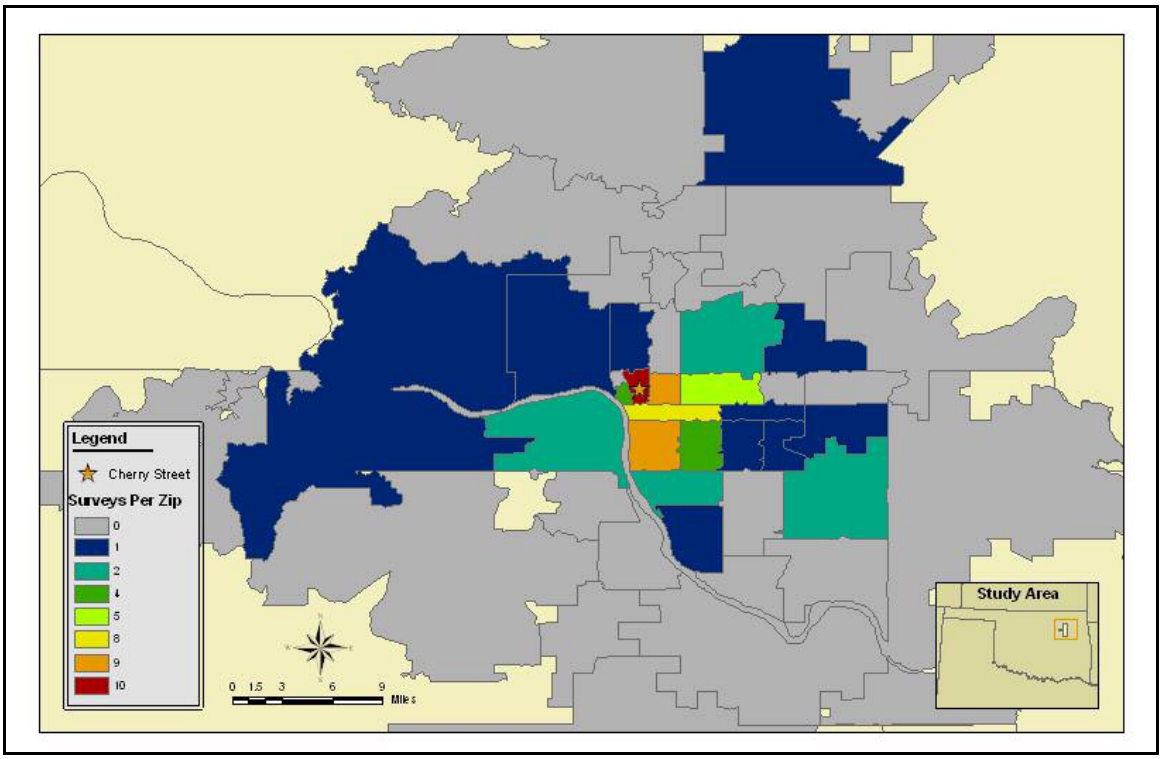


Figure 5. Survey Respondents: Surveys Per Zip Code

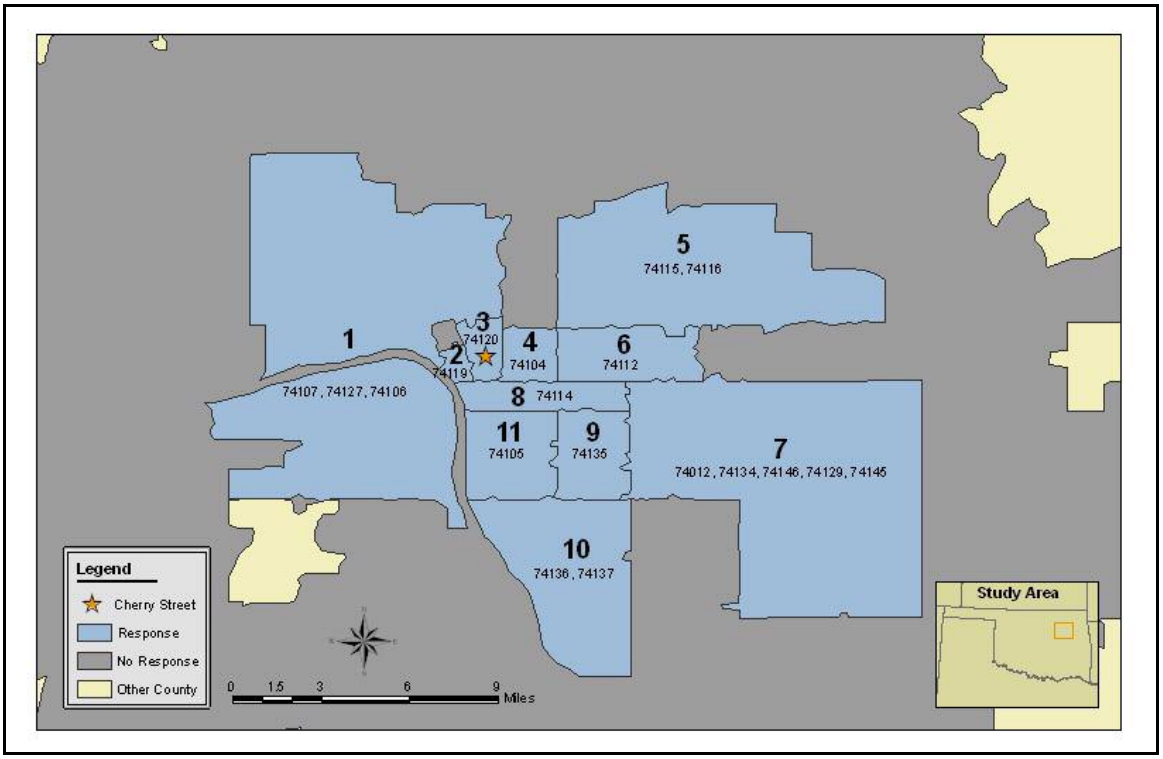


Figure 6. Zip Code Groups For Survey Results

Once Collinsville and Sand Springs were removed, outlying zip codes with low representation were combined with neighboring zip codes of low representation to form zip code groups for the survey analysis. By giving each group more surveys, averages of these surveys better represent the area. The groups formed with these surveys and the zip codes that they represent can be seen in Figure 6 above. It is important to note that Group 1 appears as two areas because of the river, but for the purposes of this analysis, it is counted as one group as labeled in Figure 6 above.

Groups were not further combined so as to leave representation for different areas of the city intact. Figure 7 below shows the new distribution of surveys for each zip code group. The high concentrations to the east and south of the market are still visible; of

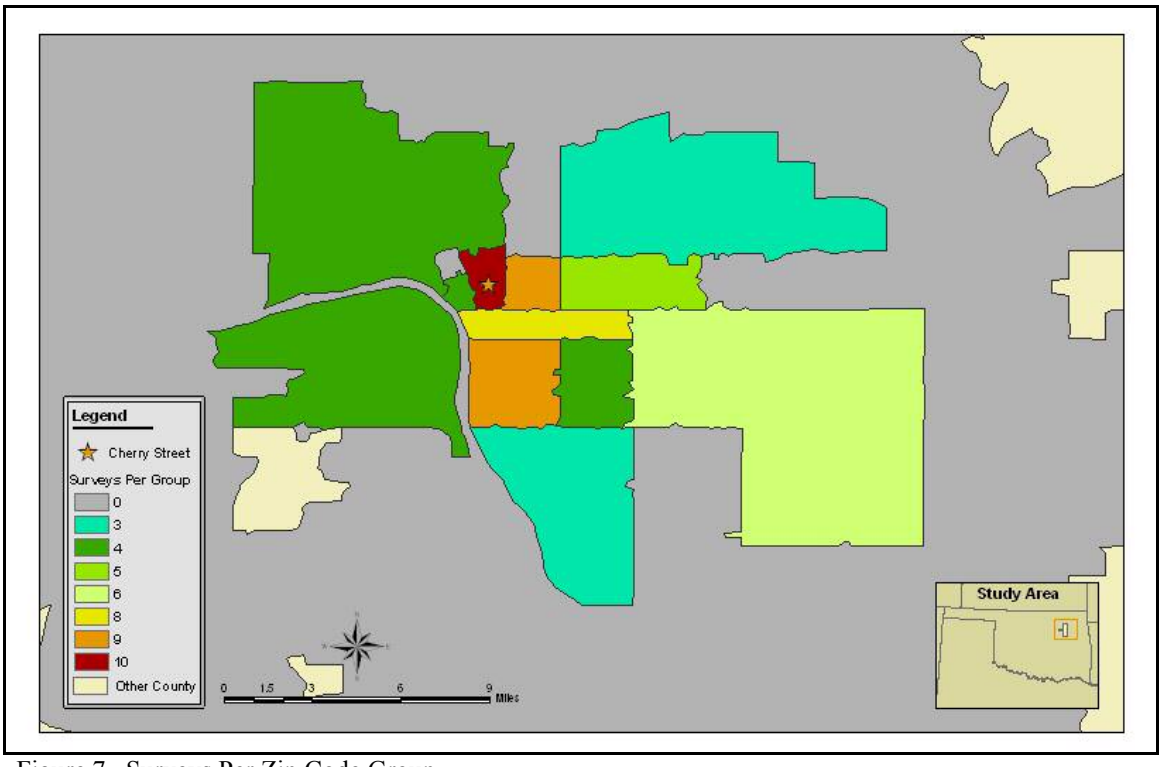


Figure 7. Surveys Per Zip Code Group

the area closest to the market, these are the regions that most Tulsan's would equate with expensive historic homes and higher incomes.

From Figure 6 and 7 we can see that 6 respondents came from the East Tulsa/Broken Arrow area (Group 7), 3 came from Southern Tulsa (Group 10), 4 came from West Tulsa and the Gilcrease Museum area (Group 1), 3 came from Northern Tulsa (Group 5), and the remaining 49 respondents came from groups closest to the market.

One question the survey asked was "What percent of your purchased produce (from all sources) is organic?" The impetus for this question was to find out the organic produce demand for farmers' market shoppers. Responses to this question also inform the issue of whether the market is offering enough organic produce to meet the current demand. Figure 8 below shows the distribution of organic demand for each zip code group. In this map, Group 1 and 6 have the highest level with 51-75% of their overall

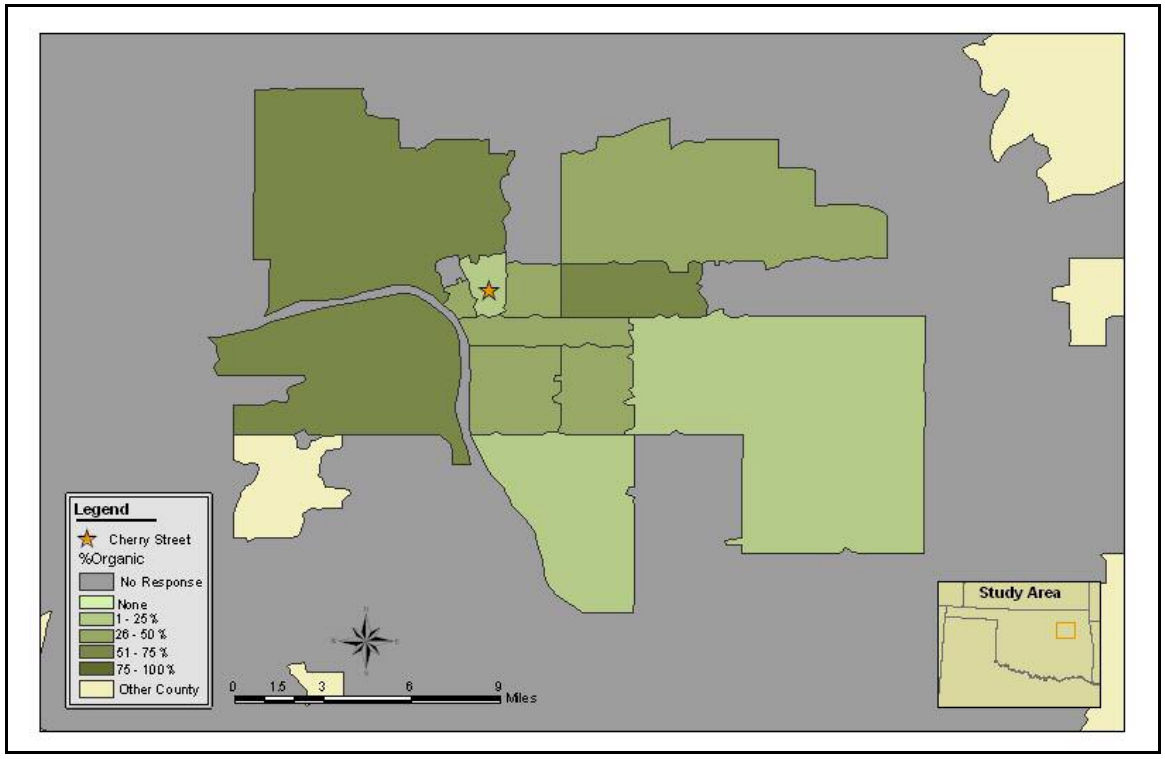


Figure 8. Purchased Organic Produce

produce purchases being organic. Groups 7, 10, and 3 (the market zip code) have the lowest values with 1-25% of their produce being organic. The remaining groups have an average of 26-50% organic produce purchases.

Zip code groups distort the overall survey averages for this category. Taken as a whole, 9% of respondents buy 76-100% organic produce, 21.5% buy 51-75% organic produce, 25% buy 26-50%, 41.5% buy only 1-25%, and 3% report no organic purchases. Of these organic purchases, 40% of respondents buy 50% or more of their organic produce at the farmers' market; 62% buy 25% or more at the farmers' market. Given that the farmers' market is only a seasonal source, these numbers reflect a decent demand on the market itself.

Perhaps more important than the amount of organic produce purchased is the level of satisfaction that customers have with organic availability at the farmers' market as

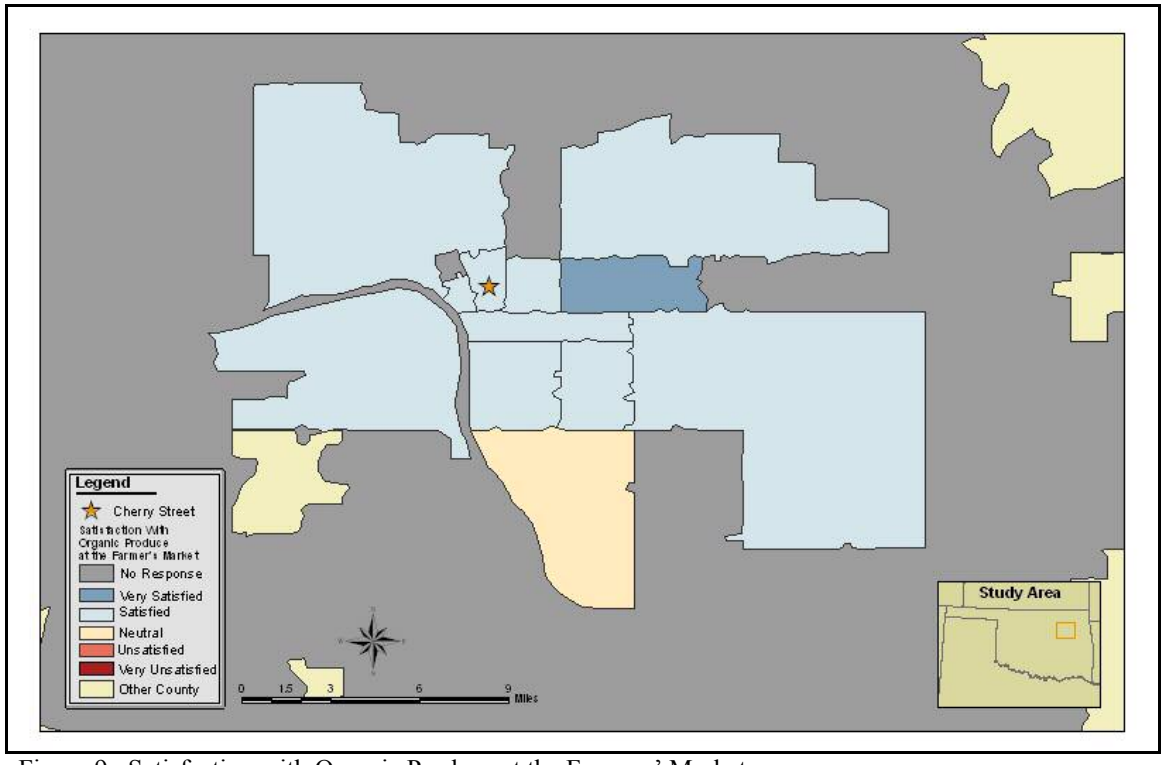


Figure 9. Satisfaction with Organic Produce at the Farmers' Market

well as in the city as a whole. Figure 9 above shows that Group 10 in Southern Tulsa is neutral (neither satisfied or unsatisfied) while group 6 in Eastern Mid-Town Tulsa is very satisfied. All other groups are satisfied with organic offerings at the market. Overall, 35% of all respondents are very satisfied with organic availability at the Cherry Street market, 45% are satisfied, 17% are neutral, and only 3% are unsatisfied.

The situation is very different when we look at consumer satisfaction with organic produce in Tulsa as a whole. Figure 11 reflects the lower levels of satisfaction.

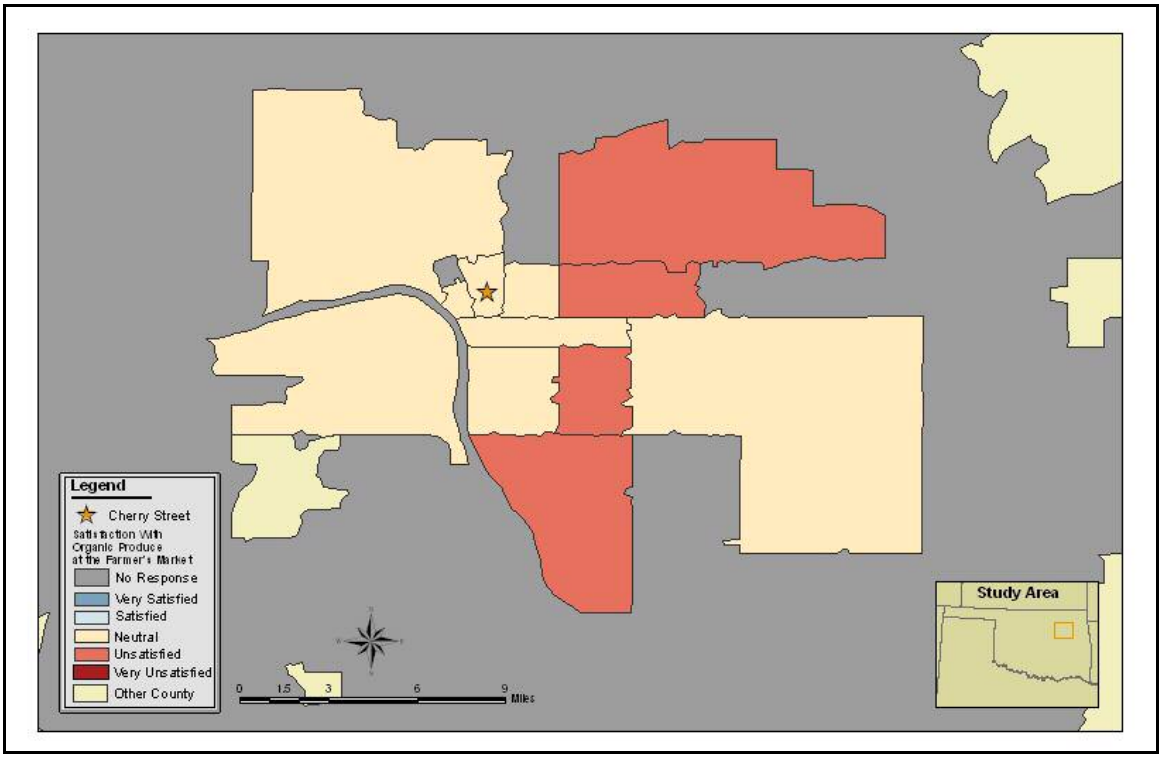


Figure 10. Satisfaction with Organic Produce in Tulsa, OK

Figure 10 uses the same symbology as Figure 10, so these maps can be directly compared. In Figure 10, Groups 5, 6, 9, and 10 are unsatisfied and the remaining groups

are neutral. In general, every group moved down one level of satisfaction when the city became the focus of organic availability. Only 31% of respondents were satisfied or very satisfied with organic produce in Tulsa, while 39% were unsatisfied or very unsatisfied, the remaining 30% were neutral.

Throughout this research on organic produce in Oklahoma, the issue of organic certification continued to come up both in terms of producers and consumers. The survey asked "How important is it that organic produce at the farmers' market be certified organic?" To this, 23% of consumers said it was not important, 52% said it was somewhat important, and 25% of respondents said it was very important. This question was included, verbatim, on the Tulsa survey because the Kerr Center had used it on their 2001 farmers' market study (Kerr Center 2005). I was interested to see if similar percentages would be acquired. Kerr Center respondents, from many farmers' markets in Oklahoma, were similar with 31% saying that certification was not important, 45% said it was somewhat important, and 24% said it was very important. The difference between the two surveys is that more consumers in the Tulsa survey thought certification was somewhat important. So we can deduce that Tulsa consumers are either slightly more concerned about certification, or that Oklahoman's in general have gotten slightly more concerned, and Tulsan's accurately represent that group.

Participants were also asked "Do you take sellers at their word that their produce is organically grown?" Figure 11 shows the zip code group averages to this question. A majority of the groups are 100% yes—no respondent in these groups replied no. The remaining groups may have had one respondent answer no so while the average would clearly round down to a yes, a range of values from 1 to 2 was used to show the tiny

amount of variation. Zip code groups which fall into the color category below the solid "Yes", have an average of 1.22 on the scale of 1 – 2 where 1 is Yes and 2 is No. Overall, 91% of respondents said they trust that the farmer is selling organic produce if they say they are.

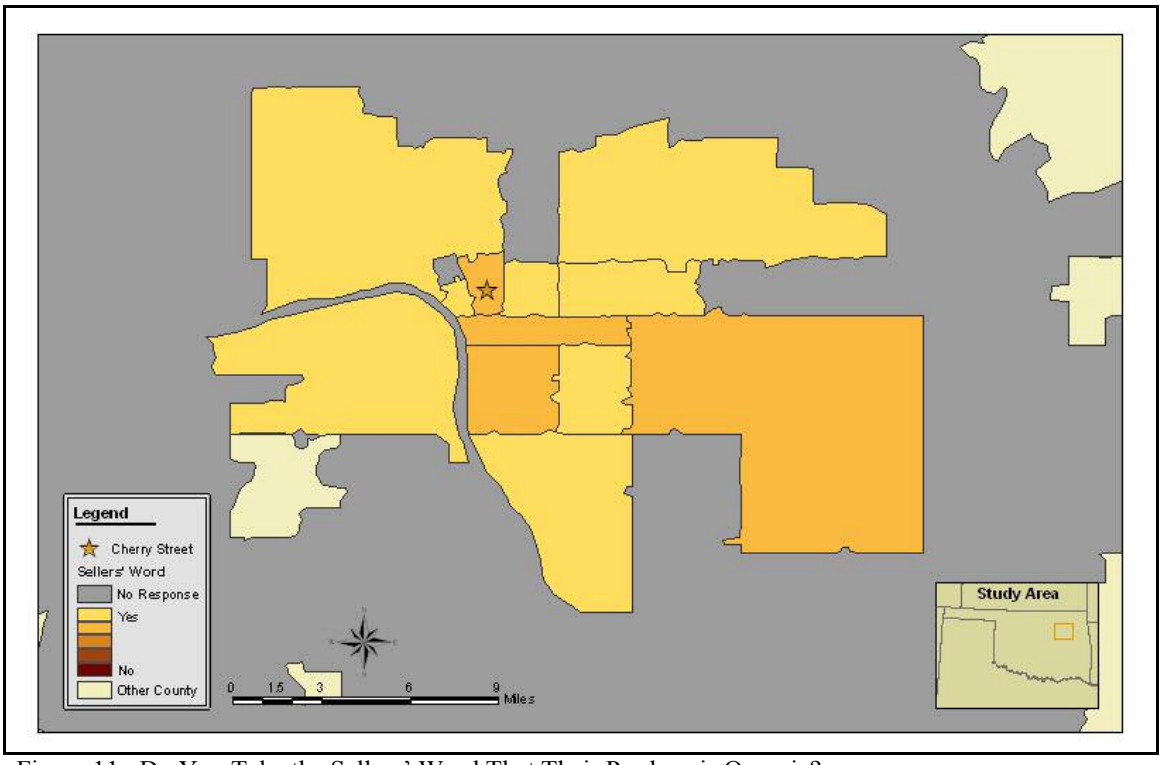


Figure 11. Do You Take the Sellers' Word That Their Produce is Organic?

Considering that so many respondents trust the farmer, it is interesting that so many are concerned and somewhat concerned with organic produce certification. We cannot know which question has greater importance but future research might ask the question: "Which is more important to you, the word of the farmer or organic certification?"

Consumers with the two highest levels of income were isolated and averaged—aside from demographics typically associated with high income groups (age, home ownership, education) these consumers did not differ from the cumulative survey

averages. Additionally, consumers who purchase the two highest levels of organic produce, 50% or more, where isolated and averaged. These averages did not differ from the cumulative averages in all categories except the level of satisfaction with organic availability in Tulsa—they were even more dissatisfied. As high income consumers and high organic purchasers did not differ from the overall averages, we can conclude that these two groups do not have any predictive power in this analysis.

Figure 12 below shows the cumulative averages for each zip code group.

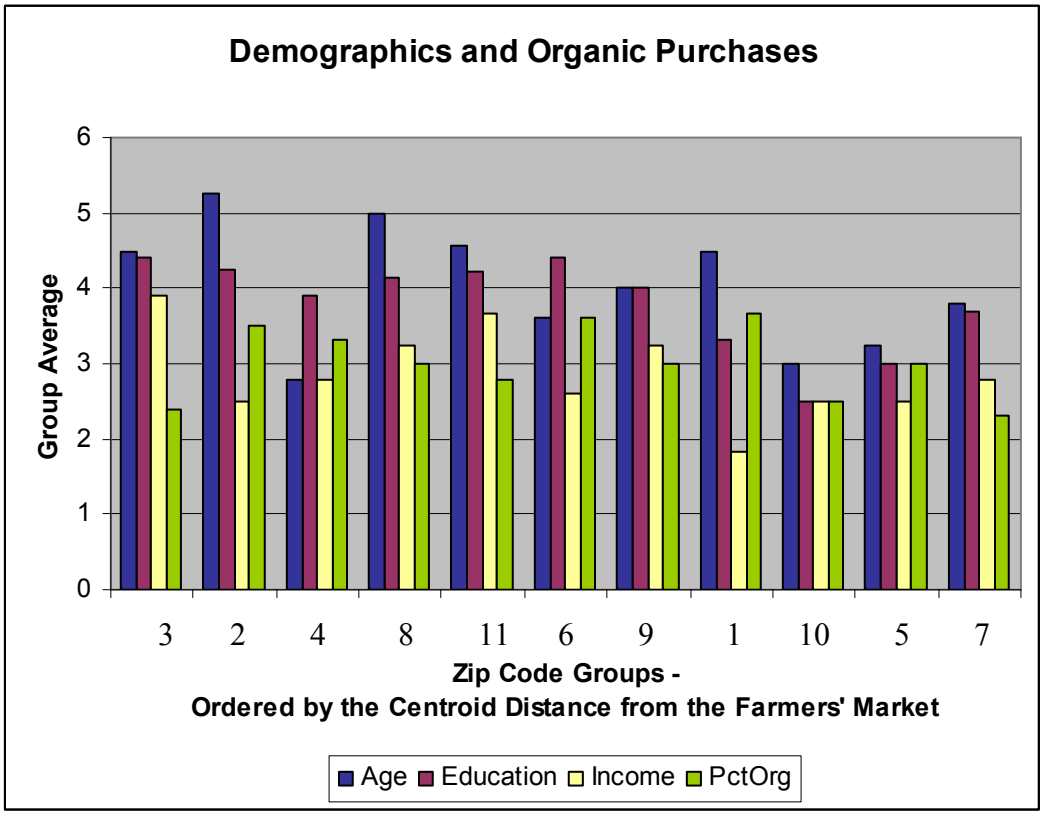


Figure 12. Consumer Survey Demographics and Organic Purchases

This shows us that distance from the market does not relate to any demographic or the percent of organic produce purchased. We can also see that organic percents vary in relation to income. The percent of organic purchases does seem to relate to the level of

education—in all cases except Group 1, the level of education is higher in relation to the level of organics.

Interviews and Discussion

The purpose of this section is to discuss the findings from the farmers' market concentration survey and the consumer survey within the context of the interviews collected during this research. As described in the Methods section above, these interviews were conducted with farmers and market managers as well as government and non-profit employees. The interviews focused specifically on the issues surrounding USDA organic certification through the Oklahoma Department of Agriculture and on organic production and demand in Oklahoma. Farmer and consumer comments were taken from many of the surveys and are included here as well.

Organic Demand in Oklahoma

As farmer Michael Appel told me "in Oklahoma, [consumers] are just excited to get local produce; if it's organic, it's a plus" (Appel and Oakley 2005). But the demand for organic produce is growing in Oklahoma. Emily Oakley adds that "the opening of Wild Oats[10] showed that there was a demand that many didn't think was in Oklahoma" (Appel and Oakley 2005). In fact, 77% of respondents to the Farmers' Market Consumer Survey reported Wild Oats as another location where they purchase organic produce. In the highlights section of their 2001 Farmers' Market study results, the Kerr Center tells us that consumers regularly purchase organic produce, that they want more organic vegetables, and that producers want more information on organic methods (Kerr Center 2005). Though the demand continues to grow, Oklahoma farmers have not been able to meet the potential market share of organic produce (Walton 2005).

[10] The Wild Oats in Tulsa, Oklahoma, opened in October of 1999.

Doug Walton, who works for the Kerr Center, has been writing a report that describes the possible opportunities available to Oklahoma organic farmers in terms of market share (Walton 2005). This project is representative of many at the Kerr Center which are aimed at sustaining and growing Oklahoma's production capacity, especially for medium and small-sized farms (Penick and Redhage 2005; Walton 2005; Kerr Center 2005). In his report, Walton uses the USDA Agricultural Census and the USDA study on Organic Farming and Marketing to derive conservative estimations for organic sales in Oklahoma. Table 9 below, reproduced from Walton's work with permission, shows the census values he used to arrive at Oklahoma's organic market share values (Walton 2005).

Category of Goods	US Consumption Totals ($1,000)	National Organic Sales ($1,000)	Market Share of Organic Products (%)	Oklahoma Consumption Totals($1,000)	Organic Sales in OK ($1,000)
Grocery	$472,357,365	$8,000,000	1.7	$5,480,299	**$93,165**
Meats, Poultry, Seafood	$104,767,842	$240,000	0.1	$449,271	**$449**
Produce	$44,898,866	$3,444,000	7.8	$509,489	**$39,740**
Baked Goods	$50,618,463	$1,040,000	2.1	$558,695	**$11,732**

Table 9. Estimated Organic Sales in Oklahoma

To arrive at these numbers, Walton started with the values for total United States Consumtion[11] in four categories: grocery, meats, produce, and baked goods (these values are in thousands of dollars; for example, we would read the national sales for baked goods at over $50 billion). Next, total sales of organic products[12] in these four categories

[11] USDA-AMS, State Summaries, 2002 http://www.ams.usda.gov/statesummaries/OK/MSA/MSA.xls/OklahomaCity.XLS
[12] USDA-ERS, Organic Farming and Marketing, 2003 http://www.ers.usda.gov/briefing/Organic/

were collected. By dividing the value for national organic sales in each category by the value of total national sales for each category, Walton arrived at a percent of national market share for the organic product in each category. We can see from this table that organic produce has a 7.8% national market share. Since both the agricultural census and the organic sales study were conducted by the USDA, we can assume the methodologies in each study yielded comparable results. For the fourth column of the table, Walton used the census values for total sales in Oklahoma for each category. With the assumption that Oklahoma's organic market share is similar to that of the overall national market share, Walton multiplied the Oklahoma sales by the market share percent to arrive at total organic sales, for each category, in Oklahoma.

While Oklahomans are generally encouraged to produce anything in order to keep state revenues in the state economy and curb our reliance on imports from other states[13] (Penick and Redhage 2005; Walton 2005; Struby 2005; Waldrop 2005), Walton wanted to make the point that so many of our revenue dollars are being spent on organic products while the state is scarcely contributing to their production and availability (Walton 2005). Our 16 certified organic produce farms (ODAFF 2005) are not selling $39 million of produce annually. The gap is being filled with produce trucked in from coastal areas, which, ironically, has an environmental impact that organic farming initially sought to avoid (Walton 2005; Appel and Oakley 2005). A better portion of this gap can be filled by Oklahoma farmers.

Questions/orgqa5.htm

[13] While it focuses on sustainable producers, the Oklahoma Food Cooperative is one example of organizations forming to connect consumers with Oklahoma producers. To learn more about this organization (and to purchase Oklahoma-produced goods) visit http://www.oklahomafood.coop/.

Small Farms in Oklahoma

Kerr Center employees, Mary Penick and David Redhage, tell us that "vegetables are hard in Oklahoma, any way you look at it" (2005). Aside from the challenges that established farmers face in their operations, small farms in general have been disappearing from Oklahoma for years. Starting with agricultural industrialization in the 1950s, there has been a national shift from small diversified farms to large, usually incorporated or corporately owned, specialized farms (Walton 2005). This is why organizations like the Oklahoma Department of Agriculture and the Kerr Center have been educating farmers and working with them to maintain and even grow a viable agricultural economic base. To keep these farms running, they need a strong, reliable outlet for their goods.

For this reason, we see organizations working to establish a consumer market for local producers. The Oklahoma Department of Agriculture, Food, and Forestry maintains a Farmers' Market Marketing division that works with local communities to start new markets and advertise existing markets. The Oklahoma Food Cooperative, discussed above, is another such organization. People are working to connect school cafeterias to local farmers and create a Farmer Directory (OSN 2005). The Kerr Center is working with several agencies on a Community Food Security project (Penick and Redhage 2005). During this research, I found consumers eager to buy local produce, many groups looking for farmers to meet their demands, and many organizations whose missions revolved around helping farmers. However, there are still problems that full-time farmers in Oklahoma face.

One of these problems occurs in a venue that is intended to help farmers: the farmers' market. Looking at the Oklahoma Department of Agriculture publications in 1983 and 1991, the agency speaks in an almost desperate tone to promote the farmers' market, both in terms of attracting customers and encouraging potential producers. Now that farmers' markets have grown in the state and a few full-time produce farmers have become established, we are seeing issues related to price competition arise. "There is a transition from backyard farming to farm revitalization in Oklahoma" (Appel and Oakley 2005) and many feel that the small garden farmers and part-time farmers, who were once strongly encouraged to join the markets (ODA 1983; ODA 1991), are undercutting those who are farming organically full-time (Walton 2005; Penick and Redhage 2005; Appel and Oakley 2005). To exacerbate the problem, the market associations and managers are doing little to address this (Appel and Oakley 2005).

The guidelines for the Cheery Street market state "each vendor must clearly post prices on the products being sold. Be aware of competitors and do not overprice so as to discourage consumer trade. The market manager will determine any disputes over prices" (CSFMA Guidelines 2005, 2). While these guidelines may have been intended to keep prices fair, they unintentionally work against full-time farmers in general, by encouraging vendors to offer the lowest price possible. Backyard gardeners looking to unload their surplus of August tomatoes for an absurdly low price undercut full-time farmers who have greater overheads. Ironically enough, this is how corporate farms out-compete small farms as well. Even where stricter rules against price-cutting exist, "they aren't being enforced for the most part; it needs to get more professional" (Appel and Oakley 2005).

Despite the numerous barriers all small full-time farmers have to overcome, some farms are surviving and growing, even organic ones. Nuyaka Farms is certified organic, services four restaurants, a 56-family CSA, and sells at the Cherry Street market (NNF 2005). Three Springs Farms grows organically, though they will not be certified for another year, has a CSA, and sells at the Cherry Street market as well (Appel and Oakley 2005). These are two profitable full-time organic farms that have grown considerably in the last two years. Both farm families are active proponents of increasing the number of certified organic farms in the state. Yet, as shown in the Farmers' Market Concentration Survey, 24% of farms in this research are growing organically without certification while only 4% are growing with certification.

Certification

Based on Oklahoma Department of Agriculture Food and Forestry records, Oklahoma currently has 28 certified organic farms, six processors and handlers, and five growers registered as selling organic (but make below $5,000 so they are not certified) (ODAFF 2005a). Of these 28 growers, 16 are certified for produce and four of these produce growers are certified for other products such as nuts, hay, and livestock (ODAFF 2005a). Though the state sponsored a certification program[14] before the USDA rules were nationally implemented in 2002, farmer participation rates have been relatively low. This is due in part to the perceived and actual barriers of becoming a certified farmer. In Oklahoma, the biggest barriers are the "big brother" attitude toward the government, the cost and time to maintain the necessary records, and the lack of a strong need to be certified because of consumer flexibility (Walton 2005).

[14] State-sponsored certification started in 1990.

It was common for non-certified organic farmers to make negative comments about the government during the Concentration Survey. Two vendors remarked on the difference between the state certification program and the national USDA implemented program. In Edmond, a non-certified organic farmer said "I was certified for three years with Oklahoma, then USDA stepped in and so I'm not anymore—but the farm is still very organic." Other remarks were aimed specifically at governmental monitoring and interference. A non-certified organic Muskogee farmer told me that "the government won't be getting into my business" and one in Norman said "I'm retired and I say *no* to the government." A different non-certified organic grower in Muskogee said "we don't know the [USDA] application process or care to" and a non-certified organic Cherry Street farmer essentially said the government was a pain, but his words were much more colorful than that. Only two farmers made comments about making less that $5,000.

Chad Goss, the Organic Coordinator for the Department of Agriculture, Food and Forestry, said, "organic is not a product, it's a process" (2005). For this reason, many farmers avoid certification. "From soil to sale it has to be documented" (Goss 2005). While some consumers like the level of food security that this documentation produces, many growers feel they do not have the time, energy, or resources to manage the record keeping involved with certification. The rules state that growers "shall maintain records applicable to the organic operation for not less than five years" (ODAFF 2005b). They go on to explain the types of records that need to be kept for each type of grower. Produce growers are required to keep: 1) a crop site history for the three previous years, 2) names of crops and varieties produced, 3) a record of input materials applied to plants, soil and water with date of application, rate, and name of material, 4) handling and

processing descriptions, date and location, 5) records of all sales and their amounts, and 6) an audit tracking system for any product identified with a lot number (ODAFF 2005b). In addition to keeping these records, produce farmers who certify 1-300 acres pay $100 annually and must submit a renewal application each year; late renewal applications are fined $100 (ODAFF 2005b).

Consumers in Oklahoma have yet to demand that farmers be certified. This research cannot tell us if this is due to poor consumer education or low levels of organic availability, but we can assume that both factors contribute to the flexibility of the consumer. While the survey results above show that most consumers are somewhat concerned about certification, it also shows that 91% of consumers trust the farmer. For this reason, it is no surprise that non-certified organic growers are successful in Oklahoma.

A fourth barrier to organic farming emerged in the course of this research: the liability that small farms accept when they register with the ODA organic program (Penick and Redhage 2005). As mentioned above, federal regulations require that a farm making more than $5,000 a year selling organic products needs to be "certified", while farms making under $5,000 need to be "registered" with their state's USDA approved certification program.[15] Farmers who register with the ODAFF for $20 can say their products are organic and they can have a sign advertising this, but they cannot say or advertise their products as certified organic (Goss 2005). For these smaller-revenue farms, there is no regulation and there are no scheduled farm visits, but the farmers have to keep the same records as certified farmers and the ODAFF can test the property,

[15] The Oklahoma Department of Agriculture, Food, and Forestry is the agency approved to certify organic farmers in Oklahoma.

without notice, at anytime (Goss 2005). If there is a complaint against the organic quality of the registered farm and testing reveals this to be the case, the farm could be fined $10,000 (Goss 2005). Conversely, certified farms are merely issued a letter that tells the farmer to discontinue the sale of their product as organic until the organic quality is restored.

Despite the barriers to certification, it may be necessary for farms to become certified as the consumer base becomes more educated (Walton 2005; Appel and Oakley 2005) or if the farmer wants to expand to the next level of production (Walton 2005), such as to become a wholesale provider for a grocery chain. In order to build the production capacity of the state, both in terms of organic and conventional farming, farms will have to increase in number and size. "Most producers growing without certification already have a market" (Walton 2005) but expanding their operation requires a larger consumer base. Since that next level of production usually happens at a lower return for the farmer, it is a disincentive to expand the base unless there is a surplus of energy and resources. "So we will see some, like Nuyaka, who can do it, but small farm agriculture in Oklahoma still needs developing" (Walton 2005). "As certified farmers become more competitive, those growing without certification will see the worth of [it] because they will have to stand out to the new, and we can assume more educated, consumers" (Walton 2005).

From the findings in this research, we can make the assumption that full-time organic farmers are more likely to seek certification than part-time organic farmers. Future research on organic farming in Oklahoma would benefit from categorizing organic and non-certified organic farmers by their farming income and status as full or part-time

farms. This would provide a better picture of which types of farms are avoiding registration and certification. Based my discussions with farmers at the markets, I will make the assumption that small part-time organic farmers are the largest group unregistered with the ODAFF.

For those interested in becoming certified organic farmers in Oklahoma, there is currently fee cost-sharing available of up to 75% per farmer, not to exceed $500 (Goss 2005). So, a 1-300 acre farmer can get certified for $25. Emily Oakley says that "it's much cheaper to get certified in Oklahoma; for instance, California Certified Organic Farmers (CCOF) take a percent of your revenue instead of a flat fee" (Appel and Oakley 2005). For those still skeptical about certification, there are alternatives available.

Alternatives

Many environmental groups have had a strong reaction to the USDA national organic rules. Aside from the numerous loopholes in the certification guidelines, "the rules as presently written give the USDA a monopoly over the word 'organic'" (Cummins and Lilliston 1998). This means that legally, a farmer can only say their product is organic if they are registered with a USDA certification agency, such as the ODAFF. Without this, farmers are not allowed to have signs at the farmers market or label their product as organic and they are not allowed to tell consumers that their product is organic. In response, many different options have developed including alternative certification agencies and stronger farmer-to-consumer education.

Alternative certification agencies have evolved in response to the USDA guidelines; while some came from organizations established before the USDA guidelines were implemented, others where created afterward. Some of these agencies were created

as non-governmental alternatives while others have stricter standards than those laid out in the USDA guidelines. The Farmers' Market Consumer Survey used in this research found that 97% of consumers would be satisfied with alternative certifications if they knew that the agency used the same or better guidelines than the USDA.

Though "the government has corrupted the term organic and we always need alternatives…the disadvantage is confusion on the part of the consumer as they are not always fully educated" (Appel and Oakley 2005). If a farmer chooses to use one of these alternate organizations, their largest barrier is educating their consumers about this organization, its rules, and why they chose to use an alternative.

One such organization is Certified Naturally Grown. According to their website, they are "a non-profit alternative eco-labelling program for small farms that grow using USDA Organic methods but are NOT a part of the USDA Certified Organic program" (CNG 2006). This organization works well for growers using direct marketing methods (farmers' markets, CSA, direct resturant selling, etc); they require less paperwork, no fees, are member monitored, and all forms and farmer declarations are publicly accessible online (CNG 2006). Based on the Naturally Grown website directory of farmers, there are currently three farms in Oklahoma registered as Certified Naturally Grown (CNG 2006).

Though many farmers still use the word organic, even if they are not registered with the ODAFF, those who feel compelled to follow the rules but do not want to register, simply increase their consumer communication and education. As David Redhage explains, "they can say 'I am not certified organic but this is what I do;' it's an education thing" (Penick and Redhage 2005). The emphasis is on describing the organic

methods that they implement without saying the word organic. In a few cases, the farmer is already registered with the ODAFF, but since their farm is in transition,[16] they are not allowed to use the word organic either. They use similar educational tactics and may advertise their produce as "naturally grown" or "sustainably grown." But, in Oklahoma, consumers are very accepting; farmer Emily Oakley says that "very few customers have ever had a problem with [us not being certified yet]" (Appel and Oakley 2005).

Sustainable Organic Farming

Just as there is organic and non-organic sustainable farming, there is sustainable and unsustainable organic farming. David Redhage explains that "the focus with USDA is on 'what inputs am I allowed' but it needs to be broader than that" including taking into account the health of the land and what crops are being grown in what areas (Penick and Redhage 2005). Sustainable farming, as advocated at the Kerr Center, takes into account the environmental aspects of farming but also considers the economic and social implications of the farm operations (Horne and McDermott 2001). Additionally, it is important for consumers to keep in mind that "a lot of organic chemicals are not safe" (Penick and Redhage 2005), just because they are allowed under the rules does not mean that they are safe to consume—all organic produce should be washed before being ingested. This point has been the latest focus of much consumer organic education.

Oklahoma's Organic Future

Education will play a large role in determining Oklahoma's organic future. Oklahoma's government and non-profit organizations need to work with farmers to disperse organic methods and farmers need to educate their consumers. Emily Oakley

[16] Transitional farms are applying for organic certification under the USDA but have to farm their land organically for three years before they can become certified because substances not allowed under the guidelines were previously used on the land. This transition period is meant to "clean" the land.

says they "will take the time to explain what organic farming is, even if there are twenty people in line" (Appel and Oakley 2005) but more organic vendors need to be this proactive.

In addition to education, local and corporate grocery stores need to offer produce grown in Oklahoma, especially organic produce, recognizing that the supply is consistent only six or seven months a year. Stores like Wild Oats "should feature in-season local products; their customers are more educated than they think" (Appel and Oakley 2005). Respondents had similar sentiments; one commented "I want stores like Akins and Wild Oats to stock *locally* grown organic produce whenever available. Trucking in organic produce from the coasts seems to defeat the whole concept of sustainable agriculture."

More importantly, Oklahoma needs to reestablish a produce economy with full-time farmers (Appel and Oakley 2005; Walton 2005; Penick and Redhage 2005). Farmers Michael Appel and Emily Oakley explain:

> It was in Bixby but it's not coming back there—sod will always out-price produce and development will always out-price sod…so there is more skepticism about produce farming in Oklahoma; we won't return to the 50s and 60s produce culture. We may not have a revolution, but there is still plenty of room for growth (2005).

The potential for growth, the areas of opportunity, and the requisite knowledge need to be conveyed to current, potential, and future farmers if Oklahoma is to reestablish its produce economy. This research has shown that farmers' market consumers are excited about the growth of locally available produce and organic offerings, but future research, education, and advertising needs to target the larger population.

CHAPTER V

CONCLUSION

The purpose of this research was to investigate the distribution of organic produce in Oklahoma by focusing on its farmers' markets. The research questions and methods used in this research have provided an impression of the status of organic farming in relation to the farmers' markets in Oklahoma. Through this process, the largest barriers to the dispersion of organic produce and knowledge have been revealed and are reiterated below. This research was needed, as little academic work has been done on organic farming or farmers' markets in Oklahoma, though both have great potential for growth.

This research used a Farmers' Market Organic Concentration Survey to compare organic farming in Oklahoma and California. When considering both certified and non-certified organic growers at farmers' markets in Oklahoma and California, Oklahoma had 27.4% organic representation while California had 43.5% organic representation. When non-certified organic farmers are excluded from these calculations, Oklahoma drops to 3.6% organic while California decreases to 33.7% organic. This drop in Oklahoma reveals the current importance of non-certified organic growers in the Oklahoma organic scene.

When looking at experience and indigenous market types, as outlined by Tiemann (2004), markets included in this research showed that indigenous markets offered an

overall greater percentage of produce than experience markets. As the percentage of produce decreased in indigenous markets, the number of experience market qualities increased. The markets in this study did not reflect a strong pattern between the market type and the availability of organic produce. Nor was there a connection between market type and market setting in urban, suburban, or rural locations or in terms of market city populations.

The Farmers' Market Consumer Survey used in this study was conducted in Tulsa, Oklahoma and provided 65 viable surveys. As reflected in farmers' market literature (Brown 2002), the majority of respondents came from the neighborhoods closest to the market. In terms of total produce consumption, 55.5% of respondents buy 26% or more organic produce throughout the year, 41.5% buy 1-25% organic produce, and only 3% reported buying no organic produce throughout the year. Overall, 80% of respondents were satisfied or very satisfied with organic produce availability at the farmers' market while only 30% were satisfied or very satisfied with organic produce availability in Tulsa. Of all the respondents 39% were unsatisfied or very unsatisfied with organic produce availability in Tulsa and 30% were neutral on this matter. Individual zip code groups did not vary widely on their responses.

In regards to the importance of organic produce being certified, 24% thought it was very important, 45% thought certification was somewhat important, and 31% thought it was not important. Consumers who purchase high percentages of organic produce do not vary from these values. Though so many were concerned and somewhat concerned with certification, 91% of respondents said they take the word of the farmer that the produce being sold is organic.

The interviews conducted during this research brought together a number of issues related to organic farming in Oklahoma. Doug Walton has shown the large opportunity available to organic farmers in Oklahoma in terms of market share. Nearly $40 million dollars are spent on organic produce in Oklahoma and farmers there need to keep a larger portion of that revenue in the state by expanding organic farming operations (Walton 2005). Even conventional farming can work harder at keeping the $469 million consumer dollars spent on non-organic produce in Oklahoma (derived from Walton 2005).

This market potential should encourage Oklahoma to expand is agricultural economic base, especially its full-time small farm contribution. Additionally, many outlets are being organized and established to prioritize local organic and non-organic produce. While there are points of encouragement, full-time farmers are contending with part-time farmers who have the flexibility to offer much lower prices. For full-time farmers to succeed, they need established and reliable outlets for their goods. Though there are some successful full-time produce farmers in the state, there is a great deal of room for growth.

Many are hoping that Oklahoma will have a strong certified organic economic base but farmers are currently successful selling non-certified organic produce. Farmers and consumers have expressed dissatisfaction with the government controlling organic certification, farmers are wary of the cost and time involved in the certification process, and so far the demand that produce be certified organic has yet to arise. Until these factors change or organic farmers begin working with wholesale and retail operations, it is likely that non-certified organic produce will continue to do well in Oklahoma. If

certification becomes prominent, there are alternatives for small and part-time farmers who wish to avoid working with the government and the current liability associated with small-farm organic registration. Despite the direction that organic certification moves, it is important to consider practicing sustainable organic methods for a sustainable Oklahoma. Education, product outlets, and the number and size of farms need to grow collectively for Oklahoma to have a reestablished, viable agricultural economy.

Limitations

The major limitations in this research surround the two surveys used to collect information about farmers' markets and farmers' markets consumers. The farmers market survey captured a very small fraction of California farmers' markets and while a larger fraction of Oklahoma markets was captured, neither state is fully represented in these two surveys. Both surveys would have benefited from including more markets from each state. An increase in the number of markets surveyed may improve the farmers' market type analysis above and would have provided a strong enough foundation to support a more robust statistical analysis of organic availability compared to market characteristics.

The consumer survey and its results have two limitations: the number of surveys collected and the resulting zip code group representations. Though I was surprised to obtain 65 viable surveys, many more could have been collected. The weather was not conducive to a high consumer turnout on the day that I attended the market. Even if there had been a high turnout, the survey would have also been strengthened by two or three visits to the Cherry Street market over the course of the market season. Only consumers who had not already completed the survey would be asked to participate. This approach

would also address the variability of farmers' market attendance and would generally expose a greater number of consumers to the survey.

Cumulatively, the surveys provided a general picture of Tulsa farmers' market consumers but once the surveys were split among their respective zip codes of origin, representation became very poor. Even with the creation of the zip code groups, the highest group was represented by ten surveys while the lowest group had only three surveys. These values are not enough to represent the zip code group areas. Because the numbers are so small, averaging the zip code groups did not result in distinguishable variation in the zip code areas. More surveys would need to be collected in order to perform a geographical distribution analysis in relation to consumer demographics, organic opinions, and organic purchasing characteristics.

Geographic Appraisal and Future Research

While this research does not fully explain the patterns of organic produce availability in Oklahoma, it does offer an estimate of organic produce availability in Oklahoma's farmers' markets. Among other types of research, this project provides the first step in conducting a spatial analysis of organic distribution. It also opens the door for other types of geographic research such as the social and cultural barriers to organic dispution, such as the government, consumer education, and the organic culture of Oklahoma.

This work can be built upon to show the change in organic availability in Oklahoma farmers' markets over time. This information is important for determining the factors related to organic distribution in the state such as whether organic produce is more likely to appear in particular areas and to what degree that organic produce is certified.

Studies should examine changes in the popularity and demand for organic produce—based on this research, organic popularity in Oklahoma is likely to grow in the near future but we would benefit from knowing where it will level out in relation to other states and in relation to the organic farmers eager to serve the demand.

Nationwide, a longitudinal study should be done on organic demand and availability to examine the extent that organic consumption is a sustained trend. Research can examine the number of acres being organically farmed compared to the number of acres being farmed by other, largely conventional, methods—this type of study will be a few years off as organic farms, especially in states like Oklahoma, are just beginning to become visible. Finally, geographic research should focus on the location of organic production facilities in relation to current areas of agricultural production—do we see organic farms concentrated in areas of high agricultural activity (like central California, Florida, etc.) or do they break away from these areas? Are organic farms being created anew or are current farms transitioning their operations to organic methods?

Farmers' market research would benefit from similar time and distribution studies that focus on Tiemann's (2004) market type location and development—does the type of individual markets shift over time? What factors are related to type shifting? What factors relate to type development? This research attempted to connect city location to farmers' market type to no avail, but the causes behind type location are most likely complex and multivariate. It would also be beneficial to see if type shifting is related to farmers' market decline and growth. While this information would be useful to farmers' markets nationwide, Oklahoma could use this information to target declining markets and

address their needs in order to grow the farmers' market, and perhaps the agricultural economy, in Oklahoma.

REFERENCES

Appel, Michael and Emily Oakley. 2005. Three Springs Farm. Interview. 11 October 2005.

Brown, Allison. 2002. Farmers' market research 1940-2000: An inventory and review. *American Journal of Alternative Agriculture* 17: 167-176.

Burns, Arthur and Denny Johnson. 1996. *Farmers' market survey repot: Executive summary*. USDA-WAM024. http://www.ams.usda.gov/directmarketing/Publications Summary/wam024.htm Accessed 10 March 2005.

California Federation of Farmers' Markets (CFFM). 2005. http://www.cafarmersmarket s.com/findMarkets. Accessed 5 May 2006.

Chef2Chef. 2005. *Oklahoma farmers' market directory*. http://marketplace.chef2chef. Net.farmer-markets/states/Oklahoma.htm Accessed 16 April 2005.

Certified Naturally Grown (CNG). 2006. Home Page. http://www.naturallygrown.org/. Accessed 24 February 2006.

City-Data. 2006. http://city-data.com. Accessed 8 March 2006.

Colin, Molly. 2003. Elite meat: Shoppers sold on organic produce find its main-course counterpart – certified beef, poultry, and pork – to be elusive. *Christian Science Monito*. 95(159).

Colley, David. 1985. Farm fresh and friendly. *Americana*. July/Aug: 39-41.

Conner, David and Ralph Christy. 2002. Consumer preferences for organic standards: Guiding demand-expansion strategies for organic food. *Journal of Food Distribution Research* 33(1): 46-51.

Crister, Greg. 2001. Mean cuisine: Gone is the Joy of Cooking. Today's celebrity chefs are serving up a menu of global doom and politically twisted snobbery. *Washington Monthly* 33(7/8).

Cummins, Ronnie and Ben Lilliston. 1998. Organic versus "organic": The corruption of a label. *The Ecologist*. July/August. http://www.organicconsumers.org/Organic/orgvsorg.htm. Accessed 24 February 2006.

Economic Research Service (ERS) – United States Department of Agriculture (USDA). 2005. Organic farming and marketing: Questions and answers. *Briefing Room*. http://www.ers.usda.gov/briefing/Organic/Questions/orgqa5.htm. Accessed 7 March 2005.

Goss, Chad. 2005. Organic Coordinator of the Oklahoma Department of Agriculture. Phone interview. 2 September 2005.

Govindasamy, Ramu; John Italia; and Adesoji Adelaja. 2002. Farmers' markets: Consumer trends, preferences, and characteristics. *Journal of Extension* 40(1).

Greene, Gregory. 2004. *The end of suburbia: Oil depletion and the collapse of the American dream*. Video: 90 minutes. Toronto: Electric Wallpaper.

Horne, James E. and Maura McDermott. 2001. *The next green revolution: Essential steps to a healthy, sustainable agriculture*. New York: Hawthorn Press.

Inskeep, Steve. 2005. Sesame Street takes on obesity, healthy diet. *Morning Addition*. Radio program: 30 Mar 2005. http://www.npr.org/template/story/story.php?storyId=4566953 Accessed 15 April 2005

Kerr Center for Sustainable Agriculture. 2005. http://www.kerrcenter.com. Accessed 7 September 2005.

Kremen, Amy; Catherine Greene; and Jim Hanson. 2002. *Organic produce, price premiums, and eco-labeling in U.S. farmers markets*. United States Department of Agriculture VGS-301-01.

Marin County Farmers' Market Association. 2006. *Farmer Application.* http://www.marincountyfarmersmarkets.org/farm/farmer_app_for_web.pdf Accessed 10 March 2006.

Nuyaka Natural Farm (NNF). 2005. Field day. 29 May 2005.

ODA: Oklahoma Department of Agriculture. 1983. *From farm to city: Buy fresh and* direct. Oklahoma City: Marketing Industry Division.

ODA: Oklahoma Department of Agriculture. 1991. *Fresh from the farmers' market*. Oklahoma City: Market Development Division.

ODA: Oklahoma Department of Agriculture. 2004. *Oklahoma farmers' market guide*. Oklahoma City: Mercury Press.

ODAFF: Oklahoma Department of Agriculture, Food and Forestry. 2005a. *Oklahoma organic producers and processors*. Excel file provided by Chad Goss. 2 September 2005.

ODAFF: Oklahoma Department of Agriculture, Food and Forestry. 2005b. *Oklahoma organic products: Rules and regulations*. 2 September 2005.

Payne, Tim. 2002. *U.S. farmers markets – 2000: A study of emerging trends*. United States Department of Agriculture.

Penick, Mary and David Redhage. 2005. Kerr Center for Sustainable Agriculture. Interview. Poteau, OK. 7 September 2005.

Perry, Luddene and Dan Schultz. 2005. *A field guide to buying organic*. Ney York: Bantam Books.

Pyle, Jane. 1971. Farmers' markets in the United States: Functional anachronisms. *Geographical Review* 61(2): 167-197.

Riebel, Linda and Ken Jacobsen. 2002. *Eating to save the earth: Food choices for a healthy planet*. Berkeley: Celetial Arts.

Shakow, Don. 1981. The municipal farmers' market as an urban service. *Economic Geography* 57(1): 68-77.

Shortridge, Barbara G. and James R. Shortridge. 1989. Consumption of fresh produce in the metropolitan United States. *Geographical Review* 79(1): 79-98.

Shulty, Mike. Farmers' Market Marketing Department of the Oklahoma Department of Agriculture. Phone interview. 2 September 2005.

Smith, Kim. 2005. Cherry Street Market Manager. Interview. 1 October 2005.

Struby, Shauna L. 2005. The joy of food: Oklahomans connect with their food roots. *Oklahoma Today* March/April 2005.

Thompson, Gary O. 1998. Consumer demand for organic foods: What we know and what we need to know. *American Journal of Agricultural Economics* 80(5): 1113-1118.

Tiemann, Thomas K. 2004. American farmers' markets: Two types of informality. *International Journal of Sociology and Social Policy* 24: 44-57.

USDA: United States Department of Agriculture. 2005a. *Farmers' Market Facts*. http://www.ams.usda.gov/farmersmarkets/facts.htm Accessed 15 April 2005.

USDA: United States Department of Agriculture. 2005b. *Farmers' markets – Oklahoma*. http://www.ams.usda.gov/statesummaries/Ok/FarmersMarkets.htm Accessed 16 April 2005.

USDA: United States Department of Agriculture. 2005c. *The National Organic Program*. http://www.ams.usda.gov/nop/indexIE. Accessed 10 March 2005.

Waldrop, Bob. 2005. Alternative Food Supplies. *Oklahoma Sustainability Network*. Conference workshop. 8 April 2005.

Walton, Doug. 2005. Community Food Systems Coordinator for the Kerr Center for Sustainable Agriculture. Interview. Muskogee, OK. 14 September 2005.

APPENDIX

This section includes the IRB forms, consent forms, farmers' market survey, consumer survey, and other materials relevant to this project.

APPENDIX A: IRB Approval Letter

Oklahoma State University Institutional Review Board

Date:	Friday, April 08, 2005
IRB Application No	AS0579
Proposal Title:	The Role of the Farmers' Market in Organic Consumption and Production in Oklahoma
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/7/2006

Principal Investigator(s

Kris Gill ✓
1410 S. Delaware Ave.
Tulsa, OK 74104

Alyson Greiner
203 Scott Hall
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,

Sue C Jacobs

Sue C. Jacobs, Chair
Institutional Review Board

APPENDIX B: IRB Modification Letter

Oklahoma State University Institutional Review Board

Date	Tuesday, September 27, 2005	**Protocol Expires:**	**4/7/2006**
IRB Application	AS0579		
Proposal Title:	The Role of the Farmers' Market in Organic Consumption and Production in Oklahoma		
Reviewed and Processed as:	Exempt **Modification**		

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s) :

Kris Gill
1410 S. Delaware Ave.
Tulsa, OK 74104

Alyson Greiner
225 Scott Hall
Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

Signature :

Sue C. Jacobs, Chair, OSU Institutional Review Board

Tuesday, September 27, 2005
Date

The Role of the Farmer's Market in Organic Consumption and Production in Oklahoma

Consumer Consent Form

PURPOSE: The general purpose of this research is to assess the availability of organic produce outlets and production in relation to consumer demand in Oklahoma. This research will focus on consumers in the Tulsa area but will look at farmers' markets, natural food markets and Community Supported Agriculture programs throughout Oklahoma and various parts on the United States in order to identify factors related to organic produce visibility.

PARTICIPATION: This one-time survey will take about 5 minutes and will ask about your purchasing patterns for conventional and organic produce, the places you obtain your produce, reasons why you do or do not purchase organic produce, reasons why you attend the farmers' market, and general personal demographics (ie age, education, household members, income, etc). **All farmers' market customers are welcome to participate, even if it is your first time at the market.** Participation can be withdrawn at any time without reprisal or penalty.

COMPENSATION: No personal compensation will be given for survey participation. Possible benefits of the research may include a more knowledgeable Cherry Street Farmer's Market in relation to its consumer demand, academic and civic education in relation to organic processes, and a completed master's thesis for the researcher.

ANONYMITY: Surveys **will not include any identifying features** such as name, personal contact information, or coded id number. These anonymous surveys will be kept by the researcher, coded for statistical analysis, used for qualitative description, and will be accessible only to those involved in the research.

CONTACT: If you have any questions about this research or would like to contact the researcher for any other reason, you may do so by calling Kris Gill at 918) 712-7082.

SUPERVISION: This research is being conducted under the authority of the Oklahoma State University Institutional Review Board. Any questions should be directed to: Dr. Sue Jacobs, IRB Chair, Oklahoma State University, 415 Whitehurst, Stillwater, Ok 74078 or 405) 744-1676.

Thank you in advance for your participation in this survey.

APPENDIX D: Interview Consent Form

The Role of the Farmer's Market in Organic Consumption and Production in Oklahoma Interview Consent Form

PURPOSE: The general purpose of this research is to assess the availability of organic produce outlets and production in relation to consumer demand in Oklahoma. This research will focus on consumers in the Tulsa area but will look at farmers' markets, natural food markets and Community Supported Agriculture programs throughout Oklahoma and various parts on the United States in order to identify factors related to organic produce visibility.

PARTICIPATION: This interview will take between 10 and 60 minutes depending on your particular knowledge, level of interest and willingness to participate. I will ask broad/informational questions about your particular knowledge as related to organic production/distribution, public education, demand, management, etc. These questions can be build on by both you and the researcher. Participation can be withdrawn at any time without reprisal or penalty.

COMPENSATION: No personal compensation will be given for interview participation. Possible benefits of the research may include a more knowledgeable Cherry Street Farmer's Market in relation to its consumer demand, academic and civic education in relation to organic processes, and a completed master's thesis for the researcher.

ANONYMITY: Interview notes/tapes **will include identifying features** such as name and personal contact information. The use of an audio tape will depend on your given permission. Your identification by name or title will appear in any related reports and is also dependent on your permission. A psydonym will be used is permission is not granted but the interviewee will be identified by role such as 'market seller' or 'academic.' The interviews may be coded for statistical analysis or used for qualitative description, and will be accessible only to those involved in the research.

CONTACT: If you have any questions about this research or would like to contact the researcher for any other reason, you may do so by calling Kris Gill at 918) 712-7082.

SUPERVISION: This research is being conducted under the authority of the Oklahoma State University Institutional Review Board. Any questions should be directed to: Dr. Sue Jacobs, IRB Chair, Oklahoma State University, 415 Whitehurst, Stillwater, Ok 74078 or 405) 744-1676.

OSU
Institutional Review Board
Approved 4/8/05
Expires 4/7/06
Initials DJ
IRB-05-29

Thank you in advance for your participation in this interview.

Permission to: ___use audio tape ___identify by name ___identify by title

Participant Signature:_____ Researcher Signature _____ Date:_____

APPENDIX E: Farmers' Market Organic Concentration Survey

Market:
Address:
Day/Time:

Notes:
-weather
-attendance
-sellers
-consumers
-site
-neighborhood

Total Vendors:_____ [Produce :_____]

Stall	Type	Organic	Percent	Labeled	How	Notes
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

APPENDIX F: Farmers' Market Consumer Survey[17]

The Role of the Farmers' Market in Organic Consumption and Production in Oklahoma

Consumer Survey

Demographics:
Zip Code:_____ Sex:_____ Do you own your home: Yes No

Your age: a) 18-20 b) 21-30 c)31-40 d) 41-50 e) 51-60 f) 61+

Highest level of education:
a) Some Secondary b) High School/GED c) Some College d) Bachelors e) Masters/PhD

How many children (under 18) reside in your household: _____

Total number of people in your household (include children): _____

Total household income:
a) $0-$24,999 b) $25,000-$49,999 c) $50,000-$74,999 d) $75,000-$99,999 e) $100,000+

Directions: Please circle or X the appropriate answer. "Organic" produce refers *both* to certified and non-certified organic produce.
1) Have you ever purchased organic produce? Yes No

2) About what percent of your purchased produce (from all sources) is organic?
a) none b) 1-25% c)26-50% d) 51-75% e) 76-100%

3) About what percentage or your organic produce comes from the farmers' market?
a) none b) 1-25% c)26-50% d) 51-75% e) 76-100%

4) How important is it that organic produce at the farmers' market be certified organic?
Not Important Somewhat Important Very Important

5) Would you be satisfied with alternative certifications (ie certified 'naturally grown') if you knew that they used the same guidelines as USDA certified organic produce?
Yes No
Comments:_____

6) Do you take sellers at their word that their produce is organically grown? Yes No

7) Which is more important to you?: Buying Local or Buying Organic

8) Where else do you buy your organic produce (please be specific ie Wild Oats, Albertsons…)
_____

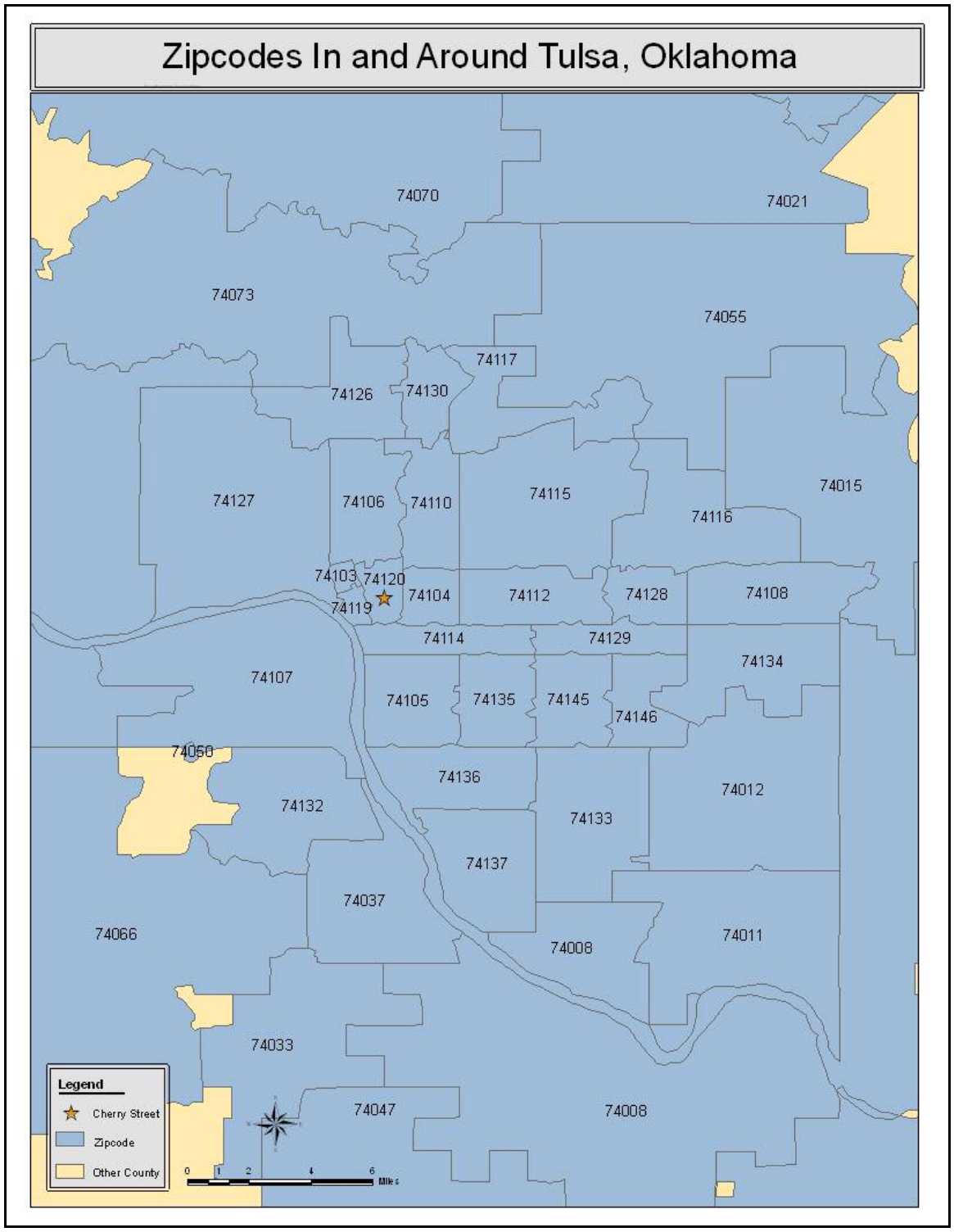
9) How satisfied are you with the availability of organic produce at the farmers' market:
a) Very Satisfied b) Satisfied c) Neutral d) Unsatisfied e) Very Unsatisfied f) N/A

10) How satisfied are you with the availability of organic produce in your city:
a) Very Satisfied b) Satisfied c) Neutral d) Unsatisfied e) Very Unsatisfied f) N/A

Please put additional comments about the farmers' market or organic produce on the back of this form →
→ → → → →

[17] This survey has been reduced to fit within the format of this paper – the original survey was in 14 and 12 point fonts.

APPENDIX G: Zip Code Map of Tulsa, Oklahoma



APPENDIX H: Consumer Survey Results

The Role of the Farmers' Market
in Organic Consumption and Production in Oklahoma
Consumer Survey

Demographics:
Zip Code:_____ Sex: **71% F, 29% M** Do you own your home: Yes **75%** No **25%**

Your age: a) 18-20 b) 21-30 **17%** c)31-40 **15%** d) 41-50 **22%** e) 51-60 **31%** f) 61+ **15%**

Highest level of education:
a) Some Secondary b) High School/GED c) Some College d) Bachelors e) Masters/PhD
0% **5%** **29%** **32%** **34%**
How many children (under 18) reside in your household: 0: **80%** 1: **15%** 2: **5%**

Total # of people in your household(include children): 1: **29%** 2: **43%** 3: **19%** 4: **9%**

Total household income:
a) $0-$24,999 b) $25,000-$49,999 c) $50,000-$74,999 d) $75,000-$99,999 e) $100,000+
8% **29%** **28%** **17%** **18%**
Directions: Please circle or X the appropriate answer. "Organic" produce refers *both* to certified and non-certified organic produce.
1) Have you ever purchased organic produce? Yes **95%** No **5%**

2) About what percent of your purchased produce (from all sources) is organic?
a) none b) 1-25% c)26-50% d) 51-75% e) 76-100%
3% **41.5%** **25%** **21.5%** **9%**
3) About what percentage or your organic produce comes from the farmers' market?
a) none b) 1-25% c)26-50% d) 51-75% e) 76-100%
6% **32%** **22%** **14%** **26%**
4) How important is it that organic produce at the farmers' market be certified organic?
Not Important Somewhat Important Very Important
23% **52%** **25%**
5) Would you be satisfied with alternative certifications (ie certified 'naturally grown') if you knew that they used the same guidelines as USDA certified organic produce?
Yes **97%** No **3%**

6) Do you take sellers at their word that their produce is organically grown? Yes **91%** No **9%**

7) Which is more important to you?: Buying Local or Buying Organic
72% **20%** **8% Both**
8) Where else do you buy your organic produce (please be specific ie Wild Oats, Albertsons…)
various responses – Wild Oats listed by 75% of respondents

9) How satisfied are you with the availability of organic produce at the farmers' market:
a) Very Satisfied b) Satisfied c) Neutral d) Unsatisfied e) Very Unsatisfied f) N/A
35% **45%** **17%** **3%**
10) How satisfied are you with the availability of organic produce in your city:
a) Very Satisfied b) Satisfied c) Neutral d) Unsatisfied e) Very Unsatisfied f) N/A
4.5% **26%** **31%** **31%** **7.5%**

VITA

Kris E. Gill

Candidate for the Degree of

Master of Science

Thesis: THE ROLE OF THE FARMERS' MARKET IN ORGANIC CONSUMPTION AND PRODUCTION IN OKLAHOMA

Major Field: Geography

Biographical:

Education:

Bay Path College, Longmeadow, MA
School for International Training, Amsterdam, Netherlands
Mills College, Oakland, Ca
B.A. Sociology and Anthropology, 2003
Oklahoma State University, Stillwater, Ok
M.S. Geography and GIS Certificate, (May 2006)
Phi Kappa Phi National Honor Society

Experience:

Defense Logistics Agency, US Government DCMDW, Downey, CA
Contract Administrator Assistant, GS-03003-01
April 1999 – August 1999
Information Technology Services, Bay Path College, Longmeadow, MA
Help Desk and Technical Assistant
August 1999 – May 2000
Computing and Network Services, Mills College, Oakland, CA
Technical Assistant
August 2000 – July 2003
Department of Geography, Oklahoma State University, Stillwater, OK
Teaching Assistant: Physical Geography Lab Instructor
January 2004 – May 2006
Enercon Services, Tulsa, OK
GIS Technician
February 2006 – Present (May 2006)

ABSTRACT

This research examines the connection between organic farming and the farmers' market in Oklahoma. It specifically addresses the barriers to the dispersion of organic knowledge and farming in the state in relation to the availability of organic produce in the farmers' markets and the issues surrounding organic certification through the Oklahoma Department of Agriculture. Methods include a farmers' market survey that counted vendors, vendor types, and qualitatively assessed each market according to defined market types. This survey included markets in California, an example of an established organic state, for the purposes of comparison. A separate survey was given at a farmers' market in Tulsa to collect consumer opinions about organic produce and its availability in the farmers' market and in the city as a whole. Interviews were conducted with state and non-profit employees, farmers and others related to these issues. This research found that consumers trust a farmer who claims that their produce is grown organically even when these farmers are not certified through the state. These non-certified organic farmers have abstained from the legally required registration for a number of reasons including the cost and requirements of the certification process as well as a verbal dissatisfaction with governmental intervention. As this group represents nearly a quarter of vendors selling at the farmers' markets in Oklahoma, as well as 86% of the organic growers selling at the markets, their opinions and speak directly to the future of organic farming in Oklahoma. The results of this research provide a foundation for many different types of future analysis including the distribution of organic farms in relation to current centers of agriculture and the farmers' markets type in relation to organic produce availability.

ADVISER'S APPROVAL: Alyson Greiner

Name: Kris E. Gill Date of Degree: May, 2006

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: FARMERS' MARKETS AND ORGANIC PRODUCE IN OKLAHOMA

Pages in Study: 90 Candidate for the Degree of Master of Science

Major Field: Geography

Scope and Method of Study:

This research examines the connection between organic farming and the farmers' market in Oklahoma. It specifically addresses the barriers to the dispersion of organic knowledge and farming in the state in relation to the availability of organic produce in the farmers' markets and the issues surrounding organic certification through the Oklahoma Department of Agriculture. Methods include a farmers' market survey that counted vendors, vendor types, and qualitatively assessed each market according to defined market types. This survey included markets in California, an example of an established organic state, for the purposes of comparison. A separate survey was given at a farmers' market in Tulsa to collect consumer opinions about organic produce and its availability in the farmers' market and in the city as a whole. Interviews were conducted with state and non-profit employees, farmers and others related to these issues.

Findings and Conclusions:

This research found that consumers trust a farmer who claims that their produce is grown organically even when these farmers are not certified through the state. These non-certified organic farmers have abstained from the legally required registration for a number of reasons including the cost and requirements of the certification process as well as a verbal dissatisfaction with governmental intervention. As this group represents nearly a quarter of vendors selling at the farmers' markets in Oklahoma, as well as 86% of the organic growers selling at the markets, their opinions and speak directly to the future of organic farming in Oklahoma. The results of this research provide a foundation for many different types of future analysis including the distribution of organic farms in relation to current centers of agriculture and the farmers' markets type in relation to organic produce availability.

ADVISER'S APPROVAL: Alyson Greiner