Food accessibility in Southern Arizona: Mapping the growth, trajectory, and market base of Tucson farmers' markets

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Executive Summary

Farmers' markets have grown recently in both size and number across the United States and in the Tucson Urban Area (TUA). Farmers' markets are sites where fresh, local produce is sold direct to consumers by farmer vendors. Their history in Tucson dates to 1919 when the first public market opened with its trucks and wagons where farmers sold their farm-grown produce. Then, after an absence of at least four decades, Tucson's first contemporary farmers' market opened in the downtown area in 1985. During the 2015 and 2016 seasons, twenty farmers' markets operated within the TUA, mirroring the rapid growth of farmers' markets nationally (USDA 2016).

This white paper considers whether the recent business growth of farmers' markets has unfolded in ways that improve food access for Tucson's residents. First, we find that overall accessibility to farmers' markets has steadily increased over the past thirty years. Nearly one-quarter of the TUA's population currently lives within one mile of a farmers' market, while just 6% of the population lived as close only thirty years previously.

However, geospatial analysis also clearly indicates that access to the locally-grown fresh fruits and vegetables sold at farmers' markets has not increased evenly across all demographic groups in the TUA. Tucson farmers' markets tend to locate in areas with relatively low rates of poverty and low proportions of Hispanic and Latino residents. Areas such as Tucson's south side, for example, have remained underserved by farmers' markets. The underserved areas have higher proportions of children and households without access to a vehicle, making easy access to fresh produce an even more critical concern.

The farmers' markets operated by the Community Food Bank of Southern Arizona are an exception to this pattern. Over the past twenty years, the Community Food Bank has opened six farmers' markets, three of which remain in operation today. These markets are unique in the TUA in that they are located in neighborhoods where poverty rates are relatively high and Hispanic/Latino residents predominate. Additionally, geospatial analysis demonstrates that the farmers' markets operated by the Community Food Bank fill important gaps in food access by locating within or near food deserts identified by previous MAP-funded research (Tong, Buechler, and Bao 2016). Food deserts are areas in which no chain supermarkets or independent stores selling food are located.

This analysis finds that over time, many farmers' markets locations are temporary and semi-transient. This impermanence, readily apparent in this longitudinal analysis, may actually contribute to increased food insecurity by initially providing a promise of increased access that vanishes when a particular market location closes a few seasons later. Moreover, most farmers' markets are only open one day per week, and one Community Food Bank market is only open for six months of the year. These forms of temporal and spatial impermanence pose a constraint on the ability of farmers' markets to improve access to fresh, locally grown produce.

Yet, this analysis finds that farmers' markets also serve important functions beyond facilitating food access. Farmers' markets also connect people to each other in ways that form more

cohesive communities. Through eighteen months of ethnographic research, this analysis identifies four sets of shopping practices that various customers utilize at Tucson's farmers' markets, each with a different focus and orientation.

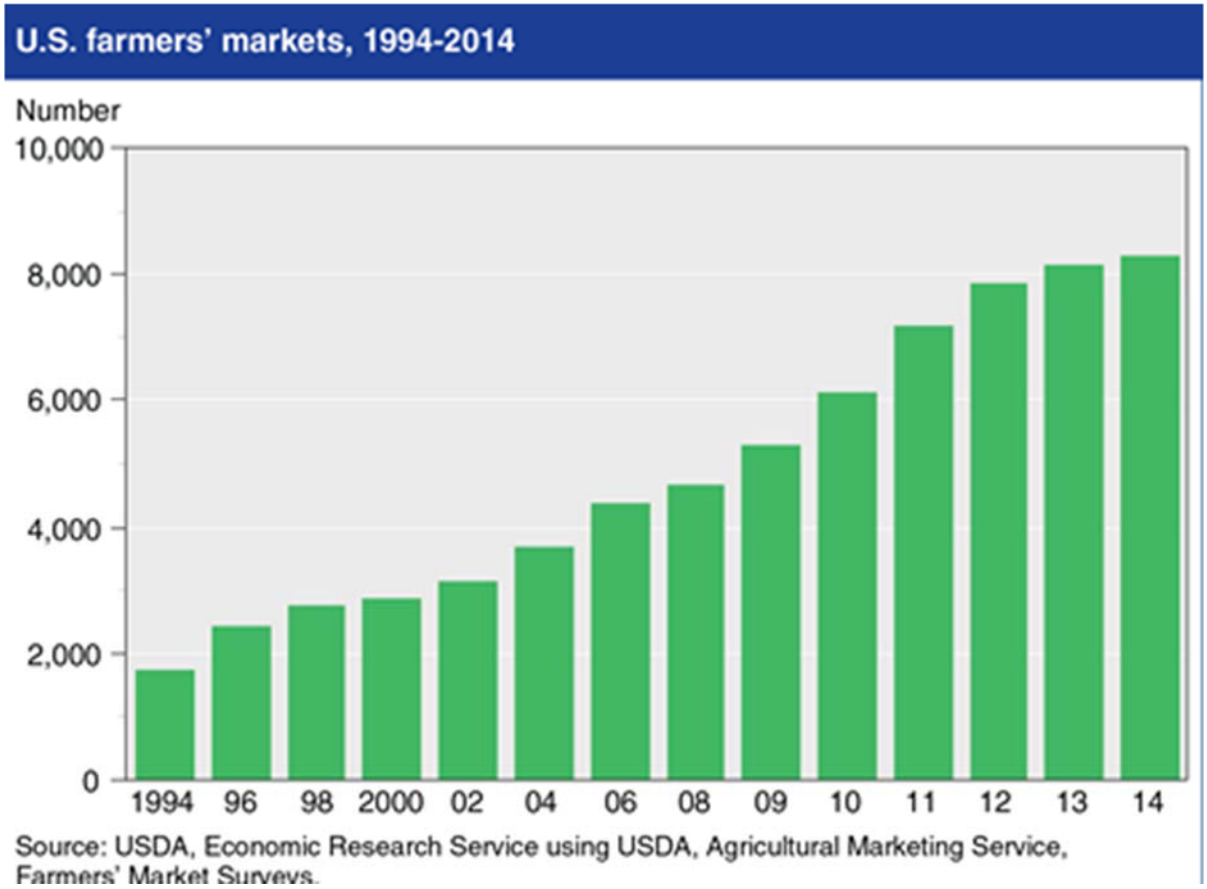
The first prototypical practice, *Ideological Acquisition*, is used by consumers for whom ethical and/or environmentally sustainable food acquisition is a critical moral choice tied closely to their lifestyles and identities. The second prototypical practice, *Pragmatic Provisioning,* utilizes the farmers' market as one of several venues from which to acquire the best value in food at the lowest cost. The third prototypical practice, *Recreational Shopping,* involves attending the market as a leisure activity that provides entertainment and an escape from routine daily life. Fourth, *Community Networking* practices employ the market to reinforce relationships with others who consumers regard as like-minded individuals with whom they also interact at other third place locations.

The human population and retail composition of the area surrounding a farmers' market has a strong impact on the ability of that market to attract consumers utilizing various of these prototypical practices. This analysis indicates that based on their co-location with other retail outlets, the sites of most of Tucson's current farmers' markets are best suited to facilitating the practices of recreational shopping and community networking. Future farmers' market growth in the TUA has the possibility of potentially benefitting both consumers and producers of food if this growth unfolds in ways that provide better access for Tucson's vulnerable populations.

Introduction

Over the last two decades in the US, farmers' markets have seen a rise in prevalence and popularity as a form of food retail institution that differs considerably from existing food retail institutions (see Figure 1). Yet, in an earlier form known as public markets, marketplaces that cluster multiple farmers together to sell directly to consumers have existed for a longer period of time. Farmers' markets represent an increasingly important actor in issues of food accessibility and environmental sustainability, both locally and internationally. Farmers' markets permit small businesses to sell locally produced food to diverse groups of local residents without having to commit to a permanent retail location.

Figure 1



In the Tucson area, public markets then farmers' markets have been a part of the community for a long time, with their historical locations sharply impacted by many cultural and social factors, as explained in Appendix 1.

While overall business growth in the Tucson metro area lags behind other urban areas in the Western U.S. (MAP 2014), farmers' markets have grown substantially in both number and size. In approximately three decades, the number of farmers' markets in the Tucson Urban Area grew

from one to more than twenty, mirroring the rapid national growth of farmers' market over the same period (USDA 2016). Farmers' markets have been positioned as key actors in a wider movement towards healthy, environmentally sustainable, and socially just alternatives to industrial, mass-market agriculture and food retail (Thompson and Coskuner□Balli 2007; Alkon 2008). They have also been proposed as a partial solution to the food accessibility problems encountered by individuals and families living in poverty (Payne et al. 2013; Project for Public Spaces 2013). Tucson has one of the highest rates of poverty among Western US urban areas (MAP 2014), making accessibility to food even more critical. However, the question remains: has the recent business growth of farmers' markets unfolded in ways that improve food access for Tucson's residents? In this white paper, we assemble data to address this question, building on the research reported in previous MAP white papers (Tong, Buechler, and Bao 2016)

This report is organized as follows: The first section profiles the socioeconomic characteristics of farmers' market areas by census tract. This allows a rough analysis of which populations are served or underserved by the locations where farmers' markets operate. Section 2 provides more detailed analysis for each farmers' market by using US Census data to provide a profile of the residents of a 1-mile radius around each farmers' market. These profiles are provided for three time periods: 1985-1994, 1995-2004, and 2005-2014. This section considers whether the profiles of residents living within a mile of a farmers' market have changed over time. Section 3 summarizes ethnographic results regarding the sets of shopping practices used by farmers' market customers. These qualitative results provide a deeper understanding of the functions farmers' markets serve in consumers' lives, beyond simply being a location in food distribution systems. The fourth section considers the retail environment that is contained in the 1 square mile surrounding each farmers' market. These results point to the varied functions that different farmers' markets may serve in the Tucson area. Supplemental materials can be found in appendices following the Conclusion section.

1. Socioeconomic characteristics of farmers' market areas at census-tract level

A. Growth and Dispersion of Farmers' Markets

Farmers' market growth in the Tucson Urban Area has been both rapid and volatile over the past thirty years. As illustrated by Figure 2, the number of operating farmers' markets increased nearly exponentially between 1985 and 2015. It is important to note that many of these markets did not operate for the entire duration of each period of analysis (See Appendix 2 for methodological details).

For our analysis we include tracts and farmers' markets that fall within the Tucson Urbanized Area (TUA), as defined by the US Census Bureau. Of the 64 farmers' markets that opened in the TUA during the past thirty years, 46 have closed (See Figure 3). The average lifespan of these farmers' markets was 3.8 seasons, with 38 markets closing after one or two seasons of operation. Only five markets have operated at the same site for more than ten years, and only two for longer than twenty years.

Figure 2

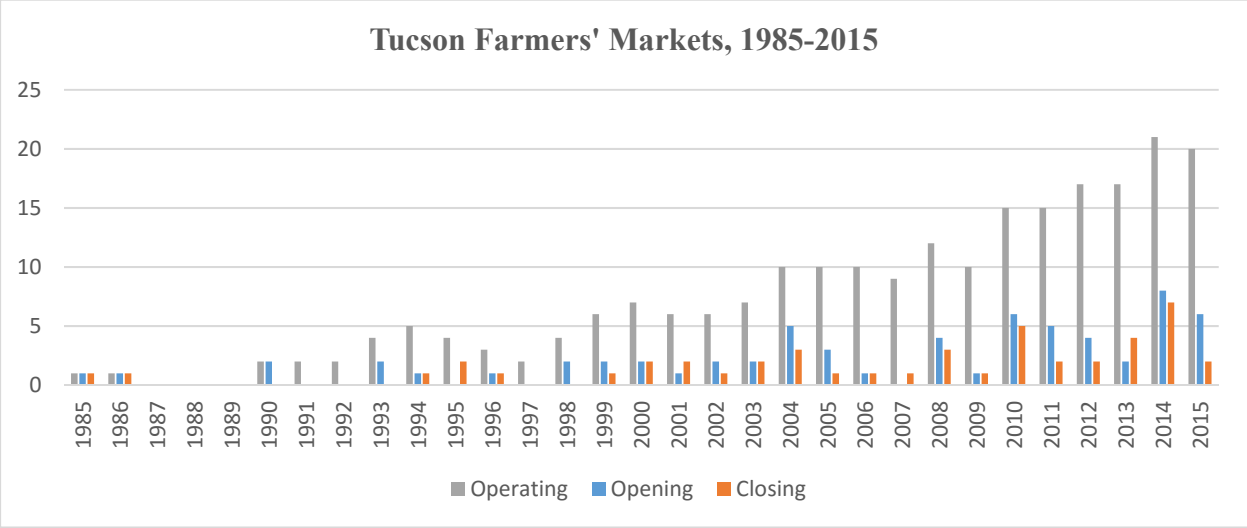
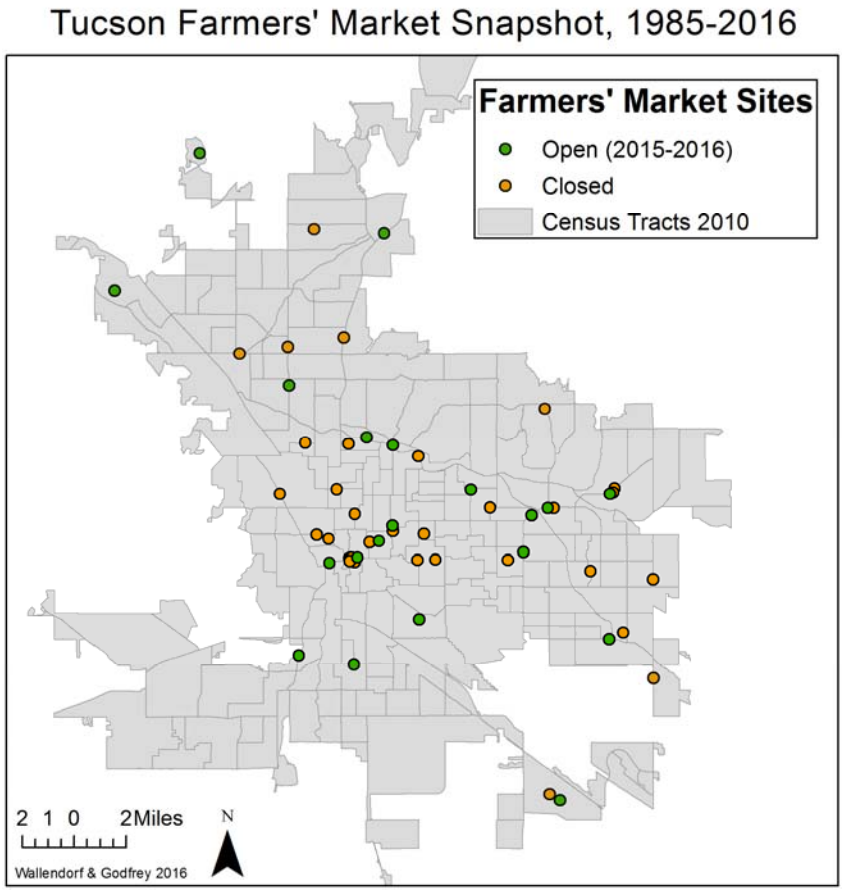


Figure 3



To understand how the changing number of local farmers' markets has impacted access for Tucson's residents, we measure the distance from census tracts to the nearest farmers' market. In

doing so, we recognize that based on workplace locations and complex travel patterns, consumers do not always visit the farmers' market nearest their residence (Mack and Tong 2015). However, measuring distance from the residence to the farmers' market provides a simple yet informative measure of farmers' market accessibility. This method also mirrors the measure used by the United States Department of Agriculture to identify access to grocery stores (i.e., where lack of access is termed "food deserts") (Ver Ploeg et al. 2009).

We calculate straight-line Euclidean distance from the center point of each census tract to its nearest farmers' market. Based on farmers' markets operating during the 2015-2016 seasons, contemporary census tracts in the Tucson Urban Area (TUA) are located an average of 2.42 miles from a farmers' market. More than half of the population lives in tracts less than two miles away from the nearest farmers' market, and nearly one-quarter of the population lives in tracts less than one mile away (see Table 1).

Table 1: Contemporary Distance from Census Tracts to Nearest Farmers' Market (2015-2016 markets)

Distance	< 1 mile	1 - 2 miles	2 - 3 miles	3 - 4 miles	>5 miles	*Avg.*
Tucson Urbanized Area Population	183,439 23.9%	258,689 33.8%	178,392 23.3%	79,438 10.4%	65975 8.6%	*2.42 miles*

To observe temporal change in farmers' market accessibility, we also calculate this distance for three previous decades centering on the 1990 (using markets that operated between 1985-1994), 2000 (using markets that operated between 1995-2004), and 2010 censuses (using markets that operated between 2005-2014). Table 2 provides a summary of this historical analysis. The distance from Tucson's census tracts to its farmers' markets has declined substantially over the past three decades. This decrease is due to the rapid growth in the number of farmers' markets operating at any given time.

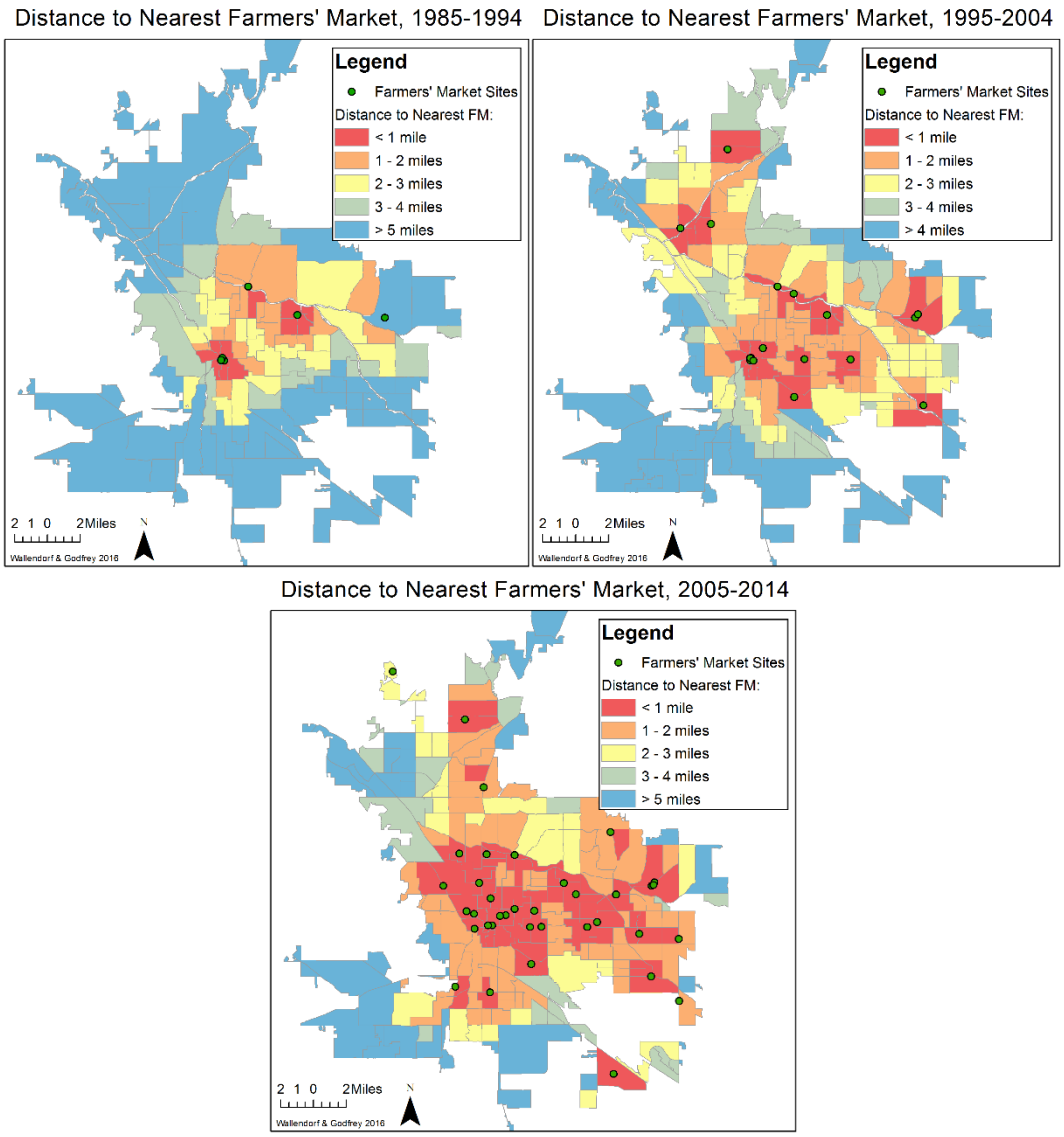
Table 2: Distance to Nearest Farmers' Market, 1985-2014

	1985-1994	1995-2004	2005-2014
Population (Tucson Urban Area)	547,901	693,666	765,933
< 1 mile of Farmers' Market	6.4%	18.4%	38.1%
1 - 2 miles	18.9%	33.6%	34.6%
2 - 3 miles	21.4%	22.0%	10.7%
3 - 4 miles	15.3%	12.9%	7.1%
>5 miles	38.0%	13.1%	9.4%
Average Distance (Tract to Farmers' Market)	4.60	3.16	2.17

Figure 4 maps these trends geographically. However, these maps show that market access has not increased uniformly across the TUA. Most farmers' markets have been located in the central

and eastern portions of the urban area, while regions in the south, southwest and northwest have benefitted far less from the growth of local farmers' markets. Which populations have benefitted and which have been left out? In the following section, we discuss some of the socio-economic characteristics of the neighborhoods with differentiated access to farmers' markets.

Figure 4: Distance to Nearest Farmers' Market[1], 1985-2014



[1] Measured from center of census tract before clipping to fit Tucson Urbanized Area, leading some tracts to indicate high distance to a farmers' market when a market may be very close to a portion of the tract. Each map includes any farmers' market that operated for at least one season during the time period, so actual year-to-year accessibility is much lower.

B. Socio-economic characteristics and farmers' market access

The socio-economic data in the first two data analysis sections of this paper were obtained from US Census Bureau reports downloaded from Social Explorer's online databases. These include data from the 1990 and 2000 decennial census and from the 2010-2014 American Community Survey (ACS). The ACS (also conducted by the US Census Bureau) was used because it provides the best estimates of demographic data for comparison with the same estimates for previous census years.[2]

In the Tucson Urban Area, many farmers' markets have located near or adjacent to more affluent regions of the city. With the exception of sites in the downtown area, farmers' markets appear to not locate in areas with high levels of poverty. Figure 5 shows how the growth of farmers' markets, particularly from 1985-2004, favored regions with low poverty rates. These include Marana and Oro Valley in the north and northwest, the Catalina Foothills in the north, and the far eastern portions of the City of Tucson. A notable exception to this trend have been the farmers' markets operated by the Community Food Bank of Southern Arizona, which has operated markets at six sites in areas with relatively high poverty rates, concentrated on the southside and in central Tucson.

Tucson's Hispanic and Latino/a population has also been notably underserved by the dispersion of farmers' markets across the urban area. Figure 6 maps the ethnic composition of areas with and without farmers' markets. Again, it is noteworthy that all but one of the 2005-2014 farmers' markets located in predominantly Hispanic or Latino tracts are operated by the Community Food Bank of Southern Arizona. The only exception is a farmers' market located within a retirement community of mobile homes.

[2] These demographic estimates were previously conducted in conjunction with decennial censuses, but beginning in 2005 estimates were reengineered as a separate ACS survey from the short-form enumeration form completed during the decennial census.

Figure 5: Census Tract Poverty Rate[3] and Farmers' Market Locations, 1985-2014

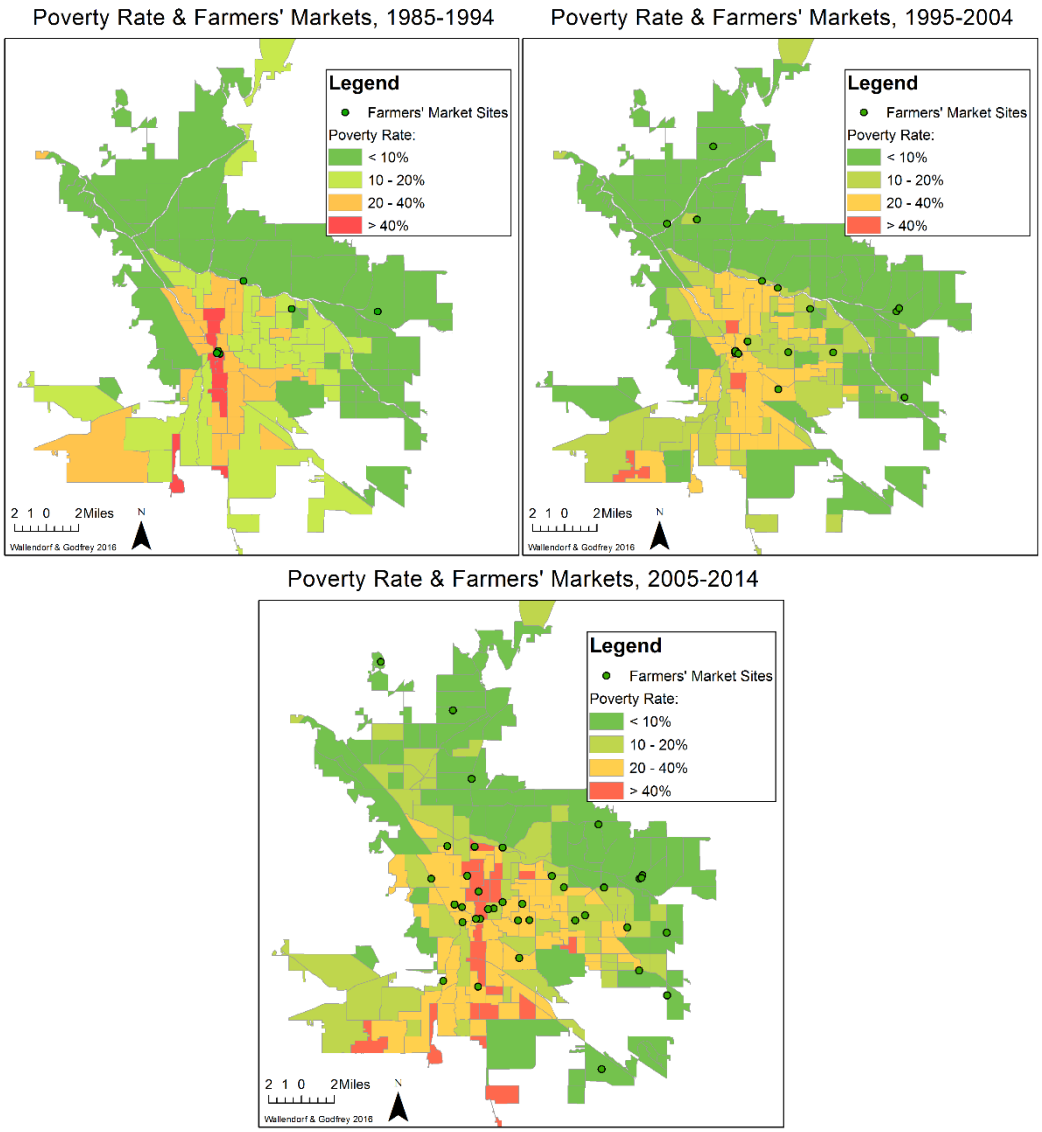
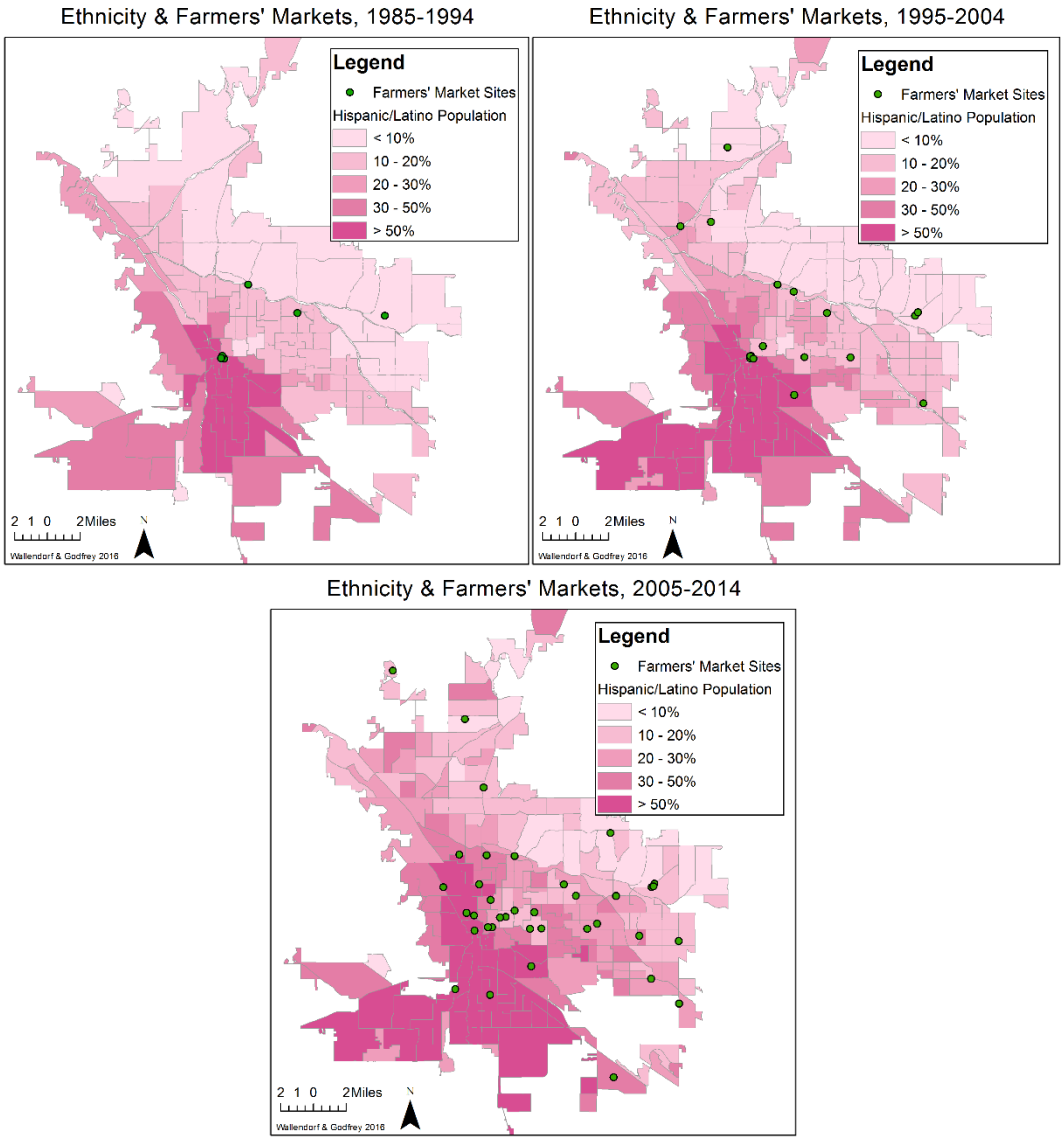
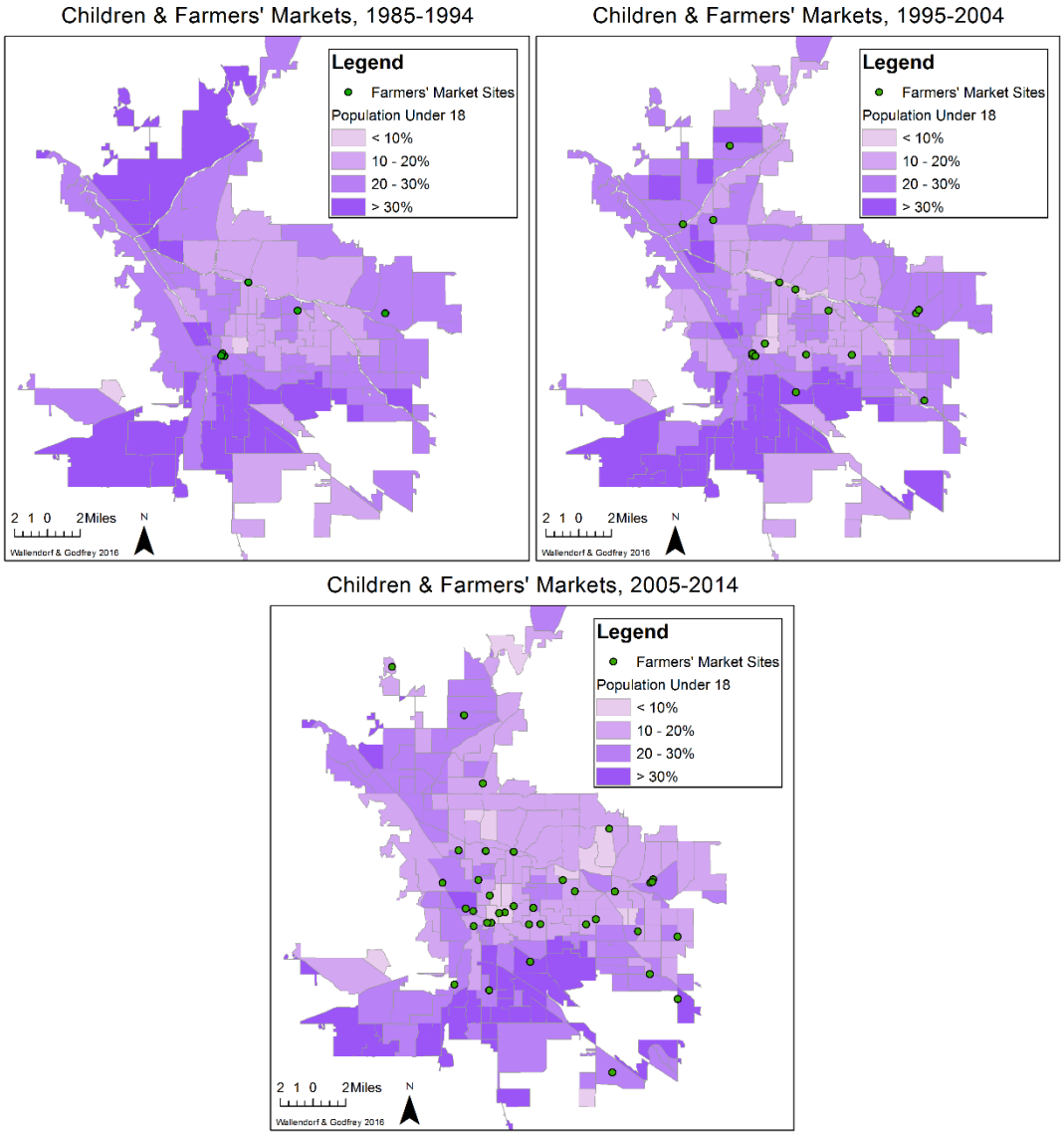


Figure 6: Hispanic/Latino Ethnicity and Farmers' Market Locations, 1985-2014



Similarly, children have historically been underserved by Tucson's farmers' markets (Figure 7). Many of the regions with high proportions of children under 18 are the same as those with high proportions of Hispanic or Latino/a residents and people living below the poverty line. Most farmers' market sites have been located away from tracts with these demographic characteristics.

Figure 7: Under 18 Population and Farmers' Market Locations, 1985-2014



The regions underserved by Tucson's farmers' markets also appear to be lower in terms of median income, social status (See Appendix 2 for details regarding this measure which is an index comprised of level of education and status of current occupation), and access to personal vehicles. Additional maps, including population density, median income, income distribution, and vehicle access for census tracts, are included in Appendix 3. These results reflect findings from previous studies that farmers' market customers across the U.S. tend to be predominantly white, middle- and upper middle-class consumers (Brown 2002; Onianwa and Wheelock 2005) and in Tucson, specifically (Mack and Tong 2015). These results also mirror studies of food deserts, which indicate that lower income and minority populations face lower access to healthy and affordable foods (Talukdar 2008; Coleman-Jensen, Gregory, and Singh 2014).

While farmers' markets provide many benefits to both producers and consumers, it is important to consider their accessibility to all of Tucson's population. The next section discusses the socio-economic characteristics of each of the farmers' markets that has operated in the TUA over the past thirty years, digging deeper into the characteristics of farmers' market locations.

2. Socioeconomic Characteristics of 1-mile radius area for each Farmers' Market

This section describes the socio-economic characteristics of the trade areas surrounding each of Tucson's farmers' markets. While some markets have a very large area from which they draw customers, we focus here on the geographic area within a one-mile radius of the market because that is the population that has the easiest access to that market, even without a car. Vehicle access is an important issue in this analysis because, as shown in Table 1, the percentage of households without a car can be as high as one-third in some of these areas. Additionally, the characteristics of immediate neighborhoods also provide farmers' market organizers with cues that may influence their location decisions.

We calculate these market-level demographics by proportionally allocating population and socioeconomic indicators (e.g,.median income) based on the area of each census tract falling within a one-mile radius area surrounding each market site. Details of this allocation process are included in Appendix 2.

A. 1985-1994 Time Period

Table 3 shows select socioeconomic characteristics of the surrounding area for farmers' markets that were in operation during the 1985-1994 time period, using data from the 1990 US Census. Each farmers' market is identified by a number that corresponds to a market held at a particular location and time. If the market moves or changes which days it is held over time, a new ID number is assigned. Each market is also identified by the address where it was located during this time period, so it can also be found on the maps in this report.

At the bottom of Table 3 are shown comparable characteristics for the average of all markets open during this time period, as well as for the Tucson Urban Area (TUA) and for Pima County. During this time period, four farmers' markets were located in areas with median income substantially below that of the TUA or of Pima County, two were in areas with median income roughly comparable to the TUA and Pima County, and only one was in an area with median income substantially above that of the TUA and Pima County.

The next column in Table 3 reports a measure of the asymmetry of the income distribution in the 1-mile radius area. A ratio of 1.0 would reflect a normally distributed curve for income. Numbers above 1.0 reflect positive skew, indicating the presence of a long high-income tail on the distribution. These ratios make clear the fact that those farmers' markets located in relatively low median income areas nonetheless are in areas with a positive skew to the income distribution, indicating the presence of some pockets of higher income households within that area. Such distributions are often characteristic of areas that are beginning the process of gentrification.

Table 3: Select Socioeconomic Characteristics of Farmers' Market areas, 1985-1994

ID	Address	Median Income	Income Ratio[4]	Social Status Score	Total Population	Total Households	Under 18 population	Poverty Rate	Hispanic Population	Households w/o vehicle
9	2960 N. Swan Road	$43,788	1.21	41.34	11,027	5,115	19.7%	14.9%	11.5%	6.6%
10	8987 E. Tanque Verde Road	$73,115	1.06	42.71	1,328	524	22.9%	4.8%	8.4%	3.8%
67	135 S. Sixth Ave	$21,691	1.55	38.30	12,215	4,823	20.1%	40.4%	45.4%	32.4%
78	4280 N. Campbell Ave	$43,623	1.22	42.53	7,626	3,774	17.6%	19.5%	12.1%	9.3%
79	135 S. Sixth Ave	$21,691	1.55	38.30	12,215	4,823	20.1%	40.4%	45.4%	32.4%
80	48 E Pennington St	$22,527	1.52	38.43	12,776	5,119	20.1%	39.9%	45.5%	31.0%
81	73 W Broadway Blvd	$22,658	1.54	37.66	12,024	4,940	22.5%	41.6%	52.0%	31.5%
	All 7 Farmers' Markets	**$35,585**	**1.38**	**39.90**	**9,887**	**4,160**	**20.5%**	**28.8%**	**31.5%**	**21.0%**
	Tucson Urbanized Area (109 Tracts)	$46,814	1.21	38.82	5,027	2,013	24.7%	17.5%	26.3%	9.8%
	Pima County (113 Tracts)	$46,817	1.21	38.82	5,871	2,307	24.9%	16.7%	24.4%	9.1%

[4] An estimate of income distribution, calculated using the ratio of median to mean income. A value of 1.00 approximates a state of income equity, while larger or smaller values represent income equality that is either positively or negatively skewed, respectively.

The social status score reports a combined index of social status based on education levels and current occupations of each tract's residents. We use the Four Factor Index of Social Status (Hollingshead 2011), assigning the Index's weights for education level and occupation category. Details are provided in Appendix 2.

Higher numbers reflect an area's higher average social status levels—with more prestigious occupations (e.g., doctor, lawyer) and higher education levels. This shows a different picture than that reflected by income alone. All of the farmers' markets are located in areas with an average social status level that matches or exceeds averages for the TUA and Pima County. This means that while many of the residents are not high income earners, they are well educated and in occupations with higher levels of status. In Bourdieu's (1979/1984) terms, these trade areas seem to include substantial numbers of people who have greater cultural capital than economic capital.

The population column provides an indicator of the population density of each of these 1-mile radius areas. Not surprisingly, the farmers' market located in the highest income area also shows the lowest population density, both in terms of population and number of households. Farmers' markets during this time period average just under 10,000 population and around 4 – 5,000 households in their 1-mile radius. These are higher than the with the TUA and Pima County tract population averages.

The percent of the population in the 1-mile radius area who are under the age of 18 is included because of the particular importance of nutritional quality and access to fresh fruits and vegetables for growing children. However, all of the farmers' markets are located in areas with a lower percentage of children than is characteristics of the TUA or Pima County.

Similarly, the percent of the population in the 1-mile radius area who live below the poverty line is included because of the particular importance for low income populations having convenient access to fresh fruits and vegetables, particularly as fresh produce is often not carried by smaller independent food retail stores in low income areas where large supermarkets are often absent (Chung and Myers 1999). Five of the farmers' markets operating in this time period are in areas with a higher percentage of people living below the poverty line than the averages for the TUA and Pima County. Four of those five farmers' markets are located in areas with a higher percentage of Hispanics than in the TUA or Pima County. Those same four farmers' markets are located in areas with a much higher percentage of households without a car than is characteristic of the TUA or Pima County.

B. 1995-2004 Time Period

So how does the picture change as we move to a later time period: from 1995-2004? The population statistics in Table 4 are drawn from the 2000 US Census. Most striking is the dramatic expansion in the number of farmers' markets. While there were only 7 markets in existence during the 1985-1994 time period, there were a total of 21 markets in operation during the 1995-2004 period. A tripling of retail locations in a 10-year period is considered very rapid growth in any industry.

Table 4: Select Socioeconomic Characteristics of Farmers' Market areas, 1995-2004

ID	Address	Median Income	Income Ratio[5]	Social Status Score	Total Population	Total Households	Under 18 population	Poverty Rate	Hispanic Population	Households w/o vehicle
	Community Food Bank Markets									
15	3003 S. Country Club Road	$38,376	1.24	33.94	9,317	2,810	32.6%	29.0%	66.7%	10.9%
	All Other Markets	$49,436	1.28	42.16	10,412	4,366	19.4%	17.7%	26.7%	15.6%
9	2960 N. Swan Road	$44,207	1.28	42.99	11,505	5,675	18.8%	13.7%	17.0%	11.9%
10	8987 E. Tanque Verde Road	$96,608	1.08	46.78	3,997	1,559	23.8%	3.9%	8.9%	3.3%
25	4280 N. Campbell Ave	$43,835	1.34	43.40	9,387	4,700	16.9%	21.6%	17.7%	10.6%
32	11000 N. La Canada Drive	$102,122	1.08	48.21	5,312	1,929	28.3%	2.4%	8.4%	1.8%
49	9079 E Catalina Hwy	$100,543	1.06	46.84	3,456	1,347	24.2%	3.4%	8.8%	3.8%
57	101 N. Stone Ave	$29,461	1.37	39.75	12,492	5,140	17.2%	27.3%	43.1%	26.6%
62	3601 E. Broadway	$49,664	1.28	44.65	9,935	4,680	18.8%	15.6%	20.5%	9.7%
63	5830 E. Broadway Blvd	$43,484	1.32	41.64	12,884	6,166	19.6%	14.4%	21.4%	13.8%
64	3733 W Ina Rd	$67,868	1.16	41.82	9,960	3,642	29.4%	4.8%	19.8%	2.9%
65	101 N. Stone Ave	$29,461	1.37	39.75	12,492	5,140	17.2%	27.3%	43.1%	26.6%
66	73 W Broadway Blvd	$30,173	1.36	39.31	11,705	4,922	18.6%	28.0%	47.2%	27.2%
67	135 S. Sixth Ave	$28,848	1.38	40.13	12,132	4,846	15.9%	26.7%	40.0%	26.7%
68	60 W Pennington St	$30,018	1.36	39.45	12,271	5,138	18.2%	27.7%	45.9%	26.8%
69	45 W Pennington St	$29,885	1.36	39.52	12,303	5,131	18.0%	27.6%	45.2%	26.7%
70	45 W Pennington St	$29,885	1.36	39.52	12,303	5,131	18.0%	27.6%	45.2%	26.7%
71	4001 N. Country Club Road	$47,649	1.30	43.71	8,341	4,268	16.0%	19.3%	15.2%	10.9%
74	7401 N. La Cholla Blvd	$64,873	1.14	42.84	7,195	3,190	20.3%	8.1%	14.1%	6.5%
76	9340 E. Sellarole Road	$64,868	1.17	40.34	9,288	3,523	25.6%	6.0%	16.4%	2.5%
77	810 E. University Blvd	$26,421	1.43	42.52	19,155	6,351	7.8%	22.2%	16.9%	19.8%
79	135 S. Sixth Ave	$28,848	1.38	40.13	12,132	4,846	15.9%	26.7%	40.0%	26.7%
	All 21 Farmers' Markets	**$48,933**	**1.28**	**41.79**	**10,362**	**4,295**	**20.0%**	**18.2%**	**28.6%**	**15.4%**
	Tucson Urbanized Area (182 Tracts)	$58,891	1.20	40.87	3,811	1,517	24.8%	15.2%	31.4%	9.8%
	Pima County (196 Tracts)	$58,273	1.21	40.72	4,285	1,687	24.7%	14.3%	29.3%	9.0%

[5] An estimate of income distribution, calculated using the ratio of median to mean income. A value of 1.00 approximates a state of income equity, while larger or smaller values represent income equality that is either positively or negatively skewed, respectively.

One important change in this time period is the opening of a farmers' market by the nonprofit charity Community Food Bank of Southern Arizona (CFB) whose mission is to improve food access and food security in southern Arizona. Because the nature and mission of this farmers' market is different from that of other markets, it is listed in a separate section in Table 4. Noteworthy ways in which Table 4 shows that the 1-mile radius of the Community Food Bank farmers' market differs from that of other markets are that it has the lowest social status index, the highest percent of population under the age of 18, the highest percent of population living below the poverty line, and the highest percent of the population who are Hispanic.

But overall has there been any change in terms of the socioeconomic characteristics of who is most readily served by the rapid expansions of farmers' markets? How do the socioeconomic characteristics of the populations living within a 1-mile radius of these 21 markets compare with those served in the previous time period?

Examining the median income data, in 1995-2004 there were 9 markets in areas with relatively low median incomes (~$35K and below), 6 markets in areas with relatively high median incomes ($60K and up), with the remainder in areas with incomes near the median for the TUA and Pima County. So market expansion has occurred in markets serving all income levels, but has occurred disproportionately in areas near or above the median for TUA and Pima County.

Markets in high income areas tend to have close to normal distributions, while those in lower income areas continue to show positive skew. As compared with the average social status index for the markets in the previous time period, markets in the 1995-2004 period are in areas with a slightly higher social status index. The average population size for market trade areas has increased, despite decreases in population density per tract for the TUA and Pima County.

The average percent of population under the age of 18 in the 1-mile areas of these farmers' markets has decreased very slightly, while the average percent of population living below the poverty line in these market areas decreased substantially. This reduction is not accounted for by the slight reduction in the percent of the populations of the TUA and Pima County living below the poverty line. Similarly, as compared with the previous period, on average these markets are in areas with a decreased percent of the population who are Hispanic and a decreased percent of households without a car.

While individual farmers' markets differ substantially in this respect, on average the 1-mile radius populations served by farmers' markets in this time period as compared with the previous time period are wealthier and face fewer challenges in meeting their food needs.

These are important trends to track over time to assess the impact of farmers' markets on access to locally grown fresh fruits and vegetables for different segments of Tucson's population.

C. 2005-2014 Time Period

Turning next to Table 5, the same socioeconomic characteristics are reported for the time period 2005-2014, with demographic data drawn from the 2010-2014 ACS.

Table 5: Select Socioeconomic Characteristics of Farmers' Market areas, 2005-2014

ID	Address	Median Income	Income Ratio[6]	Social Status Score	Total Population	Total Households	Under 18 population	Poverty Rate	Hispanic Population	Households w/o vehicle
	Community Food Bank Markets	**$29,097**	**1.33**	35.96	11,368	4,321	22.5%	32.1%	66.9%	16.1%
2	100 S. Avenida del Convento	$28,970	1.41	38.98	9,863	4,059	16.8%	32.7%	66.0%	18.8%
14	101 W. Irvington Road	$26,432	1.29	32.62	15,832	5,081	28.7%	34.5%	86.9%	19.0%
15	3003 S. Country Club Road	$30,708	1.19	33.44	8,310	2,822	27.9%	30.8%	72.6%	9.6%
42	1352 W Speedway Blvd	$29,350	1.35	36.35	10,536	3,930	23.0%	35.8%	70.2%	18.1%
43	802 N Riverside Dr	$26,082	1.44	37.16	12,433	5,089	19.0%	37.2%	65.5%	20.8%
48	1660 W. Ruthrauff Road	$33,043	1.28	37.21	11,236	4,942	19.9%	21.4%	40.0%	10.2%
	All Other Markets	$47,658	1.30	43.28	10,298	4,253	17.1%	18.8%	26.1%	10.6%
1	4949 W. Heritage Club Blvd	$82,683	1.13	46.80	410	164	18.0%	3.4%	13.4%	1.8%
9	2960 N. Swan Road	$39,623	1.34	43.89	12,463	5,830	17.6%	21.2%	17.6%	12.1%
10	8987 E. Tanque Verde Road	$72,171	1.13	46.74	3,983	1,692	17.4%	6.1%	12.5%	2.4%
20	3000 E Broadway Tucson	$40,912	1.46	45.41	9,339	4,440	12.7%	23.0%	25.8%	11.1%
21	400 S. Sarnoff Drive	$41,454	1.23	40.53	15,890	7,376	18.5%	15.8%	24.1%	10.9%
22	3233 E. Speedway	$39,131	1.38	43.07	14,514	6,800	16.2%	26.8%	22.2%	15.1%
23	5455 N. Kolb Road	$75,557	1.17	49.60	4,590	2,253	14.5%	5.0%	8.7%	2.4%
24	3601 E. Broadway	$42,938	1.39	44.78	9,904	4,542	16.2%	21.7%	29.0%	11.4%
25	4280 N. Campbell Ave	$44,499	1.34	44.66	9,030	4,467	15.3%	23.0%	26.2%	10.8%
26	2730 N. Silverbell Road	$44,774	1.28	40.52	6,225	2,457	23.5%	25.7%	51.7%	10.9%
27	5301 E. Grant Road	$39,366	1.31	42.37	12,213	5,771	15.0%	18.6%	20.6%	17.2%
29	4555 S. Mission Road	$33,157	1.29	35.03	11,043	3,680	29.0%	32.5%	74.6%	9.0%
30	8989 E. Escalante Road	$48,693	1.17	40.02	9,400	3,746	20.8%	15.6%	24.1%	5.3%
31	505 W. Miracle Mile	$19,819	1.44	34.57	16,985	7,246	23.5%	45.0%	52.1%	28.7%
32	11000 N. La Canada Drive	$89,078	1.09	46.29	6,729	2,482	23.2%	3.5%	8.8%	1.6%
33	400 N. Toole Ave	$26,326	1.50	42.18	14,120	5,136	10.5%	29.2%	35.2%	20.4%
34	1200 N. Campbell Ave	$34,710	1.38	44.47	19,689	6,360	6.7%	23.6%	17.1%	11.4%
35	350 N Wilmot Rd	$40,453	1.36	42.26	11,359	5,124	17.0%	15.7%	26.9%	14.4%
47	8701 S. Kolb Road	$61,384	1.11	43.92	3,767	1,339	21.3%	2.4%	30.2%	2.8%
49	9079 E Catalina Hwy	$71,868	1.14	46.65	3,435	1,469	17.6%	5.0%	12.1%	2.0%
50	9028 E Catalina Hwy	$72,375	1.13	46.82	3,676	1,562	17.7%	5.6%	12.4%	2.0%
51	5830 E. Broadway Blvd	$34,430	1.42	42.05	12,169	5,645	19.4%	21.0%	30.2%	16.7%

[6] An estimate of income distribution, calculated using the ratio of median to mean income. A value of 1.00 approximates a state of income equity, while larger or smaller values represent income equality that is either positively or negatively skewed, respectively.

52	2160 N. Sixth Ave	$19,782	1.57	38.92	17,979	8,220	14.2%	46.3%	39.0%	26.8%
53	15921 S. Houghton Road	$68,474	1.16	45.78	6,613	2,595	20.7%	5.5%	16.3%	2.9%
54	7200 E. Tanque Verde Road	$49,883	1.25	43.88	10,307	5,004	16.5%	14.0%	21.8%	6.1%
55	5301 S. Houghton Road	$70,547	1.13	46.87	2,507	920	28.2%	5.7%	23.1%	1.4%
57	101 N. Stone Ave	$26,910	1.52	41.55	12,858	5,234	12.7%	33.0%	43.3%	20.5%
58	7635 N Oracle Rd	$64,376	1.25	46.19	4,247	1,791	16.9%	7.4%	15.0%	6.1%
59	1209 E University Blvd	$27,202	1.47	43.38	20,855	6,352	5.9%	25.1%	20.0%	15.8%
60	814 E University Blvd	$23,981	1.50	42.82	20,176	6,167	5.9%	26.8%	22.2%	19.2%
61	60 W Wetmore Rd	$30,827	1.40	39.79	12,775	5,983	16.0%	29.5%	33.1%	10.2%
	All 37 Farmers' Markets	**$44,648**	**1.31**	**42.10**	**10,472**	**4,264**	**17.9%**	**21.0%**	**32.7%**	**11.5%**
	Tucson Urban Area (214 Tracts)	$49,932	1.24	41.16	3,579	1,400	22.1%	20.9%	38.6%	10.0%
	Pima County (241 Tracts)	$50,131	1.24	41.14	4,121	1,602	22.4%	18.6%	35.4%	8.6%

Again in the 2005-2014 time period, the number of farmers' markets in operation in the Tucson area increased to 6 markets operated by the Community Food Bank and 31 operated by other organizers, for a total of 37 markets. This is roughly a 75% increase, not as much as in the previous period, but still a very dramatic growth rate. Clearly, this market form is still in its growth phase during this time period.

Reflecting the sharp economic downturn during this period, the median incomes in the 1-mile radius areas of the farmers' markets in operation during 2005-2014 dropped as compared with the previous period, as did median incomes in the Tucson Urban Area and Pima County. More striking however, is that the average median income served by these farmers' markets moved closer to the averages for the TUA and Pima County. This is because the median incomes in the farmers' market areas did not drop as much due to the economic recession as did incomes in the TUA or Pima County as a whole.

During this period, the number of markets in low income areas (~35K or below) increased substantially to 6 markets operated by the Community Food Bank and 10 operated by other organizers. Growth in lower income areas, however, is primarily driven by the opening of Community Food Bank markets, with only one other farmers' market opening in a low median income area during this time period. The number of markets in relatively high median income areas (~$60K and above) grew to 10 markets.

The social status index for farmers' market areas again increased, but so did the social status indices for the TUA and Pima County, despite the overall declines in median incomes due to the economic downturn. The average number of people and households served per market area remained roughly the same as in the prior time period, but, of course, the dramatic expansion in the number of markets means the total number of residents living within a mile of a farmers' market increased.

The average percent of population under the age of 18 in 1-mile radius areas for farmers' markets declined in this time period, but those percentages also declined for the TUA and Pima County as a whole. A substantial number of the markets with high percentages of residents under the age of 18 are organized by the Community Food Bank.

A similar pattern exists for the average percent of population living below the poverty line. While the average percent of population living below the poverty line in 1-mile farmers' market areas increased, those percentages also increased for the TUA and Pima County as a whole. Nonetheless, some of this expansion in serving high poverty areas is attributable to the opening of additional markets in high poverty areas by the Community Food Bank and by other organizers.

The percent of the population that is Hispanic in 1-mile radius farmers' market areas increased during this time period, but so did the same percentages for the TUA and Pima County. Again, a substantial amount of this change is attributable to the opening of additional markets in heavily Hispanic areas by the Community Food Bank. There was a decline in the average percent of households without access to a vehicle in 1-mile farmers' market areas, with only very slight changes in these percentages for the TUA and Pima County.

Table 6 lists the farmers' markets operating during 2015-2016 at the time of writing of this white paper. Because the 2010 census data are the most recent available and were used in analyzing the socioeconomic attributes of farmers' market 1-mile radius areas in 2005-2014, they are not repeated here.

Notably a number of markets have closed or consolidated leaving 3 markets organized by the Community Food Bank and 17 organized by others, for a total of 20 markets. Although this appears to be a reduction of nearly 50% from the prior period, these data only represent an 18-month period. Over the next 8 years it is possible that additional farmers' markets will be opened, as they have in the past. Nonetheless, based on the smaller numbers of new markets opening during this 2-year period, it appears that the rapid expansion in the number of markets in prior periods has slowed at least somewhat.

Table 6: List of operating Farmers' Markets, 2015-2016

ID	Address
	Community Food Bank Markets
2	100 S. Avenida del Convento
14	101 W. Irvington Road
15	3003 S. Country Club Road
	All Other Markets
1	4949 W. Heritage Club Blvd
3	6541 E. Tanque Verde Road
5	1501 N. Campbell Ave
8	10901 N. Oracle Road
9	2960 N. Swan Road
10	8987 E. Tanque Verde Road
11	4502 N. First Ave
12	7000 E. Tanque Verde Road
18	9150 N Coachline Blvd
25	4280 N. Campbell Ave
29	4555 S. Mission Road
30	8989 E. Escalante Road
35	350 N Wilmot Rd
37	400 N. Toole Ave
38	7413 E Sycamore Park Blvd
40	6200 N La Cholla Blvd
41	1209 E University Blvd

3. Ethnographic analysis of Farmers' Market Shopper Practices

Farmers' Markets serve important functions beyond facilitating the distribution of locally-grown fresh produce to locals. They also connect individuals to each other in ways that form more cohesive communities. Through eighteen months of ethnographic research, we identified four sets of shopping practices that customers utilize at Tucson's farmers' markets, each with a different focus and orientation.[7]

A. Ethnographic Methods

As is conventional in cultural anthropological and cultural sociological research, we conducted a sited ethnographic study (Sherry 1990; LeCompte and Schensul 1999; Wolcott 1999; Malinowski 2007) of a farmers' market managed by the Community Food Bank of Southern Arizona. Supplemental observation was done at several other Tucson area farmers' markets as a check on the generalizability of our observations from this one market.

Due to the food bank's expansive network and long-term outreach efforts, the focal farmers' market has attracted a culturally and economically diverse customer base, making it ideal for studying the ways in which different types of consumers understand the market and appropriate it within their wider practices of food acquisition. Prior research has shown that farmers' markets attract a diverse clientele who enact a varied array of practices (McGrath, Sherry, and Heisley 1993; Brown 2002).

Data collection included a range of techniques employed by the first author: weekly observation of market events; shopping interactions between vendors and customers; informal conversations and short interviews with vendors, customers, market volunteers and staff; brief, semi-structured interviews with customers; volunteer work for the food bank as a cashier; and formal interviews with key informants. Written and audio scratch notes were taken at the market and later transcribed and expanded into field notes, yielding more than 200 single-spaced pages of notes. As in other research on farmers' markets, photographs were made to supplement the field notes where appropriate (Heisley, McGrath, and Sherry 1991). To document the spatial dimensions of consumers' food acquisition, the movement and location of consumers within the market were noted and recorded. During conversations and semi-structured interviews, consumers were asked about other venues and practices that they utilized in food acquisition. Maps were constructed using these spatial data using Esri ArcGIS software, making our insights far more apparent than would be possible utilizing field notes or interview transcripts alone (Brennan-Horley and Gibson 2009).

Both authors participated in data analysis and interpretation. Data analysis followed the iterative method commonly employed in ethnographic research in which data are constantly reviewed and discussed in light of new data and existing literature (LeCompte and Schensul 1999). Interpretations were discussed by the two authors and revised through comparison with other segments from the data.

[7] Parts of our ethnographic data and findings have been accepted as a research paper and presentation for the July 2016 Consumer Culture Theory Conference in Lille, France (Godfrey and Wallendorf 2016).

B. Strategies and tactics in consumer food acquisition

Four prototypical sets of practices are identified, representing four different ways consumers utilize the farmers' market. Each of the four prototypical sets of practices takes a somewhat different approach to the market and food provisioning.

The first prototypical set of practices, termed *Ideological Acquisition,* approaches ethical and/or environmentally sustainable food acquisition as a critical moral choice tied closely to consumers' lifestyles and identities. The second prototype, *Pragmatic Provisioning*, utilizes the farmers' market as one of several venues from which to acquire the best value in food at the lowest cost. The third prototypical practice, *Recreational Shopping,* uses attendance at the farmers' market as a leisure activity providing entertainment and an escape from routine daily life. Fourth, *Community Networking* practices use the market to reinforce relationships with others who consumers regard as like-minded individuals, whom they also interact with at other third place locations. We next detail each prototypical practice and explain the strategies or tactics they involve at the farmers' market. These four sets of practices are also described in terms of their consequences for consumption activities enacted across other times and places. All names of informants are pseudonyms.

1. Ideological Acquisition

> Sophia, a woman in her mid-30s, dressed in a Lulu Lemon-style exercise top, came to the [Community Food Bank] table and almost bought all of our oranges and grapefruit. She was already loaded down with two giant reusable bags full of produce, but she asked for the entire bushel of oranges that was on sale. When we gave her a bit of a surprised look she said, "I have four kids at home, and we're all vegan. I'm doing my weekly grocery shopping here." This was a statement that she repeated several times throughout our encounter. (Field notes, first author volunteering at food bank sales table)

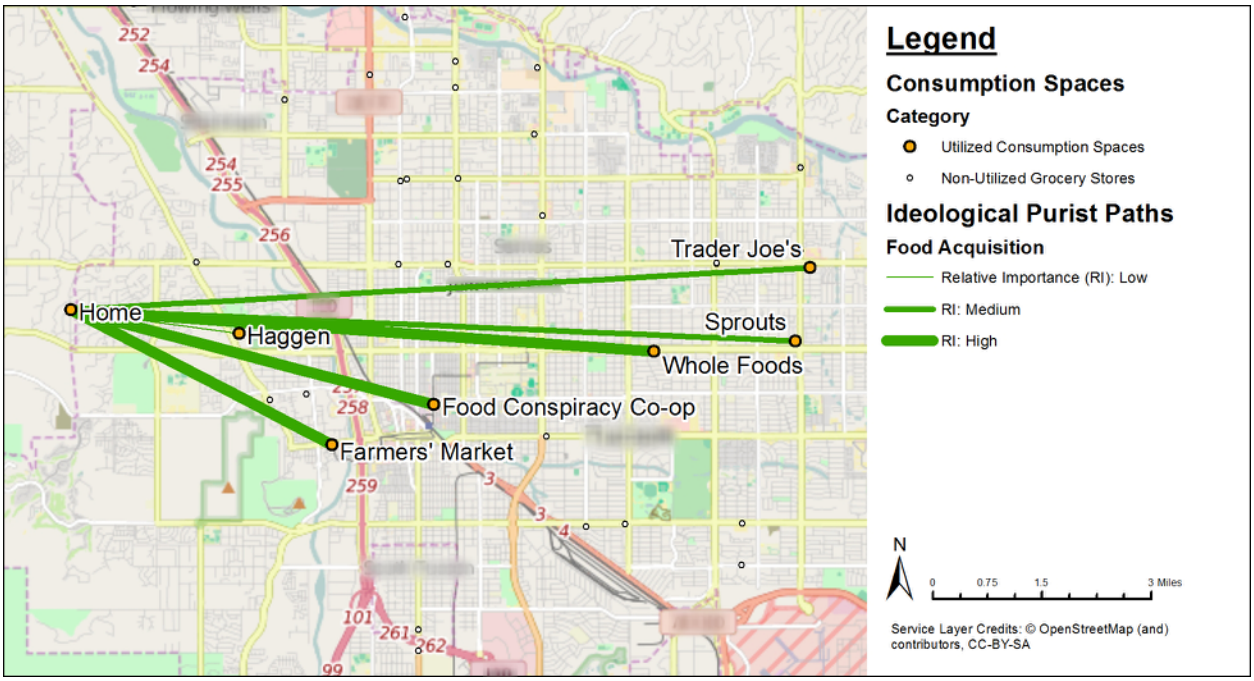
Like other consumers employing ideological acquisition practices, Sophia expends considerable effort to acquire food that matches her ideals, including travelling more than seven miles from home. While the particular beliefs and motives vary among those employing ideological acquisition practices, they generally include freshness and purity, holistic health and wellness, and environmental sustainability represented by organic produce of local origin. Most, but not all, consumers practicing ideological acquisition at the market are white, middle-aged, middle-class women. One of them, Marissa, explains:

> It became so clear that a lot of what they put in food is really harmful at worst, and not beneficial at best… I think it started out just intuitively, that it's a bad thing to spray neurotoxins on a food and then eat it. (Interview)

Ideological acquisition requires strict gatekeeping to diligently protect the body from invasion by foods these consumers seem to regard as poison. Banned foods almost always include genetically modified organisms and pesticide sprayed crops. Excluded foods may also include refined sugar, cow's milk, gluten, plants in the nightshade family (e.g., potatoes, tomatoes, eggplant), or others. Figure 8 maps how the farmers' market fits into Marissa's practices of ideological acquisition,

which involve considerable travel, often passing other retail outlets that don't meet her moral standards.

Figure 8: Ideological Acquisition Practice Map (Marissa)



Ideological Acquisition practices require a fairly large expenditure of time and gasoline, and seem to necessitate access to a car. When prices come up in conversation (they often do not), consumers engaged in ideological acquisition talk about the expense of appropriate food as a worthwhile investment in health. Although many of these consumers have high-paying jobs, even those on very limited incomes willingly sacrifice money to maintain a pure supply of food.

At the farmers' market, ideological acquisition requires strategy. Over time, consumers learn which vendors sell the tomatoes, greens, sprouts, or other items that meet their standards of ethics and health. When a vendor misses the market for a week or two, those employing ideological acquisition practices often later comment to the vendor about the absence. These consumers want to build relationships with vendors, not necessarily to become friends, but to use face or name recognition to be able to secure the best food.

To be successfully executed, ideological acquisition practices require arriving early and heading to favorite vendors to stock up on staples for the week, as explained in this fieldnote excerpt:

> When I arrived at the market, not quite ten minutes after it began, it looked like people had been shopping for an hour. The sidewalk was buzzing with people, most with large reusable bags, buying produce. These were mostly middle- and upper-middle class

> women who appeared to be buying fairly large quantities of a wide range of products. There were still very few vendors or customers in the inner courtyard.

These customers typically avoid shopping in the inner courtyard, which is filled with seating and an open plaza where socializers gather during the market's later hours. Instead, ideological acquisition practices focus on vendors located along the sidewalk with a quick trip to the food bank's produce consignment table located in the entry to the inner courtyard. Customers engaged in ideological acquisition generally welcome researcher-initiated conversation about food acquisition practices, seeming eager to articulate and justify their moral logics.

Ideological acquisition requires multiple large reusable shopping bags and sometimes a two-wheel folding shopping cart to hold the bags filled with produce. Those employing ideological acquisition practices also move through the city strategically, avoiding grocery stores that do not satisfy their nutritional and environmental standards, even if these stores are more conveniently located.

In summary, the food provisioning practices of ideological acquisition include expending conscious physical and mental effort, building beneficial economic relationships, deploying knowledge and tools, and stocking up. These practices represent strategies that exert some measure of deliberate control over the consumption environment. Ideological acquisition employs similar strategies to establish a feeling of control or certainty in food acquisition venues beyond the farmers' market as well.

2. Pragmatic Provisioning

> Dave [a farmers' market volunteer] told me about a woman who comes to the market every week. He has watched her visiting every vendor, comparing their produce and prices, and making a list so that she knows exactly how much money she will need. Then she goes to the information booth and gets the right amount of EBT vouchers (Electronic Benefits Transfer vouchers, formerly called food stamps). Then she goes and buys the produce. He said that he can tell she's trying to make the food last and get the best value she can. (Field Notes)

While this report came second-hand, many other customers practice similar tactics in trying to get the most food value for their money. Those employing pragmatic provisioning shop supermarket sales, look for bargains, and often come to the farmers' market similarly armed with coupons and vouchers.

Several farmers' markets in the local area accept government-issued Supplemental Nutrition Assistance Program (SNAP) debit cards that can be used at the information booth to purchase EBT vouchers to use in buying from vendors. SNAP funds can be used to purchase any unprepared food products. Part way through data collection, this farmers' market began a "double-up SNAP" program in which the food bank matched SNAP customers' spending up to an extra $20. This program was implemented to attract SNAP customers to the market and improve their nutrition by nudging them to buy fresh fruits and vegetables. The US Department of Agriculture's WIC Farmers' Market Nutrition Program (FMNP) also provides low-income

mothers and elderly people with checks to that can be spent only at designated farmers' markets between April and October. The manager of the focal farmers' market estimated that SNAP benefits and WIC checks account for 23% of total sales. The cumulative impact of these sales leads many vendors to pre-package some of their produce in bags in $3 increments, the denomination of customers' WIC checks, making it easier for WIC customers to spend this exact amount.

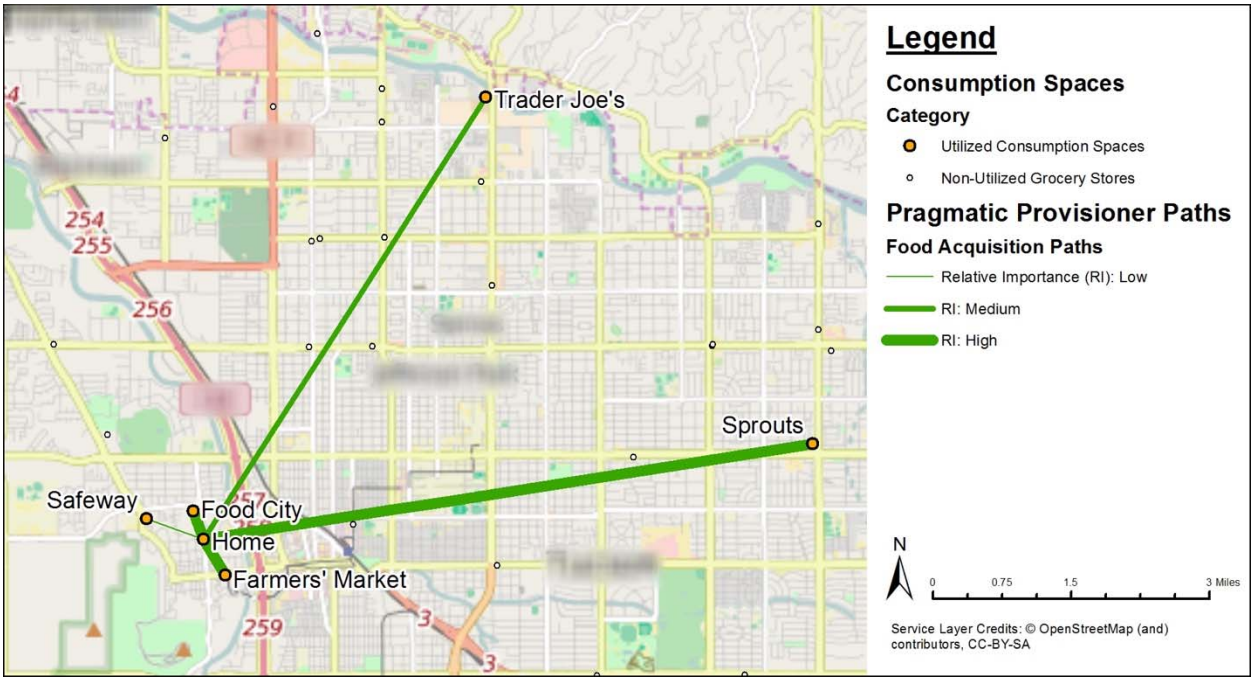
Some pragmatic provisioning involves spending cash at the market, but the vast majority utilizes WIC checks or SNAP benefits, as with Veronica, a Hispanic mother in her late twenties:

> This was her second time at the market. "I came this time last year," she said. She used WIC checks [that can be spent only at farmers' markets], so I assumed she came both years to use those checks before they expire [at the end of this month]. She said the market was a good place to find a different selection of things from what she could find at the grocery store. "There are a lot of new and unusual things for sale at the market," she said. She also said "the environment is nice." It has a friendly, positive, community feeling. Today she bought potatoes, salad greens, lots and lots of peppers, tomatoes, and cantaloupe. It looked like about $30 worth, which is one person's annual WIC farmers' market allotment. She buys "90 percent" of her food at Fry's [a low-price supermarket chain] because it's close and cheap. "The other 10 percent" she buys at Sprouts, because they have specialty and organic items. (Field Notes)

Although Veronica values organic food, this ideal came second in priority to economic value-maximization. Pragmatic provisioning focuses on familiar staples when shopping at grocery stores and farmers' markets. Veronica lives at least seven miles from the market, but added that the distance wasn't a barrier: "I travel all over, so it's not a big deal." While she likes the market environment, it is not enough to bring her back regularly. What she and others employing pragmatic provisioning practices seek are grocery deals. This goal usually requires that they shop at multiple stores, mostly wholesale clubs, supercenters, promotion-oriented supermarkets, and discount grocers. Lily, a white mother in her early 30s describes her family's food acquisition practices as "cobbled together" from a set of stores that each provide a different value. One store offers the freshest produce for reasonable prices, another provides deep discounts on select fruits and vegetables during once-a-week sales, and another sells inexpensive ready-to-cook meals for busy nights. Figure 9 shows the travel pathways she uses in food provisioning.

Pragmatic provisioning includes three key sub-practices: finding familiar staples among unfamiliar alternatives, utilizing coupons or benefits, and comparing prices. Pragmatic provisioning takes the food retailing systems at supermarkets and farmers' markets as given and opportunistically finds the best economic value within these existing systems.

Figure 9: Pragmatic Provisioning Practice Map (Lily)



3. Recreational Shopping

A large family consisting of a white middle-aged mother with four children aged seven through thirteen walked through the market sampling everything that was available to try for free. At the roasted chili table, all the children stuck their hands out toward the vendor, waiting patiently for cookie samples. It was amusing to see all those little hands outreached, crowding for attention. The mother has only been to the market a few times, but they moved only a couple months ago from Minnesota. They're still getting used to this area, she said. The mom was trying to remind the children that they were going to pet the horse tied up to a tree across the street. She seemed a bit embarrassed by her children's impatient hunger. She asked how much the cookies were ($2) and bought one to take away. After petting the horse, the family went to a fruit vendor's table and bought peaches and pears… The family left the market carrying only a small plastic grocery bag containing a few produce items. However, all the children had a fruit and/or cookie and were eating them vigorously. (Field Notes)

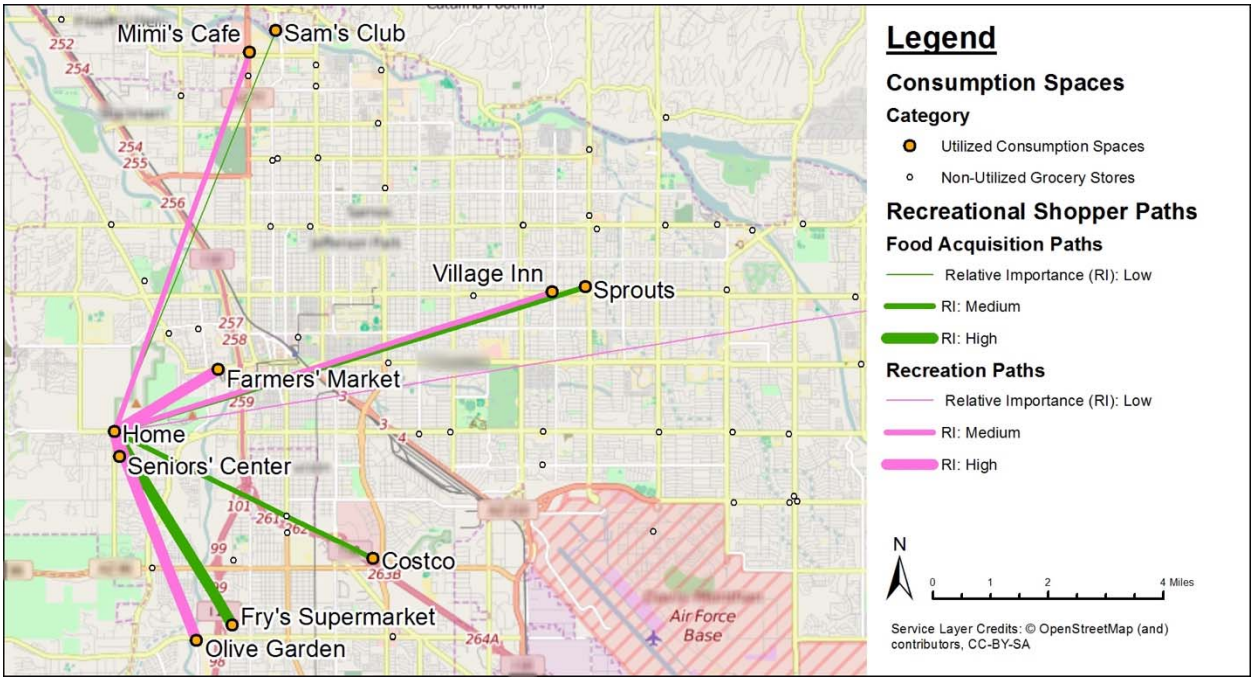
The practices we term recreational shopping involve approaching the farmers' market as a site for entertainment. Unique snacks, tasty beverages, and live music offer a welcome break from the mundaneness of everyday life. For those employing this approach, the farmers' market exists in a practice network that is separate from that used for food acquisition. For those engaged in recreational shopping, attending the farmers' market is an activity comparable to seeing a movie at the theatre, window shopping at the mall, playing at the park, or going out for lunch. Consumers employing these practices generally are retired couples, groups of women, or suburban families with multiple children.

Vendors and even other customers at the market provide valuable entertainment in themselves. Those employing recreational shopping practices often mentioned watching children and families play in the courtyard as a highlight of their market experience. Donald, a white, retired butcher who attends the market weekly with his wife, Marilyn, gives an example to explain how much they love the unexpected spectacle of human interactions at the market:

> Like we were saying about people watching, it's just—like watching a mom and her little daughter sitting in the gravel reading a book. I mean come on! And absolute chaos is going on all around them. You know, people running all over the place. It's just that kind of a place, where you could sit down in the gravel and nobody cares. (Interview)

As shown in Figure 10, Donald and Marilyn's attendance at the farmers' market connects more closely with their recreational practices than with grocery shopping. At the farmers' market, as well as at other comparable leisure venues, recreational shopping may result in opportunistic social connections. Having a friendly conversation with a stranger who sits nearby is a welcome treat. However, those employing recreational shopping practices don't actively seek or force these connections. They position themselves in locations where the kind of socializing they desire—whether watching people, meeting someone new, or having a private meal with friends—will come to them as they sit in the inner courtyard.

Figure 10: Recreational Shopping Practice Map (Donald and Marilyn)



Observing what they regard as an idyllic, communal setting provides needed respite from the chaotic world outside the market. Arlene, a semi-retired Hispanic caregiver attends the farmers' market regularly to socialize with two or three close friends. She explains the market environment by saying, "It's like home. It's the way people used to do things," referring to a slower pace and a focus on handmade or homegrown products that she nostalgically links with a former but unspecified time. While she buys nearly all her groceries at supercenters and discount grocers, the farmers' market provides a weekly "fiesta" that she loves soaking up.

Recreational shoppers often come to the market with friends or family members, with whom they stroll past vendors and find a table to enjoy a snack or coffee. These small groups rarely socialize with other customers, and rarely take more than a few produce items home. Familiar people and surroundings help recreational shoppers feel at ease.

Recreational shopping utilizes the farmers' market space through three main practices: extracting entertainment from the surroundings, making opportunistic social connections, and seeking nostalgic experiences of a form of community. They gravitate to the restaurants, coffee shops, and picnic tables on the periphery of the inner courtyard, giving them a good seat for watching all the market's excitement, but still allowing easy access to vendors in case they get hungry, thirsty, or bored.

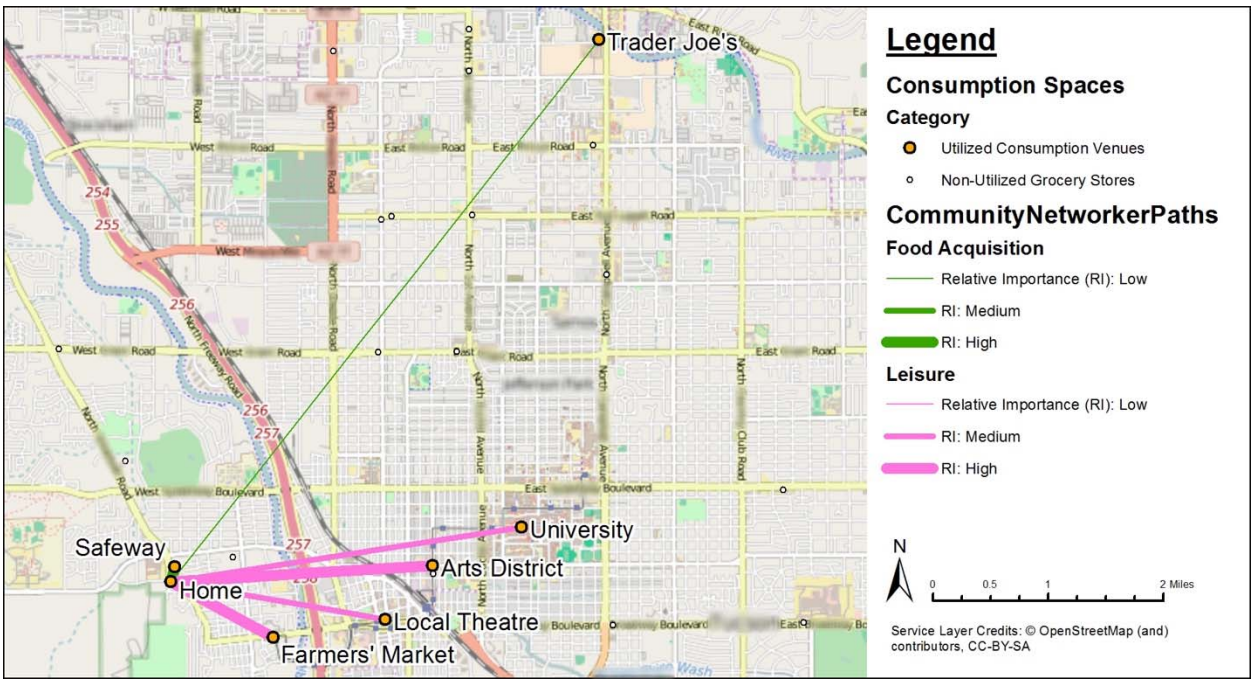
4. Community Networking

> We sat down by Marcus and Jill, who remembered me and my research project [from a previous encounter]. They were happy to meet my daughter. Their daughter, Lilly, is just two months younger than mine. Lilly happily wandered the courtyard, keeping fairly close to her mom, chewing on a carrot that Jill had bought at the market. Today Jill also had some beets, another kind of greens, and a bunch of apricots. Her son and daughter both munched away at the apricots… As we sat, Jill proceeded to introduce me to her friends as they walked past and joined them on the steps in the courtyard. Mack, a visitor from Alaska, sat down and talked with Marcus. Jackie, a proud resident of the nearby downtown area, stopped and talked… After our conversation died down, the friends began talking about dinner plans. Marcus asked Jill and Jackie if they knew where they wanted to eat. They said they didn't have any preferences. Neither did Marcus. Jill and Jackie decided to wander about and see what they could find. I asked Marcus if they usually eat at the farmers' market. He said they did. They usually get dinner at the Mexican restaurant near the main gate to the plaza. (Field Notes)

Similar to recreational shopping, community networking practices approach the farmers' market as primarily a social experience rather than a grocery shopping trip. What differentiates these two prototypes are the ways in which the farmers' market consumption practices fit into a wider set of spatial and social practices. Marcus, Jill, and Jackie all live downtown near the farmers' market. More importantly, as Marcus explains, they are "downtown people." For them, this means building and maintaining social connections at nearby locally owned consumption venues. Coffee shops, neighborhood cafés, and the farmers' market all provide an ideal social environment for this activity. Community networking involves extending and strengthening relationships with like-minded people through communal consumption practices.

John, a retired educator who lives just over a mile from the farmers' market, buys most of his food from a grocery store one block from his home (see Figure 11). However, he frequently rides his bicycle to the downtown core, to the local bohemian arts district, and to the university to meet people and attend concerts and cultural events. His path through the market usually includes a stop for salad greens and a few other vegetables, followed by leisurely strolls through the courtyard and sidewalk looking for people who he knows and could share a long conversation with. If he doesn't recognize anyone, he sits down at a table with the newspaper, passing time until someone he knows arrives.

Figure 11: Community Networking Practice Map (John)



The similarities between some of the practices of recreational shopping and community networking initially seemed striking, as is evident in practices used by Marty. However, learning how the farmers' market fits into his other consumption practices distinguishes community networking:

> Marty visits several vendors when he comes to the market. He shops very casually and enjoys the social, relaxed atmosphere. Sometimes he'll spend two hours just sitting at the market. The fact that so many children come to the market is also a big draw for Marty. Even though he didn't mention having children and came alone today, he said that he loved being at the market while the children ran around… Marty has a keen interest in uncovering information and locations that "most people" don't know about… [the city's] most interesting locations, he added, are usually hidden "between the cracks," so people

> have to put some effort into looking in order to find its best cultural attractions, places like the microcinema downtown, which Marty helps to promote. The microcinema shows independent and experimental film, often hosting viewings with filmmaker Q&As or art exhibits. (Field Notes)

Marty lives downtown and participates actively in arts-oriented community organizations and venues. At these locations as well as at the farmers' market, he connects with friends and actively builds relationships with like-minded vendors, such as the organic baker or raw honey vendor who both sell at the farmers' market.

Community networkers buy only a small proportion of their food provisions at the farmers' market. In fact, grocery shopping is a fairly low priority for them in general. They shop at supermarkets that are conveniently located or specialize in convenient snacks and ready-to-eat meals. They think of food as a social lubricant rather than as simply a biological necessity. Marcus and Jill, for example, try to eat at local restaurants and coffee shops almost daily, even with two small children in tow.

Within the market, community networkers appropriate the inner courtyard. Many community networkers bring young children who play in the gravel, although adults without children also stand in the courtyard talking in small groups or waiting to spot a familiar face. Their heavy use of the inner courtyard prompted multiple coping mechanisms by the retail center's management. Originally grass-covered, weekly trampling during the farmers' market made its upkeep nearly impossible. When the research began, management had covered the exposed dirt and dying grass in straw, leaving a hay bale in the center for children to play on. A thick layer of pea-sized gravel permanently replaced the hay in the courtyard later in the project. Later, the area was paved over to expand the space where tables and chairs could be placed.

The primary practices of community networking involve appropriation of third places, building social capital, and using food as a social lubricant. These practices connect directly to a network of similar practices of community networking deployed throughout the city, although concentrated in the urban core. While opportunistic in nature, the repeated use of spaces for social connectivity can still result in both social and physical transformations of consumption venues.

In summary, food distribution is only one of the community functions of a farmers' market. Such markets also establish interpersonal connections and a sense of place that do not routinely emerge from more anonymous relations in conventional supermarkets where staff turnover is high (Richards, Lawrence, and Burch 2011).

4. Retail Density in Areas with Farmers' Markets in 2015-2016

Attendance at farmers' markets accomplishes different life goals for different groups of consumers. But for all of these groups, a trip to a farmers' market fits in to a set of other retail and entertainment venues that they also include in their travel paths. Therefore, in addition to considering the characteristics of the consumer population that resides near a farmers' market, it

is important to consider the population of retail outlets that exists near that farmers' market in order to assess the market's potential to alter people's geographic access to food.
The four maps that comprise Figure 12 plot the densities of various kinds of retail outlets across the Tucson Urban Area. In these four maps, more concentrated color indicates greater density of that type of retail outlet. Natural food stores (see Figure 12A) are included in this analysis because they can be viewed in two ways with respect to farmers' markets. On the one hand, natural food stores represent competitors for nearby consumers' purchases of fresh produce. On the other hand, colocation of farmers' markets and natural food stores indicates both are clustering near consumers with a preference for their products. This indicator is particularly important with regard to the group of consumers who enact ideological acquisition practices in their food provisioning. Living in areas where there is a higher density of natural food retailers as well as a farmers' market would exert a gravitational pull on them.

The density of coffee shops and tea houses is included in this analysis because it reflects the taste and social cultures of the surrounding population. Coffee and tea shop retail outlets serve as third places (Oldenburg 2001) where people can congregate away from home and work (the first and second places that orient life) to meet others and feel connected to the community. In particular, retail concentration of coffee shops/tea houses is an attraction for those enacting community networking practices. As seen in Figure 12B, the indicator of the presence of coffee shops and tea houses is more sharply concentrated than any of the other retail density indicators included in the analysis. This retail concentration among coffee shops and tea houses indicates that there is one and only one geographic locus for consumers with an interest in community networking: at present, that area is centered in the university and downtown areas.

The third indicator of retail density considered in this analysis is that of supermarkets (shown in Figure 12C). These retail institutions are included because they are the primary source of discount prices on food. Supermarkets advertise that they provide everyday low prices, accept manufacturers' coupons on packaged goods, and advertise weekly special prices. These marketing strategies are aimed at consumers who are primarily focused on enacting pragmatic provisioning practices. Included in the supermarket category are national supermarket chains such as Safeway or Kroger's, national food discount retailers such as WalMart or Target, and wholesale clubs selling food products such as Costco or Sam's Club. It is not surprising that the supermarket category is more geographically dispersed than the other three types of retail outlets included in this analysis. Across the Tucson Urban Area landscape, the supermarket category includes multiple centers of concentration of retail activity. Everyone eats, and everyone consumes a set of staple products that are most often purchased in supermarket-type stores.

The fourth commercial category included in this analysis is the density of retail clothing stores. These stores are included in the analysis as an indicator of the availability of recreational shopping close to the farmers' market. While everyone buys and wears clothes, people vary significantly in the frequency with which they shop for and buy clothing, the amount they spend per garment on items of clothing, and their enjoyment of these activities. Recreational shoppers are at the high end of each of these practices. As with supermarkets, Figure 1D shows that clothing stores are relatively well dispersed throughout the area, with a small concentration in areas near large shopping malls.

Figure 12: Densities of Specific Retail Sites in Relation to Farmers' Markets, 2016

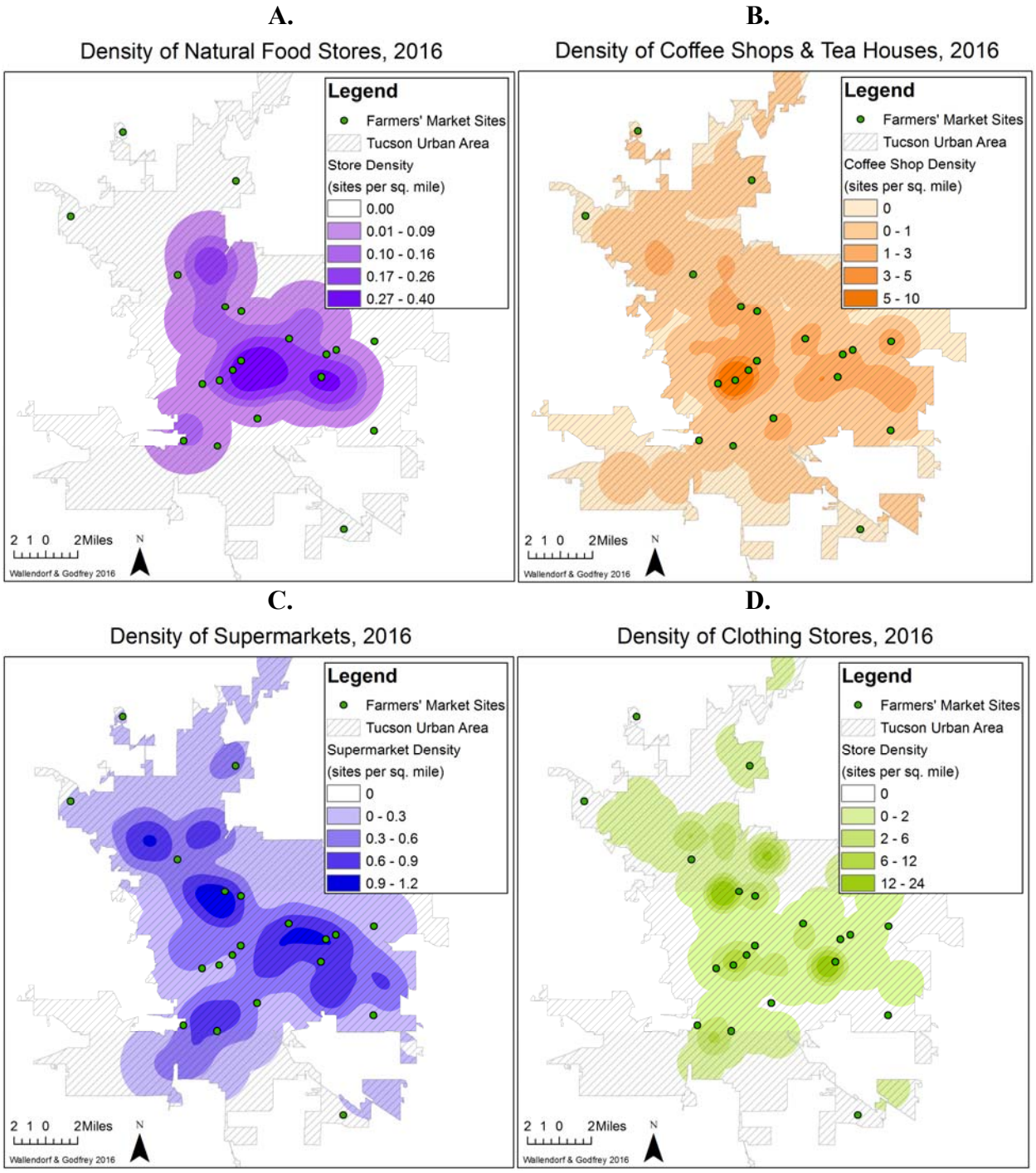


Table 7 shows the density per square mile of these four kinds of retail outlets in the square mile around each of the farmers' markets operating in 2015-2016.

Table 7: Retail Densities near 2015-2016 Farmers' Markets

Farmers' Market Identifiers		Density of Specific Retail Locations (sites per square mile)			
ID	**Address**	**Natural Food Stores**	**Coffee Shops & Tea Houses**	**Supermarkets**	**Clothing Stores**
	Food Bank Markets	0.038	2.082	0.425	1.490
2	100 S. Avenida del Convento	0.076	4.775	0.289	2.879
14	101 W. Irvington Road	0.020	0.311	0.668	1.590
15	3003 S. Country Club Road	0.016	1.162	0.317	0.000
	All Other Markets	0.100	1.859	0.444	2.797
1	4949 W. Heritage Club Blvd	0.000	0.000	0.010	0.000
3	6541 E. Tanque Verde Road	0.128	1.249	0.909	0.739
5	1501 N. Campbell Ave	0.326	2.501	0.430	1.630
8	10901 N. Oracle Road	0.000	0.282	0.366	0.456
9	2960 N. Swan Road	0.154	1.516	0.789	2.006
10	8987 E. Tanque Verde Road	0.000	1.697	0.164	0.000
11	4502 N. First Ave	0.089	1.389	1.014	8.146
12	7000 E. Tanque Verde Road	0.064	1.022	0.801	0.641
18	9150 N Coachline Blvd	0.000	0.000	0.012	0.000
25	4280 N. Campbell Ave	0.048	1.584	0.689	4.821
29	4555 S. Mission Road	0.105	0.388	0.469	0.920
30	8989 E. Escalante Road	0.000	0.158	0.149	0.000
35	350 N Wilmot Rd	0.292	2.083	0.706	13.845
37	400 N. Toole Ave	0.166	11.061	0.227	8.802
38	7413 E Sycamore Park Blvd	0.000	0.000	0.000	0.000
40	6200 N La Cholla Blvd	0.032	0.494	0.495	0.037
41	1209 E University Blvd	0.289	6.178	0.323	5.512
-	**Average (all market sites)**	**0.100**	**1.859**	**0.444**	**2.797**

Very few farmers' markets are located in an area that is densely populated by other food retailers that are predominantly focused on natural foods. This is because the local population is not sufficiently oriented around shopping at such stores for them to be able to cluster geographically. Only the two farmers' markets located closest to the university (#5 and 41) and the one located at a hospital on the east side (#35) have anything above a trace indicator of density for natural foods. By contrast, the areas around the farmers' markets managed by the Community Food Bank show virtually no density of retail outlets specializing in natural foods.

The results regarding the co-location of farmers' markets near coffee shops and tea houses are quite varied. The co-location of two Community Food Bank farmers' markets near some coffee shops and tea houses indicates their ability to draw not only low income customers, but also some community networkers with somewhat higher incomes. Two additional farmers' markets run by other organizers are located in areas with an even higher density of coffee shops and tea houses, and are therefore well sited to draw community networkers. One of these (#37) is located in the downtown area, and the other (#41) is on the university campus.

The geographic spread and therefore low overall density of supermarkets is reflected in their low density in the areas near farmers' markets. In this respect, farmers' markets make food more accessible to people who do not have access to a car.

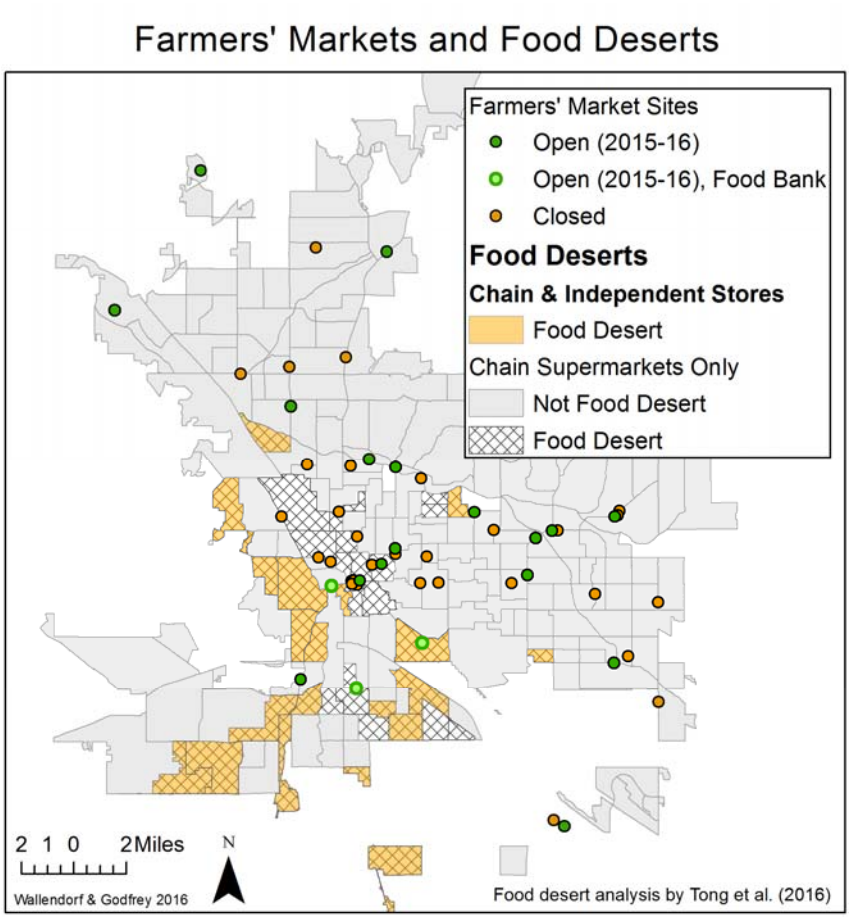
A final analysis of the retail landscape returns to our research question regarding whether the recent business growth of farmers' markets has unfolded in ways that improve food access for Tucson's residents. It appears that the markets have achieved this to a small extent, but only in some cases. This analysis begins with the results presented by Tong et al. (2016) in a previous MAP Dashboard research project which identified food deserts in the Tucson Urban Area by considering the locations of chain supermarkets and independent stores selling food. Our analysis maps the locations of farmers' markets open in 2015-2016 with special notation regarding those organized by the Community Food Bank, and those that were previously opened but are now closed.

Figure 13 shows these results. The farmers' markets on the southside of the Tucson Urban Area appear to have alleviated some of the restricted food access in these areas. Three of the four markets in this area are operated by the Community Food Bank.

While farmers' markets have opened in the central food desert areas identified in previous research (Tong et al. 2016), most of these markets have closed. This illustrates how the temporary and semi-transient nature of farmers' market locations can actually contribute to increased food insecurity, providing a promise of access only to close a few seasons later. Moreover, most farmers' markets are only open one day per week and one Community Food Bank market is only open for six months of the year. Their temporal impermanence still poses a barrier to the ability of farmers' markets to improve overall access to healthy food.

Overall, Tucson's farmers' markets have tended to locate near populations with low poverty rates and high vehicle access. In this respect, farmers' markets that are not run by a charity have not improved access for the TUA residents who most desperately need more accessible sources of fresh produce. However, farmers' markets operated by the Community Food Bank of Southern Arizona have generally been opened in areas of the TUA that have been underserved by both conventional food stores and farmers' markets.

Figure 13: Comparing Food Deserts and Farmers' Market Locations, 2016



Conclusion

Farmers' markets in different locations have different goals and orientations. Some provide very high quality produce and even unusual varieties of produce (Jordan 2007) to a relatively high income clientele. Others attempt to bring reasonably priced produce at the peak of its season to low income people in order to nudge their diets toward including more fresh produce. Others, such as the one in our ethnography, draw from a mixture of customer types in a project to resist some of the negative community consequences of gentrification. The characteristics of the surrounding area, both in terms of human population and types of retail density, have a large impact on the ability of farmers' markets to attain their goals.

Farmers' markets expand residents' access to locally-grown organic produce. However, they do so for residents who already have ready access to food, even if it is not locally-grown organic produce. Farmers' markets on the whole do not contribute to eliminating food deserts; the

exception is farmers' markets organized by a charity organization whose mission is to improve food access and food security.

Yet, there have been many attempts to open farmers' markets in underserved areas, but most of them close within a few seasons. The remaining research question is; what have been the obstacles to their success and how can those obstacles be overcome.

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Appendix 1: Operating dates for Tucson Urban Area farmers' markets, 1985-2016

ID	Address	Operating Seasons	First Year	Latest Year	Food Bank Operated?
80	48 E Pennington St	1	1985	1985	
81	73 W Broadway Blvd	1	1986	1986	
67	135 S. Sixth Ave	6	1990	1995	
79	135 S. Sixth Ave	6	1990	1995	
9	2960 N. Swan Road	24	1993	2016	
78	4280 N. Campbell Ave	2	1993	1994	
10	8987 E. Tanque Verde Road	23	1994	2016	
71	4001 N. Country Club Road	1	1996	1996	
25	4280 N. Campbell Ave	19	1998	2016	
63	5830 E. Broadway Blvd	2	1998	1999	
65	101 N. Stone Ave	2	1999	2000	
68	60 W Pennington St	2	1999	2000	
15	3003 S. Country Club Road	16	2000	2016	Y
74	7401 N. La Cholla Blvd	2	2000	2001	
66	73 W Broadway Blvd	1	2001	2001	
69	45 W Pennington St	1	2002	2002	
70	45 W Pennington St	2	2002	2003	
32	11000 N. La Canada Drive	11	2003	2013	
64	3733 W Ina Rd	1	2003	2003	
49	9079 E Catalina Hwy	3	2004	2006	
57	101 N. Stone Ave	5	2004	2008	
62	3601 E. Broadway	1	2004	2004	
76	9340 E. Sellarole Road	1	2004	2004	
77	810 E. University Blvd	1	2004	2004	
43	802 N Riverside Dr	3	2005	2007	Y
55	5301 S. Houghton Road	4	2005	2008	
58	7635 N Oracle Rd	1	2005	2005	
59	1209 E University Blvd	3	2006	2008	
20	3000 E Broadway Tucson	7	2008	2014	
42	1352 W Speedway Blvd	3	2008	2010	Y
50	9028 E Catalina Hwy	4	2008	2011	
60	814 E University Blvd	2	2008	2009	
51	5830 E. Broadway Blvd	2	2009	2011	
14	101 W. Irvington Road	7	2010	2016	Y
21	400 S. Sarnoff Drive	5	2010	2014	
52	2160 N. Sixth Ave	1	2010	2010	
53	15921 S. Houghton Road	1	2010	2010	
54	7200 E. Tanque Verde Road	1	2010	2010	
61	60 W Wetmore Rd	1	2010	2010	
1	4949 W. Heritage Club Blvd	6	2011	2016	
2	100 S. Avenida del Convento	6	2011	2016	Y
23	5455 N. Kolb Road	4	2011	2014	

34	1200 N. Campbell Ave	3	2011	2013	
47	8701 S. Kolb Road	2	2011	2012	
30	8989 E. Escalante Road	5	2012	2016	
31	505 W. Miracle Mile	2	2012	2013	
33	400 N. Toole Ave	2	2012	2013	
48	1660 W. Ruthrauff Road	2	2012	2012	Y
22	3233 E. Speedway	2	2013	2014	
24	3601 E. Broadway	2	2013	2014	
8	10901 N. Oracle Road	3	2014	2016	
11	4502 N. First Ave	3	2014	2016	
12	7000 E. Tanque Verde Road	3	2014	2016	
18	9150 N Coachline Blvd	2	2014	2015	
26	2730 N.Silverbell Road	1	2014	2014	
27	5301 E. Grant Road	1	2014	2014	
29	4555 S. Mission Road	3	2014	2016	
35	350 N Wilmot Rd	2	2014	2015	
3	6541 E. Tanque Verde Road	2	2015	2016	
5	1501 N. Campbell Ave	2	2015	2016	
37	400 N. Toole Ave	2	2015	2016	
38	7413 E Sycamore Park Blvd	2	2015	2016	
40	6200 N La Cholla Blvd	2	2015	2016	
41	1209 E University Blvd	2	2015	2016	

Appendix 2: Methodological Details

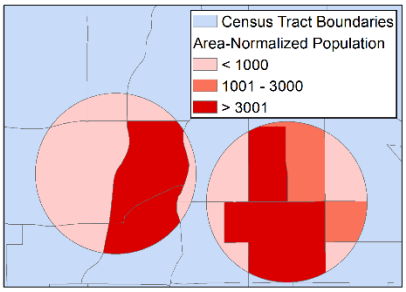
A Social Status score for each tract is calculated as follows, based on Hollingshead's (2011) formula:

$$S_T = aO_T * bO_T$$

O represents tract *T*'s mean occupation score. This is calculated by multiplying the number of individuals in a census-defined occupation class by the score assigned by Hollingshead, summing these values for each occupation class, and dividing by the total number of individuals in the workforce. *E* represents tract *T*'s mean education score, which is calculated in the same manner as occupation score, but divided by the number of individuals over age 25 (matching the age group for which censuses and the ACS provide educational attainment data. The symbols *a* and *b* are represent weights assigned by Hollingshead to occupation and education scores, respectively (*a*=5; *b*=3).

Census and ACS population measures were assigned to farmers' market sites proportionally based on the size of each tract's proportion falling within a one-mile radius surrounding the farmers' market site. Statistical measures (e.g,. median income) are allocated proportionally based on the percentage of the population of each buffer area made up by each census tract. A visual illustration of this process is included in Appendix Figure 1.

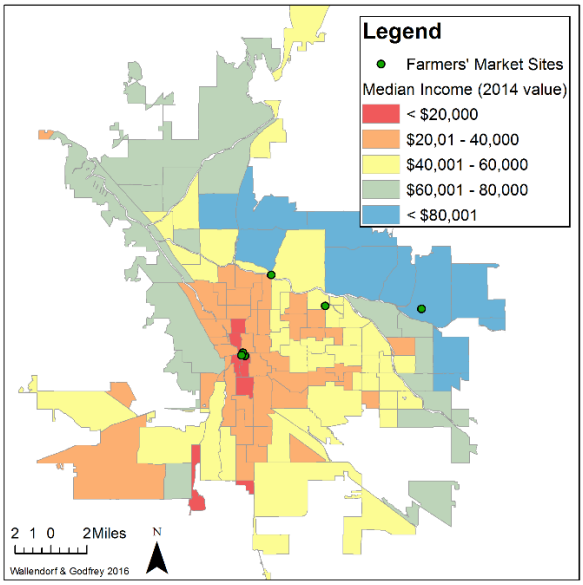
Appendix Figure 1:
Proportional Allocation of Census Attributes to Farmers' Market Radius



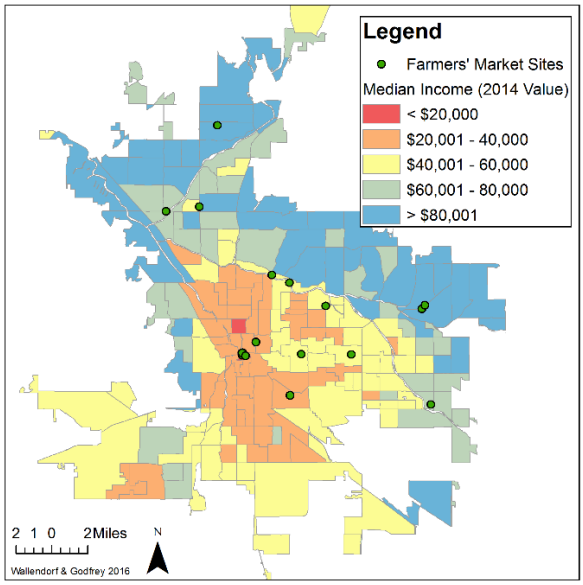
Appendix 3: Supplemental Maps

Appendix Figure 2: Median Income and Farmers' Market Sites, 1985-2014

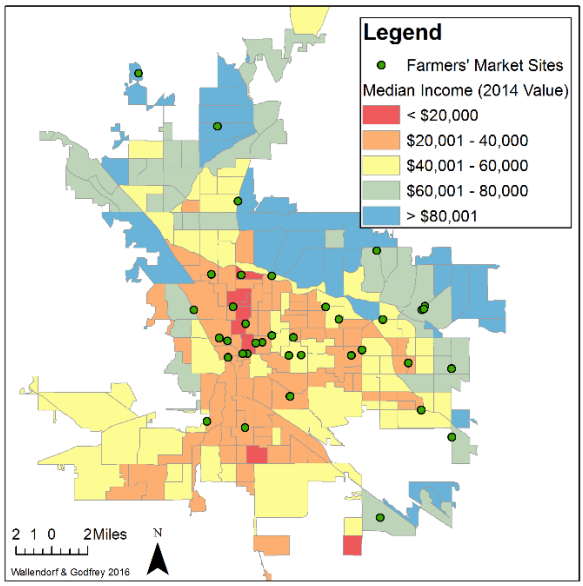
Income & Farmers' Markets, 1985-1994



Income & Farmers' Markets, 1995-2004

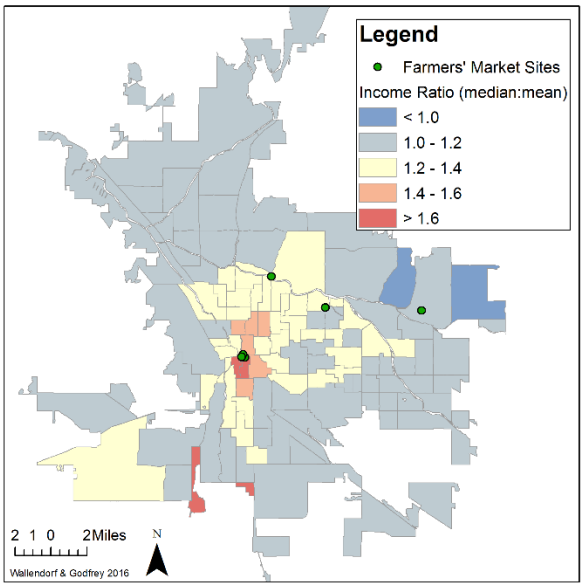


Income & Farmers' Markets, 2005-2014

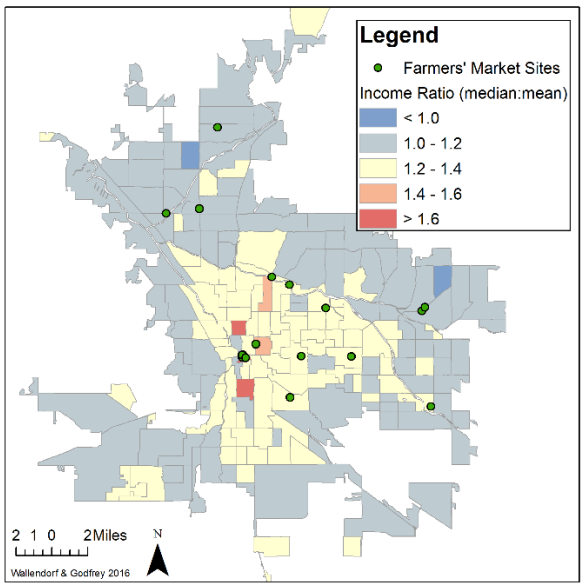


Appendix Figure 3: Income Distribution and Farmers' Market Sites, 1985-2014

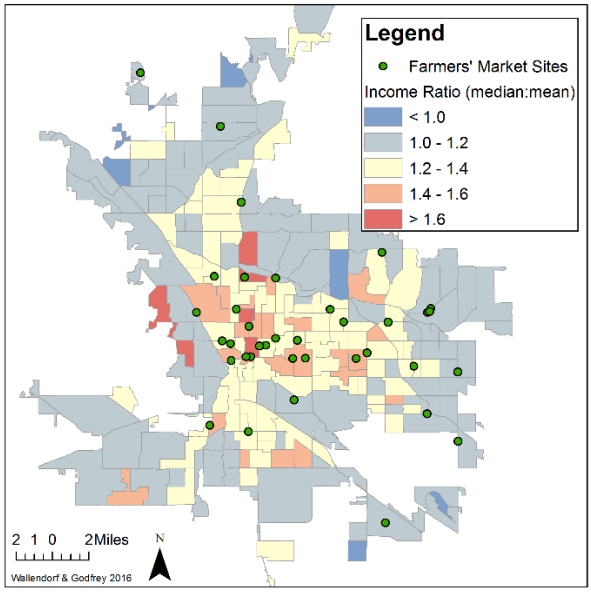
Income Distribution & Farmers' Markets, 1985-1994



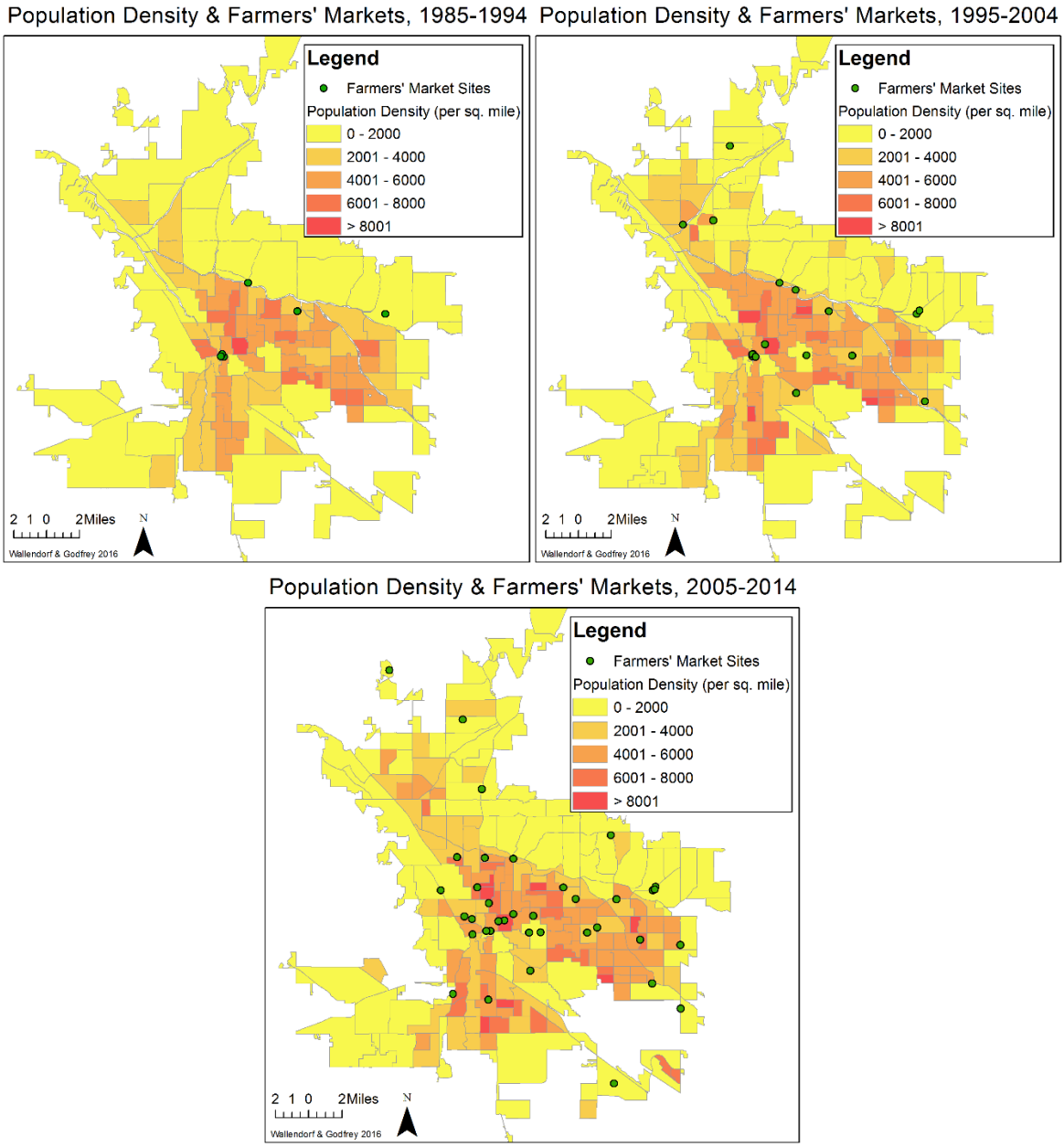
Income Distribution & Farmers' Markets, 1995-2004



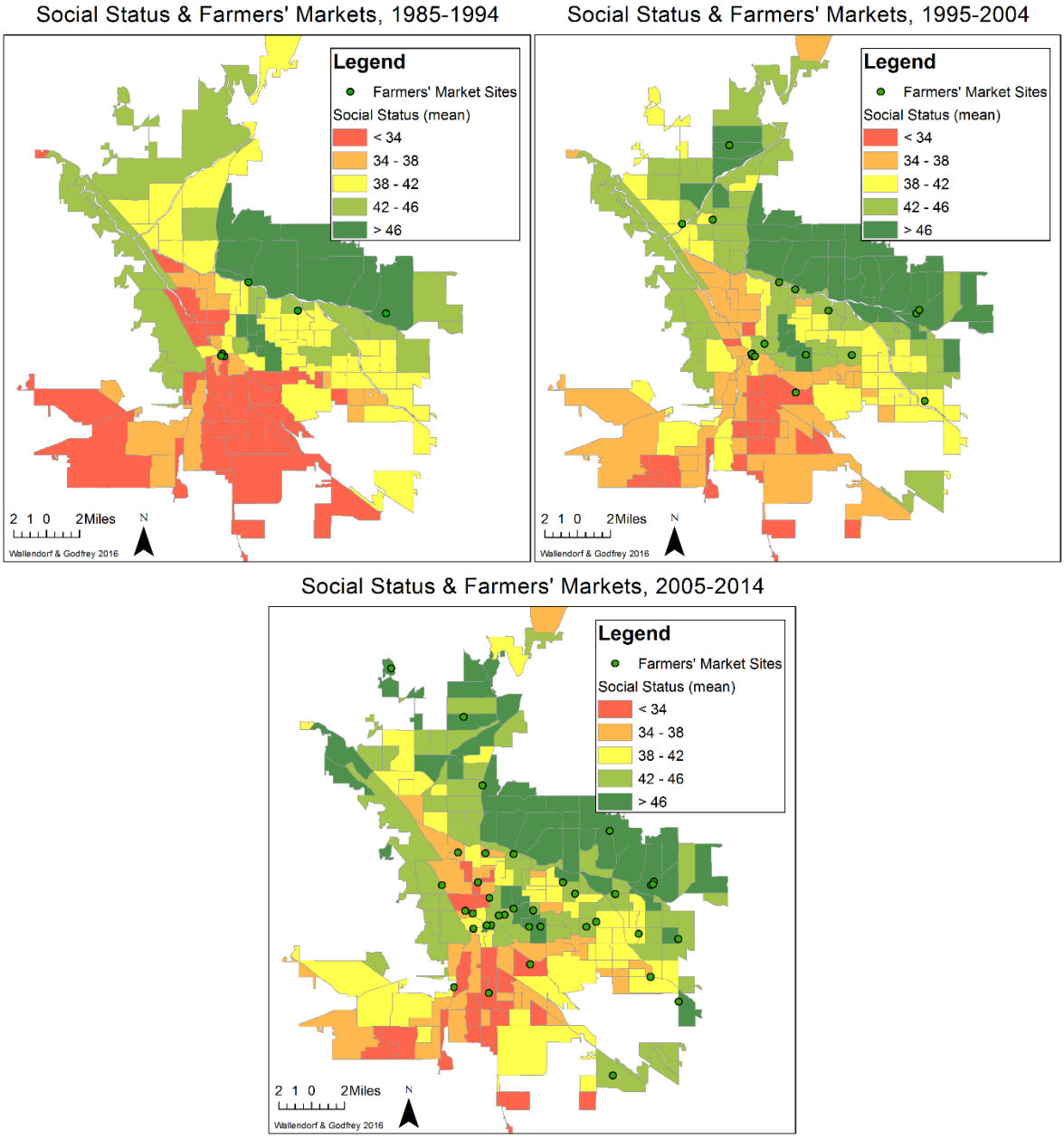
Income Distribution & Farmers' Markets, 2005-2014



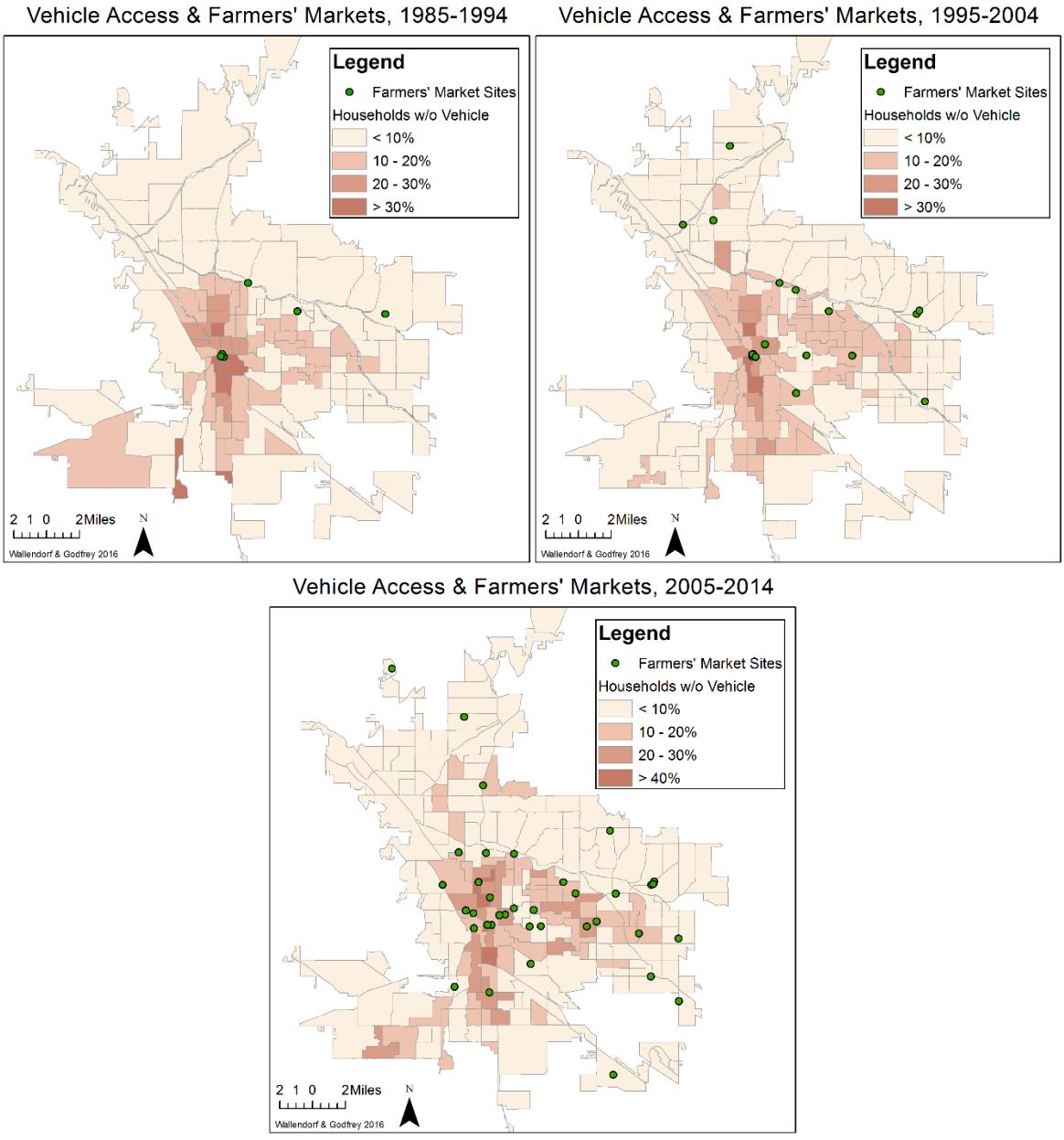
Appendix Figure 4: Population Density and Farmers' Market Sites, 1985-2014



Appendix Figure 5: Social Status (Occupation and Education) and Farmers' Market Sites, 1985-2014



Appendix Figure 6: Vehicle Access and Farmers' Market Sites, 1985-2014



Appendix 5: One Hundred-Year History of Farmers' Markets in Tucson, Arizona

Introduction

Farmers' markets have grown exponentially in number throughout the United States over the past three decades (USDA 2016) as part of a wider movement towards healthy, environmentally sustainable, and socially just alternatives to industrial, mass-market agriculture and food retail (Alkon 2008; Thompson and Coskuner-Balli 2007). But farmers' markets, both contemporarily and historically, have also been utilized tools in urban development projects. These projects are motivated, whether explicitly or implicitly, by a desire to produce a spatial order that reflects the ideological views of specific powerful institutions. This historical appendix explores these processes through a historical account of farmers' markets in Tucson, Arizona.

Data for the account of Tucson's first public market come from more than eighty articles published in *The Tucson Citizen* and *El Tucsonense*[8] newspapers, supplemented with historical narratives and accounts of the time period. We selected articles from these two target newspapers stored in online newspaper archives (Readex's America's Historical Newspapers database[9], and newspaperarchive.com[10]—both services available through the University of Arizona Library), using "public market" and "municipal market" as search terms. Data on contemporary Tucson Farmers' markets came from our ongoing ethnographic research, involving participant observation and interviews at local farmers' markets. As part of this project, we also conducted an inventory of farmers' markets from 1985-2016, which describe in the full paper. The ethnography focuses primarily on a medium-sized market operated by the Community Food Bank at Mercado San Augustin, but also includes comparative fieldwork at other Tucson farmers' markets.

In the subsequent sections, we provide an account of the development of the first public market in Tucson, Arizona. Using newspaper archives and historical narratives as data, we find that this original farmers' market was used as a tool in the construction of an idealized Anglo-American community. Additionally, we discuss how the development of contemporary farmers' markets in Tucson and other US cities mirrors the processes that led to the construction of dominant Anglo-American communities through public markets nearly one hundred years earlier.

Coalescence of an Anglo-American Community

The land comprising contemporary Tucson, Arizona, has been continuously inhabited and cultivated by indigenous peoples for millennia. Padre Kino's establishment of Jesuit missions at Tohono O'Odham settlements in 1691-92, and the Spanish military *presidios* (forts) that

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[8] Given the limitations of our basic knowledge of the Spanish language, we included only twelve articles from Tucson's main Spanish newspaper, *El Tucsonense*, in our data. We used search terms such as "mercado municipal" and "mercado publico" to locate these articles in digital archives, and relied on Google's online translation services combined with our our interpretations to gather a basic understanding of the public discourse around municipal markets in *El Tucsonense*. Our future research will obviously need to include a more detailed analysis of Spanish-language articles and other sources.

[9] Included *Tucson Citizen* publications from 1882, 1889-90, 1900-1922

[10] Included *Tucson Citizen* publications from 1916-1977

followed, ushered in a still-ongoing period of contestation over rights to land, religion, culture, and language. (Cosulich 1953)

With the victory of the Mexican Revolution in 1823, Tucson became part of the Mexican state of Sonora. Tucson's Mexican residents, who numbered about 700 by the 1840s (Cosulich 1953), worked for more than three decades to maintain their small city and presidio against a steady incoming stream of Apache raiders and American prospectors (Otero 2010). The United States army invaded and abandoned Tucson in 1846, but the US did not gain "ownership" over the city until the 1856 Gadsden Purchase (Cosulich 1953). Even after this time, Tucson remained predominantly Mexican until at least 1920, when the total population of the city had grown to over 20,000 (Otero 2010).

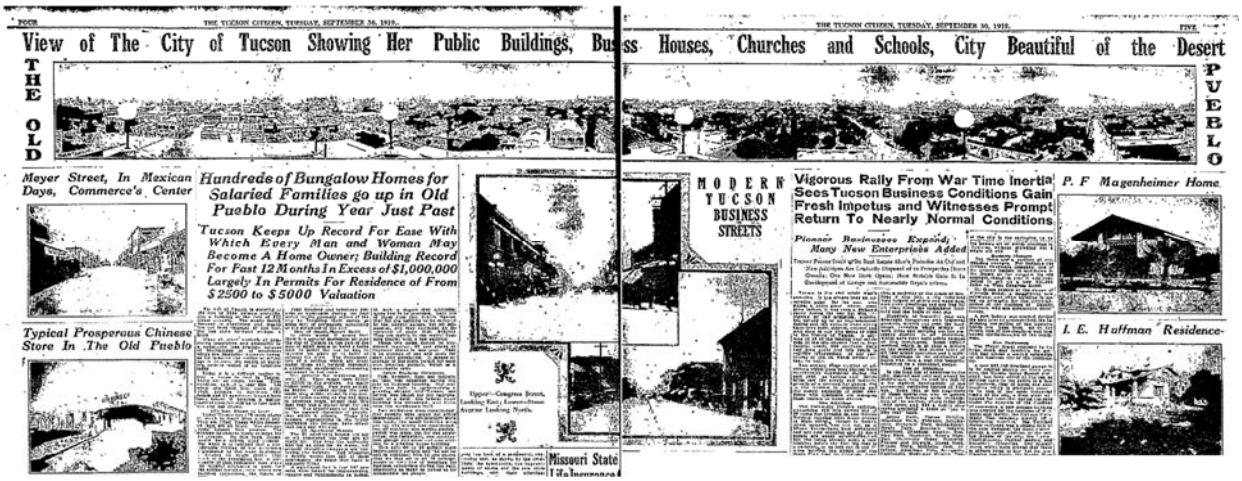
Anglo-American migrants to the region promoted Tucson's sunshine and business opportunities to Anglo-Americans in Eastern and Midwestern cities, enticing thousands to move to Tucson for their health and their fortunes (Devine 2015). Through their development and redevelopment efforts, Anglo-American businessmen and politicians attempted to construct a dominant Anglo-American community in Tucson.

The ideals of this community materialized through the construction of Anglo-American spaces. Anglo-Americans constructed brick-and-mortar homes, business, and municipal offices. These structures stood in stark opposition to the adobe row houses built and maintained in *la calle*, the district that was the physical and cultural heart of Mexican Tucson (Otero 2010). Figure 4 provides the locations of some key places mentioned in this paper.

Evident in the newspaper articles and echoed by historical narratives, the ideal Anglo-American city was industrious, pioneering, efficient, clean, and ordered. The cleanliness and sterility of its idealized factories mirrored an obsession with cultural and ethnic purity. Its order was enforced by powerful municipal governments that ensured the opportunities and freedoms required for American business and industrial enterprise. Exhibiting these idealizations, the 1919 annual review edition of *The Tucson Citizen*[11] gleamed with photos showing massive mines, newly paved highways, new brick buildings (e.g., "The Congress, One the City's Modern Hotels"), and perfectly maintained industrial equipment. The only mention of Tucson's Mexican past was a nostalgic set of photos showing two photos of "old" Mexican and Chinese Tucson in comparison to "Modern Tucson Business Streets" under a panoramic view of Tucson's modern brick-and-mortar skyline (See Figure 1). (*TC*, Tuesday, September 30, 1919).

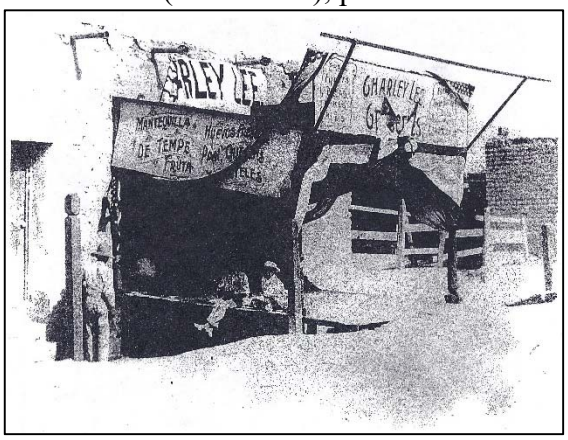
[11] *The Tucson Citizen* is noted as *TC* and *El Tucsonense* is noted as *ET*, followed by date and page number.

Appendix Figure 7: Old and New in "The Old Pueblo"

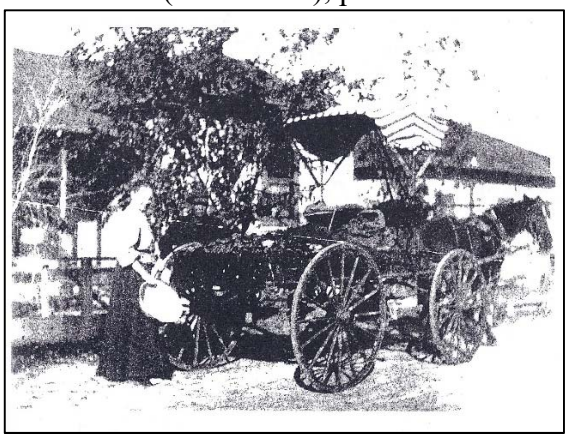


Newspaper accounts and tourist brochures from this era essentially erased Tucson's Mexican past and present (Otero 2010). However, efforts to erase or control Tucson's Chinese population were more explicit and strategic. Tucson's Chinatown, for example, was demolished in 1917 to make room for a new city hall (at the same location as the present-day city hall on W. Alameda Street), effectively dispersing the Chinese population throughout the downtown area and outlying settlements (Gressinger 2014; Thiel 1997). This was justified by the need for

Appendix Figure 8:
A Chinese-run grocery store in Tucson
(Thiel 1997), p. 23



Appendix Figure 9:
A Chinese vegetable peddler in Tucson
(Thiel 1997), p. 23



cleanliness and order. The *Arizona Daily Star* stated: "A walk through China town any evening will convince the pedestrian that all the evils and degradation incident to Chinese quarters may be found in the very heart of our city" (*Arizona Daily Star*, 1889, quoted in Thiel (1997, 6)).

The Beginnings of a Public Market: Strategic Production of Space

Despite these physical developments, non-Anglo-American culture and everyday practices continued. Chinese produce vendors still provided much of the city's fruits and vegetables at small grocery stores (Figure 2) and roadside stands (Figure 3) (Devine 2015).
Mexican residents and business owners proliferated in the narrow streets and alleys of la calle, living largely integrated lives alongside African Americans and other non-European immigrants (Otero 2010). Although spatially separated to a degree, these competing communities still shared common consumption venues. Most notably, the majority of Tucson's residents used Chinese vegetable peddlers to provide fresh produce for their households. Chinese peddlers chose their sites opportunistically,[12] both inside or outside the Chinese, Mexican, or Anglo-American parts of the city. But despite this physical integration the Chinese were not considered part of the Anglo-American city or community.
Arguments in favor of a public market in Tucson began circulating in the *Tucson Citizen* in 1911, with the chief benefits described as lowering prices for consumers and allowing "local" farmers and businessmen to compete with Chinese peddlers. In 1913, a vigorous initiative, led by members of the Tucson Chamber of Commerce, began lobbying for the construction of a "public" or "municipal" market in Tucson. An editorial in support of a public market clearly positioned the Chinese as outsiders.

> The Chinese vegetable vendor does not build up the community. If the money that now goes to him can be diverted to the American farmer it will encourage the building up of a great agricultural district around Tucson, reduce the cost of living and keep the money at home. (*TC*, December 13, 1913, p4).

Public or "municipal" markets in the United States began with an emulation of the great markets of European cities and became a key element of public life in the United States for over a century (Tangires 1997). Municipal, state, and federal governments endeavored to bring all exchange—particularly of edible products—under a single roof, making comparisons (and government regulation) of quality and price simpler and more transparent (Tangires 1997). As Tangires (2003) explains, municipal markets were "a mechanism for monitoring the moral economy at the local level—where familiar people, in a familiar place, could see, hear, touch, taste, and smell whether government was doing its job" (p. xx).
Tucson's Anglo-American business and political elite similarly utilized the concept of a public market as a strategy for enforcing "proper" ways of selling and consuming fruits and vegetables. Early advocates argued in favor of a constructing a new building that could act as both a city hall

[12] When the Phoenix Public Market opened in 1912 it included twelve enclosed stalls, twelve farmers' wagons "on the block," and "a number of Chinese peddlers on nearby streets" (*TC*, May 21, 1912, p3.). Articles in the *Tucson Citizen*, along with historical narratives, report that Chinese peddlers bought and sold their wares throughout the Anglo-American downtown and in *la calle* (Devine 2015; Otero 2010).

and public market, marrying state control with everyday productive and consumptive practices. (*TC*, June 04, 1913, p. 8)

The public market would materialize several key aspects of the ideal Anglo-American city. First, it would ensure cleanliness and order. The first public market proposition entertained by the city council included an ordinance that would require all merchants of perishable food products to become subject to a daily fee and sanitary inspection. Second, it would increase the efficiency of exchange between local farmers and Tucson's housewives[13]. Third, the market would facilitate ethnic separation by essentially phasing out Chinese produce vendors. One prominent proposition for the market included a provision that would require all produce retailers to submit to a regular fee and inspection in order to sell within the city (*TC*, June 5, 1913, p5). The ethnic separation facilitated by a public market was viewed as a vital part of the push toward cleanliness, order, and economic efficiency.

> "The local merchant need not fear so much the competition of a municipal market as the Chinese peddler, who, as a rule, handles mostly California truck [produce shipped from California] that is pretty badly wilted by the time it reaches the consumer. The Chinese peddler pays no taxes, except a small license and does nothing to build up the city." (*TC,* June 08, 1915, p4)

However, "the Chinese peddler" had also been denied any opportunity for citizenship (Thiel 1997), and thus would probably never see the benefits from taxes paid. Chinese merchants played a crucial role in building up Tucson and providing fresh fruits, vegetables, and other commodities to Tucson's Anglo, Mexican, and immigrant populations. However, they did "nothing to build up the city" as it was imagined by Anglo-American businessmen.

The Demise of a Public Market: Opportunistic Subversions of Space

Despite additional articles extolling a public market as "the best investment that Tucson has ever made," (TC, June, 08, 1915, p. 4), plans never seemed to get off the ground. In 1917, the notion of a public market began to gain more traction, as its proponents started promoting its potential to contribute to wartime food conservation efforts. By 1918, the Luncheon Club had recommended the formation of a company of "business men" to manage the market and urge the city to provide a $50,000 bond to build the public market (TC, March 15, 1918, p. 3).

Tucson's business elite hastily circulated a petition to bring the proposed bond to a vote, although only "qualified electors and taxpayers" were allowed to sign the petition and vote in the election (*TC*, February 28, 1918, p. 3). The City Council approved the $50,000 bond on conditions that the public market must operate first at a temporary location until it proves profitable enough to warrant a permanent building (*TC*, April 03, 1918, p. 5).

The city hired an experienced market master—a man who had overseen New York City's Washington Market and a large commissary at the Panama Canal (TC, April 19, 1918, p. 4).

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[13] Spaces and practices of consumption and production are often constructed as gendered spaces and practices. One historian noted that a prominent US public market manager and grocers in 1919 asked women to mind their own homemaking affairs and refrain from criticizing the male work of managing places of business (Tangires 1997).

However, over the next year-and-a-half, the $50,000 plan devolved into a proposal to convert the "old armory" (likely a reference to the abandoned military plaza of Camp Lowell, located at S. 6th Avenue and E. 12th Street, on the Anglo-American side of downtown) into a public market. Finally, the mayor pledged to spend $2,500 to build temporary stalls, hire a market master, and open Tucson's first public market at the "San Augustine (sp.) Plaza" (*TC*, August 13, 1919, p. 5), which was the central plaza known to Tucson's Mexican community as *La Placita* (Otero 2010) or *la Plazuela* (*ET*, Oct 11, 1919, p. 2). The public market would be constructed in the physical and cultural heart of *la calle* (Figure 4).

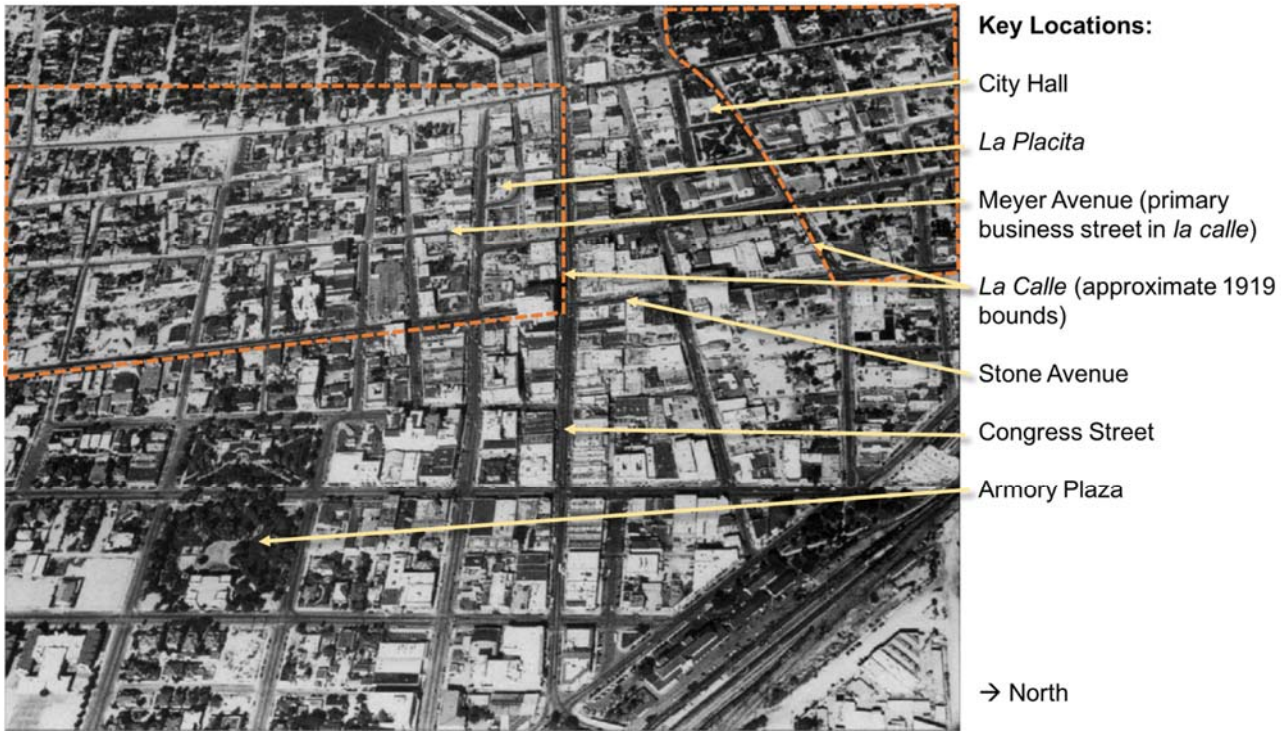
El Tucsonense gave its support for the market in several articles, though, in which the authors hope that the public market might alleviate some "abuse" inflicted by profit-driven grocery traders in the city:

> "The Committee of the Chamber of Commerce of this city has taken very serious steps towards the establishment of a market in the San Augustin Plaza, in which articles of daily consumption will be sold at remarkably low prices with the principal purpose of cooperating to destroy the spirit of excessive profit and abuse of most traders."[14] (*ET*, August 14, 1919, p5)

On opening day, *The Tucson Citizen* provided a shining report of the market's success. The market was so popular, the author reported, that it would thenceforth be open three days a week and would remain a permanent fixture of Tucson's modern movement—as evidenced by crews cleaning and filling the main road leading to the market (*TC*, August 19, 1919, p. 3). One week into the market's existence, the *Citizen* declared the public market's victory over high costs of living. The paper listed average grocery prices in the city before and after the market and reported a noticeable decrease (*TC*, September 30, 1919, p. 1). In late October, a committee consisting of three members representing the farming, business, and university communities was formed and tasked with regulating and monitoring the market. (*ET*, October 02, 1919, p. 2)

Appendix Figure 10: Downtown Tucson in 1940 (closest available image to 1919) (Gomez-Novy and Polyzoides 2003, 118, labels added)

[14] "El Comite de la Camara de Comercio de esta ciudad ha dado y pasos muy serios encaminados al establecimiento de un Mercado en la Plaza de San Augustin, en el que se venderá, a precios notoriamente bajos los artículos de consumo diario que ahi se expendan y lo que tendrá por principalisimo fin, el de cooperar en destruir el espíritu de desmedido lucro y abuso de la mayoria de los comerciantes."



Then suddenly Tucson's public market disappeared[15] from the pages of the *Tucson Citizen* after October 1919. However, *El Tucsonense* provides some hints as to the reason for the market's apparent demise, calling it a "weak market" (*ET*, October 11, 1919, p. 2) that was "not filling the objective for which it was created" (*ET*, October 02, 1919, p. 2.). At least for the Spanish-speaking community represented by *El Tuconsense*, the public market's failure was due to its inability to live up to the promise of low prices and equitable business practices.

> When the Municipal Market was opened it seemed to still be progressing, but in fact, with the exception of the booths in the Plazuela prices have risen. Nothing more has been done because sellers are now attending in lesser numbers than before, and it is presumed that hoarders have been throwing the hook at products, which initially were selling in that Mercado Municipal, so that prices remain high.[16] (ET, October 11, 1919, p. 2)

El Tucsonense called for an investigation into the market's failure (*ET*, October 11, 1919, p. 2), but it seems that the investigation—or at least the required changes to market management—did not come.

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[15] Although multiple databases and search terms were utilized, no English-language documents could be found referring to any public or municipal market in the city of Tucson, Arizona after 1919.

[16] Cuando se inauguró el Mercado Municipal, pareció que seguiría en progreso, pero a decir verdad, excepción hecha de las casetas que en la Plazuela se han levantado, nada más se ha hecho, pues los vendedores concurren ahora en menor número que antes, y esto hace presumir que los acaparadores han estado echando el gancho a los productos que al principio se estaban vendiendo en el citado Mercado Municipal, a fin de que los precios continúen altos.

Four years later, editorials published in *El Tucsonense* would call for a new public market in Tucson. This market, the paper stated, needed to offer fair prices to consumers and, most importantly, fair opportunities for local producers. In 1923 Tucson, an editorial stated that "hoarders" and resellers monopolized the grocery retail market, making it impossible for farmers to sell directly to consumers. The producers who rented the public market's space would share the cost of the building, including construction and utilities. (*ET*, November 8, p. 3). However, this new public market never materialized.

The historical records examined for this paper provide limited insight into the types of "hoarder" and other activities occurring at the market. However, it seems clear that unintended use—whether by consumers, middlemen, or food producers—took the market by surprise and rendered it ineffective in administering its strategic aims.

Toward A Public Market for the Twenty-first Century

Public markets had largely ceased operating in the urban landscape of most US cities by the end of World War II, with several factors leading to their downfall. Deregulation of food retail, the rise of supermarkets, and increased suburbanization by white, middle-class consumers shifted business and political attention away from public markets (Bowlby 2001; Cohen 2003; Tangires 2003).

Tucson's business and political leaders found much more success constructing an Anglo-American ideal city through these new suburban spatial arrangements. Within seven years of the opening of the El Con Mall, three miles east of downtown, every downtown department store relocated to the new suburban shopping center. New neighborhoods outside Tucson's urban core provided homes for thousands of migrants from other regions of the United States. New shopping centers and supermarkets continued to open farther and farther from downtown and *la calle*, following the rapidly growing suburban population of Tucson. (Devine 2015)

In these changing economic and spatial environments, the public markets remaining in the US needed to reinvent themselves in order to attract the white, middle-class consumers who had fled into the suburbs back to the city center. To this end, many public markets became tourist-focused, selling artisanal foods and hand-made crafts (Pyle 1971). This complemented a wider movement for urban renewal, which carried serious spatial, economic, and cultural consequences for Tucson and other US cities.

To lure shoppers back to downtown Tucson, business and political leaders proposed a massive project that would clear the adobe homes and businesses of *la calle* and replace them with modern businesses, government offices, parks, and a convention center. The plan was approved by Tucson's majority Anglo-American population in 1966, allowing for the demolition of most of the historical homes—and removal of residents—in *la calle* (Otero 2010). Ironically, Tucson's urban redevelopment project failed to bring shoppers and tourists back from the suburbs to downtown—it was still "dead" as a retail center in the 1990s (Regan 1997).

As an ironic remedy given Tucson's history, the farmers' market again became a tool of urban development to attempt to bring suburbanites back to downtown commercial areas. Tucson opened its first "modern" farmers' market in 1985. This small downtown market included arts and crafts vendors as well as local farmers selling their goods in an alley behind Stone Avenue downtown, between Alameda and Pennington Streets. After a single season, the "Downtown

Mercado" moved to the privately-owned La Placita Village,[17] but closed after just one season at that location (Arizona Daily Star archives).

Additional markets opened downtown, the most successful being christened the "Tucson Public Market." Anne Bowen and Jefferson Bailey, owners of the B&B Café, opened the Saturday morning farmers' market in 1990 in a parking lot adjacent to a remodeled Oddfellows Hall at 135 S. Sixth Avenue, where their restaurant had relocated. Bowen and Bailey were strong believers in the redevelopment of Tucson's downtown. Securing a $45,000 loan from the Tucson Local Development Corporation in addition to $20,000 of their own funds, Bowen and Bailey struggled to push their Tucson Public Market forward with their B&B café. However, both eventually closed in the mid-1990s. The city hoped that farmers' market would help to establish a downtown arts district and bring back businesses and customers to its downtown core (*Arizona Daily Star*, Jul 21, 1991), but apparently Tucson's suburban consumer public was not yet ready to come downtown.

Dozens of farmers' markets opened and closed in the Tucson region over the next two decades. Since 1985, eighty markets have operated for at least one season. These markets lasted an average of 3.8 seasons, and a surge in farmers' market start-ups began in the late 2000s. Since 2010 at least twenty farmers' markets have operated during any given year[18].

Just as Tucsonans imagined that a public market could transplant a local version of Portland's progressive business environment one hundred years ago (*TC,* August, 29, 1917), the Tucson of the twenty-first century again uses farmers' markets as a powerful urban redevelopment tool. The most long-lived markets (at Plaza Palomino and St. Philip's Plaza) have been sited within new open-air shopping centers filled with high-end clothing boutiques, art galleries, and restaurants. Recent proposals to redevelop downtown's Ronstadt Transit Center and surrounding areas included a farmers' market (Swaim Associates Ltd. 2015), and the market where we conducted the bulk of our ethnographic fieldwork is located in a new shopping plaza that anchors an urban renewal project one mile west of downtown. In others cities farmers' markets have been found to correlate significantly with gentrification (Cox 2015).

Many contemporary farmers' markets in Tucson and other North American cities share an underlying ideological space that is connected to a wave of efforts to construct a citizen-consumer hybrid (Giesler and Veresiu 2014; Johnston 2007). The citizen-consumer represents a movement to place responsibility for community and global well being on individual consumers, rather than on governmental or corporate entities. By "voting" with their wallets, informed and progressive consumers are put in charge of the sustainability and human rights issues that relate to systems of production and consumption—as opposed to that responsibility lying with state or corporate actors (Giesler and Veresiu 2014).

However, voting with consumer dollars emphasizes the importance of consumers who are economically stable and highly. In the United States, these types of consumers tend to be

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[17] La Placita Village is a collection of boutique shops and offices constructed in a brightly-colored, modernized Spanish colonial style. Along with the re-routing of Broadway and Congress Streets, in La Placita Village replaced the leveled the *placita* that had been la calle's central fixture—and the location of Tucson's first public market. Ironically, La Placita Village is now the target of a new generation of demolition and urban renewal proposals (Steller 2013).

[18] See the full paper for a discussion of this database of farmers' market locations from 1985-2016, based on our ethnographic fieldwork and a review of Arizona Daily Star articles from 1992-2016.

disproportionately white and English speaking. The citizen-consumer ideal is materialized through health food stores, farmers' markets, and artisanal restaurants (Johnston 2007; Thompson and Coskuner-Balli 2007; Thompson and Troester 2002).

The increasing power of the citizen-consumer does not grant it total power over the consumption spaces that embody many of its ideals, though. Opportunistic practices enacted by less dominant groups and individuals still challenge the legitimacy of "proper" citizen-consumerism, even at local farmers' markets. Our ethnographic research, outlined earlier in this paper, provides examples of such opportunistic practices.

The discursive interplay between strategic, top-down production of space and the opportunistic consumption of space never fully settles. At temporary and fluid consumption sites such as farmers' markets, the battle between strategies and tactics becomes readily apparent. But some questions still remain. What differentiates tactics that are tolerated or ignored—and often result in adjustments to physical and event theoretical spaces—from those that are supressed (literally paved over in some cases) or targeted for re-education? How do consumers respond to these strategic limitations on their tactical use of space?

Out future research will continue to examine these issues. However, consumption and public spaces such as farmers' markets will clearly play a key role in the construction and evolution of cities and communities. By understanding how these forces operated in the past, it may be possible to avoid many of the inequitable consequences inherent in the strategies that pushed forward Tucson's first public market.