FOOD SECURITY AND ACCESS IN AKRON, OHIO

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FOOD SECURITY AND ACCESS IN AKRON, OHIO

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Thesis

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ABSTRACT

Food security is the ability for all people to have all the food they need to live a healthy and active life. Food access is the way in which such food is acquired. Food access can be evaluated geographically and economically for people living in urban areas. In Akron, Ohio, grocery stores were surveyed to look for available food items and prices in order to show if certain areas of the city were "underserved" and thus food insecure. Service areas, correlation to demographic items of Census tracts (race, income, public assistance, vehicle availability, and education) to food access, and maps of the store characteristics have been generated. The grocery stores in Akron contain on average fewer than half of foods suggested by the US Department of Agriculture (USDA) and, although they have a high percentage that accepts food stamps, only three accept WIC coupons. Food prices were lower and availability was better for service areas with less income, transportation, and education, while food stamps were less likely to be accepted at these same stores. Using the Food and Agriculture Organization (FAO) definition of food security and all its components as a reference, Akron grocery stores provide an incomplete, and thus food insecure, situation for those living in the inner city.

Keywords: food security, grocery stores, access, Akron

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When I fed the poor, they called me a saint.

When I asked why are the poor hungry, they called me a communist.

Dom Helder Camara

Archbishop of São Paulo

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CHAPTER I

INTRODUCTION

One of the most fundamental human needs is food. It supplies the energy and the proper nutrients required for human activity and life. Perhaps the most important questions facing all societies since the beginnings of urbanization thousands of years ago have been where food comes from and how it gets to those who want it and need it. This includes such issues as how much food humans need, where they can get it, what kind of food they can get, and how it can be acquired.

While many may feel that food security is no longer an issue in "developed" countries, current research suggests that it is still an issue in the post-industrial urban centers of the United States, including Akron, Ohio. Questions of geographic attainability, economic affordability, and nutritional sustainability may be, in part, measured by investigating certain characteristics of grocery stores – where they are, what they sell, and what they charge for certain food items.

It is the intent of this research to create a meaningful evaluation of food security by applying the Food and Agricultural Organization's (FAO) universally recognized definition to grocery stores in inner city Akron. This approach is

unique since food security is usually evaluated by questionnaires and surveys of individuals, not from the perspective of citizen accessibility to stores. Most importantly, this research explores the food security realities within the impoverished areas of inner city Akron, Ohio and attempts to achieve a better understanding of how grocery stores serve their respective communities. A more developed and deeper understanding of these dynamics will hopefully lead to improvements in Akron's food system that will benefit all.

Hypothesis

Food insecurity is a reality for many inner city Akron residents according to the established definition of food security by the FAO. The degree of food security and food access can be quantified, and there are statistically significant geographical relationships between the characteristics of food stores and persons who live in their service areas.

CHAPTER II

LITERATURE REVIEW

There is a wide and varied literature pertinent to this study drawn from the fields of economics, nutrition, international development, retailing, social science, and geography. These previous studies are reviewed under the following categories: (1) food security, access, and rights, (2) hunger and health, (3) grocery stores, and (4) studies on grocery store access.

Food Security, Access, and Rights

The US Department of Agriculture (USDA) defines food security as the ability for people to have "assured access, at all times, to enough food for an active, healthy life" (Andrews, 1999, 1). The World Bank (n.d., para. 1) adds to this definition the need for "quality, quantity, and diversity" of food. The Food and Agriculture Organization (FAO) broadens these definitions: food security is "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2001, Glossary). Finally, Leidenfrost (1993, 2nd definition) notes that a minimum definition of food security also includes "an assured ability to acquire acceptable

foods in socially acceptable ways (e.g.; without resorting to emergency food supplies, scavenging, stealing, or other coping strategies)".

The term "food security" was originally coined as a way of addressing food-related problems in industrializing countries (World Bank, 1986). Household food security is often assessed in terms of a multi-tiered rating system: food secure, food insecure without hunger, and food insecure with hunger. Food insecure with hunger can be sub-divided into moderate or severe hunger. With moderate hunger, adults reduce their own food intake, often for the sake of children. Severe hunger is where the children of a household also have their food intake reduced (Ohio Hunger Task Force, 2001).

Anderson and Cook (1999) have tried to bring together varying threads of the idea of "community food security" (CFS) into a cohesive set of ideas rooted in a common theory. They assert that three main groups contribute to food security: 1) community nutritionists and educators, 2) progressive agricultural researchers and grass roots activists, and 3) anti-hunger and community development researchers and activists. All three have different objectives and interests, but together they form the collective interpretation of community food security.

Conceptually, food security can be divided into food availability, food access, and food utilization (World Bank, n.d.). Thus, in order to utilize (i.e. eat) food it must be accessible, and in order for it to be accessed it must be available.

Frongillo (1999) describes food insecurity for individuals along the following spectrum: the least severe form is people who are uncertain of being

able to obtain food in socially acceptable ways, to the most severe form where people simply do not eat enough due to insufficient resources and thus "experience the physical and psychological consequences of hunger" (Frongillo, 1999, 506s). In this view, food insecurity has four components: quantity and quality of food (related directly to food), and certainty and acceptability (psychological and social).

Food security is most commonly evaluated through direct questioning (interviews or questionnaires). The Food Security Supplement is a measure of food security based upon two previous developed measures from Radimer/Cornell and the Community Childhood Hunger Identification Project (CCHIP). These questionnaire-style measures have proved to be accurate and precise measures of food security (Frongillo, 1999; Carlson, et al., 1999). A household is food insecure when: 1) there is worry that food will run out before more money is available to buy more, 2) the food purchased does not last and money to buy more food does not exist, and 3) financial resources are inadequate to purchase food for balanced meals (Economic Research Service, 2000).

Food insecurity is widespread. About 7.8 million persons in the US were food insecure *with* hunger in 1999 (Economic Research Service, 2000). Ten percent of all US households are food insecure, while nearly 17 percent of all children live in food insecure households (Ohio Hunger Task Force, 2001). In Ohio, 8.5 percent of households are food insecure, 3.4 percent overall that are food insecure with hunger (Nord, et al., 1999).

Food access is the means by which food security is satisfied. Leidenfrost (1993) states that food security in developed countries consists of three aspects pertinent to food access: 1) the quantity and quality of food available, 2) its geographical accessibility, and 3) the affordability of food. Common factors in food access are: available shopping facilities, available transportation networks, price and availability of healthy foods, individual knowledge regarding healthy eating, and a suitable household budget (New Policy Institute, 2000; Koralek, 1996; Staatz, 1996).

Food access is a short-term (1-3 years) dimension of household food security and is generally viewed as part of the more long-term goal of reducing poverty and improving food markets (World Bank, n.d.).

The FAO Director-General Jacques Diouf says that the "right to food" is "the most fundamental of human rights" (Diouf, n.d.). In this light, it would seem that since the US is faced with rare levels of hunger for an industrialized country it would be in its citizens' best interest to have the US sign, ratify, and enforce the International Covenant on Economic, Social and Cultural Rights. Since the US has not ratified the Covenant and because the US Constitution says nothing of human rights, the US does not have any formal international obligation to "take appropriate steps to ensure the realization" of the right to adequate food and "to be free from hunger" as the Covenant requires (UN, 1966, Article 11).[1] Additionally, even as a signatory to such a document, the US needs to create programs for achieving the goals, mechanisms for enforcement, and subject itself

[1] Up to date listings of signatories and ratifying countries can be found here: http://www.un.org/Depts/Treaty/final/ts2/newfiles/part_boo/iv_boo/iv_3.html

to international oversight. This would require massive time and effort, funding, popular support, and political will, which at present, are lacking in the US.

The addendum to the food security definition requires people acquire food in "socially-acceptable ways" (Leidenfrost, 1994). This appears to argue against community-based food support. It excludes many methods by which many impoverished people get their food: food banks, shelters, public assistance programs, and the like. This definition (repeatedly stated in the literature) suggests that someone is only food secure when the ability to eat is *individually obtainable, not publicly assured*. Boles (1986) applies a counter-veiling thought by arguing that "equality of opportunity" is insufficient to achieve "equality of outcome", and includes distributive equality and equality of access, both applicable towards the question of food security.

This structural viewpoint sees three separate, and perhaps hierarchical, "food rights": 1) the right to be fed, 2) the right to food, and 3) the right to feed. The first, emergency food feeding, is viewed as passive and patronizing; the second, the ability to acquire food, is product-oriented; and the third, to have control over food supply and decision making, suggests active agency and is preferred (Van Esterik, 1999).

Hunger and Health

Hunger is a situation in which someone unwillingly goes without food for an extended or intermittent period of time (Ohio Hunger Task Force, 2001; Economic Research Service, 2000). As a social issue, it has been on the public

agenda in the US for the greater part of 60 years (Poppendieck, 1997). Poppendieck says the social problem of hunger in the US is really poverty-related malnutrition. Hunger (and food insecurity) increases with poverty (Klein, 1998). Therefore, it is instructive to also look at conditions of poverty when studying hunger and hunger-related issues.

At every geographic scale, people experience hunger and poverty. In Ohio, 1.3 million people are still living in poverty (Ohio Hunger Task Force, 2001). In the city of Akron, 20 percent of residents fell below the poverty level in 1989 (US Census Bureau, 1990a).

In addition to adults, hunger and poverty directly affects children. Approximately 12 million children under 18 years old experienced hunger during 1991 in the US. Compared with other industrialized countries, poor children in the US are worse off than poor children in all but two of the 18 industrialized countries (Cook and Brown, 1996). One in six children in Ohio go to bed hungry or are at risk of hunger each night (Ohio Hunger Task Force, 2001). Twenty-five percent of children ages 5 to 17 that live within the Akron city school district during 1997 were estimated to be poor (US Census Bureau, 1997), which suggests that a significant number of Akron's children may be hungry.

Women, Infants, and Children (WIC) is a program that subsidizes the purchases of certain nutritional items to supplement a healthy diet for pre- and post-natal mothers, and children. The total number of women, infants, and children served by the WIC program in Summit County decreased from 1998 to 1999 by 2.9 percent of those eligible (Ohio Hunger Task Force, 2000). Even

more alarming, are the extreme changes in the food stamp program. From 1996 to 1999, there was a sharp decrease in participating individuals and households, average monthly benefits, and total benefits administered in Summit County. The change in benefits decreased nearly 40 percent during this three-year period (OHTF, 2000).

Another health concern is of dietary imbalances and excesses that are related to certain diseases - such as heart disease, some cancers, stroke, and diabetes. These now rank among the top causes of illness and death in the US. Health differences between the poor and affluent are “almost universal for all dimensions of health whether it be undernutrition or diet-related chronic disease” (Nitzke and Phillips, 1998, Problem section, para. 8).

The increasing trend of obesity in the US has been shown to be related to unhealthiness stemming from poor nutrition (Townsend, et al., 2001). Townsend found a positive correlation between food insecurity and overweight women nationwide. Although it seems paradoxical that someone with less food would actually gain more weight, the phenomenon is clearly witnessed in Townsend’s study. One possible explanation rests in overeating by food insecure households when food is plentiful (for example when food stamps or money for food is available), followed by involuntary restriction. Such an eating pattern could result in gradual weight gain. A *New York Times* article on the same subject suggests additional explanations: lack of nutritional knowledge, daily habits, and limited access to stores with healthier foods (Barboza, 2000).

Grocery Stores

Any store whose primary sale item is food may be classified as a grocery store. This ranges from small corner “ma-and-pa” stores to large supermarkets. This range can be viewed hierarchically: larger stores will usually have more items for sale, lower prices, more floor space and more aisles, more specialty sections, and are more likely to be part of a larger corporate grocery chain (Census Bureau, 1992). For most, getting a wide variety of food at low prices means shopping at supermarkets.

The supermarket is “a retail format with long-established ties to suburban, middle class life” (Lavin, 2000, 49). It functions on the strategies of “impulse buying, promotion of national brands, and customer self-service” (Michman and Mazze, 1998, 6). Shopping at supermarkets has “taken on ritualistic meaning within urban life, linked to wider social themes of family, gender and identity” (Pritchard, 2000, 206).

In the US, many major chain grocery stores left inner city areas following race riots in the 1960s (Weinstein, 2000). To this day, some still claim insurance costs for fire and theft are so high in such neighborhoods that grocery stores will not locate there (Michman and Mazze, 1998). Thus, food retail outlets follow a “hole in the donut” model with wealthy suburbs surrounding an under-served inner-city core, which is attributed to a failure in the US to promote multi-class, mixed-use downtown areas (Toronto Food Policy Council, 1996).

A study of retail market share and saturation states that only in the case of small towns will all stores compete with each other. Analysis becomes more complex when the city is large enough to have multiple stores where distinguishable sub-markets exist. In such cases, stores are not all in direct competition with each other (O'Kelly, 2001). Unlike in the suburbs, there is no saturation of supermarkets in the inner city, and therefore retailers are looking to these areas for expansion. What attracts them is the more than $331 billion of "retailing purchasing power" that inner city residents wield (Janoff, 1999).

The grocery industry in the US was one of the last to be released from the wage and price controls of the early 1970s. Grocery retailing has become a much more concentrated industry, with fewer but larger grocery chains controlling more market share –the top five companies control one-third of the market. As a result of this concentration, an estimated 100,000 jobs have been lost in the food industry since mid-1995 (Keh and Park, 1997; American Antitrust Institute, 1999).

US supermarkets controlled between and estimated 40 percent and 65 percent of the retail food market in the 1990s (Toronto Food Policy Council, 1996). Supermarkets have consolidated to the point where the top five supermarket chains controlled 37 percent of the market in 1999. According to Gambino this consolidation weakens the power of both manufacturers and consumers. Family-run and regional chains are viewed as the next targets of acquisitions (Turcsik, 2001). There also has been a concerted effort by large department stores to enter into the food retail business. As a result, powerful

chains can exert enormous influence onto an industry that already has very small profit margins.

Sexton and Zhang (2001) observe that the present trend of increasing food industry market power and consolidation can lead to an even larger share of market surplus. They observe that concentration in food manufacturing has grown rapidly through mergers and consolidations, and that "exercise of market power *anywhere* in the market chain will reduce consumers' welfare" (their emphasis) (Sexton and Zhang, 2001, 60). Sexton and Zhang were primarily concerned with food manufacturing (not food retailing) and although these are at different stages in the food distribution network, their work is important because of its direct implication for food insecurity, in this instance being provoked from behind the scenes.

The top four firms in the US own 43 percent of national supermarkets. The largest grocery chain in the US, Kroger, is now being rivaled by Wal-Mart, the world's largest department store. Wal-Mart sold $15 billion in supermarket sales in 1999, putting it as the 5th largest supermarket chain in the US, even though it is not technically a supermarket. An increasing percentage of Wal-Mart's sales are from supermarket items – now at 30 percent of all sales (Franklin, 2001). Wal-Mart plans to open "neighborhood stores", to primarily sell food items, effectively putting it into direct competition with large supermarket chains (Seiders and Tigert, 2000).

Seiders and Tigert (2000) did a case study on the effect of supercenters by looking at four American metropolitan areas, including Columbus, Ohio. They

found that Wal-Mart and K-Mart supercenters captured 16 percent of primary shoppers and 27 percent of secondary shoppers in the study (primary stores are most often shopped, while secondary stores are second most frequented). In the case of Columbus, 41 percent of shopped considered a convenient location to be at least twice as important as any other reason for choosing stores (Seiders and Tigert, 2000). This may indicate that Wal-Mart and other supercenters and department stores may be using their market share to move into other industries.

Although difficult to gauge in the case of Akron, if national trends are occurring locally, then it is likely that the horizontal integration of department stores such as Wal-Mart is having an impact upon supermarkets and grocery stores in Akron, Ohio.

Studies on Grocery Store Access

Studies of food access in urban centers have shown the tendency for food to be less accessible (physically and financially) in lower-income neighborhoods and core urban areas (Cotterill and Franklin, 1995; Sustainable Food Center, 1999; Toronto Food Policy Center, 1996; Koralek, 1996). Financial impediments can also exist for the elderly and disabled (Klesges, 2001). However, Cotterill and Franklin (1995) have observed that the city of Cleveland was an exception to this rule because a specific chain made a dedicated effort to re-enter urban areas. [2]

Limited access to grocery stores is not only an urban problem; a study of a large rural area has indicated that certain people, mainly the poor, have limited

[2] Dave's Supermarket. Later it will be noted that Dave's is planning to do the same in Akron.

access to grocery stores. These rural stores are similar to those in the inner city – both places have high prices, lack a variety of food items, and are geographically removed from inexpensive supermarkets in the suburbs (Kaufman, 1999).

These grocery store access studies have been conducted at different geographical scales using different criteria. For example, Cotterill and Franklin (1995) studied 21 of the US's largest metropolitan statistical areas (MSA's) and evaluated the floor space per capita aggregated at the zip code level, comparing the percentage of people on public assistance and the percentage of private vehicle ownership with what they discovered in each metro area. The study found that zip codes with a higher percentage of public assistance tend to have "significantly less square feet per capita of grocery space" (Cotterill and Franklin, 1995, 7). Also, zip code areas with the highest public assistance levels also had the fewest stores per capita. Vehicle ownership also drops drastically with higher levels of public assistance.

The Sustainable Food Center (SFC) studied the impoverished community of East Austin, Texas and considered the cost per "food basket" of each grocery store, availability of staple items, and the supermarkets per capita ratio. The study found that two supermarkets serve 24,000 residents living within a six-square-mile area, while in the rest of the Travis County there is one supermarket for every 8,876 people. They also found that many shoppers lack transportation and needed to rely on carpooling, buses, taxicabs, and walking to get to food stores. As a result, most did not shop at their preferred store, but stores that are

more easily accessible. Convenience stores are often chosen because they are quicker and closer than supermarkets. Yet among the 38 convenience stores in East Austin, “only five offer a selection of food choices from which it would be possible to cook a nutritious balanced meal” (SFC, 1999, “Limited access to food” section).

Klesges, et al. (2001) studied food access for women 65 years and older with disabilities living in retirement communities in Baltimore. The study found that minority women (49.5 percent) were more likely than White women (13.4 percent) to report financial difficulty acquiring food. Among those reporting financial difficulty, only 20 percent received food stamps and fewer than 7 percent participated in food assistance programs. Also, nutritional services were rare in these communities, compounding nutritional deficiencies.

Dowler (1999) study mapped grocery store locations and surveyed available food items in London. Although its findings are not as comparable due to it being in the United Kingdom, its methodology is useful. It identified roads within 500 meters of well-stocked and “reasonably” priced shops and created local maps of food access. Dowler also developed food access indices “in relation to low income and ethnic minority groups”, a food availabilities index, and a food price index (Dowler, 1999, 2). However, no association between inadequate food access and poor income areas could be made.

Kaufman’s (1999) survey of rural households in the Lower Mississippi Delta area measured net accessibility by a ratio of available large grocery stores and potential food spending of a household, aggregated on a multi-state zip-code

level. Thirty-eight percent of the zip codes studied had food supplies that matched or exceeded the demand. The rest were areas where food expenditures were not fully satisfied by accessible large retailers. The study also determined that rural households face supermarket prices that are roughly four percent higher than suburban markets.

Akron's citizens have noticed the disparity of available food in their communities and have sought solutions to this problem in recent years. For example, the lack of a supermarket in Akron's predominantly Black Westside, prompted community leaders to campaign for a supermarket. Acme, a locally-owned supermarket chain, created its very first franchised store for this community, Henry's Acme, which is run by a man who rose up the ranks of Acme starting as a bag-boy (Ethridge, 1999). [3]

The site of a former Acme supermarket on East Exchange Street has been vacant for a number of years, thus depriving the city's center from any supermarket. Yet, it was announced in mid-2001 that a Cleveland supermarket chain called "Dave's" would be building on the former Acme supermarket grounds. This development will likely greatly aid those in this community by increasing their food access and security (Mackinnon, 2001).

[3] Henry's Acme fell just outside of this paper's study area, but its inclusion would likely have played a role in shifting some of the results.

CHAPTER III

METHODOLOGY

This research attempts to answer the issue of food security with a new approach. This study assesses food security by evaluating the location of grocery stores and the availability of specific food items instead of trying to determine food security via standardized questioning. The definition of "food security" is applied to the situation of Akron, Ohio in a thorough fashion to accomplish this.

Food security is approached from the perspective of the consumer, not the grocery store owner. Rarely has location analysis been done from the perspective of the consumer or citizen. Since the beginning of grocery store analysis in the early 1930s, the focus has been on grocery companies wanting to know their trade areas and market share. Later, it continued to be used by businesses as they developed planned shopping centers (Applebaum, 1968).

To determine food access, a key component in food security, all the stores in a defined study area in Akron were visited, and information on grocery stores and the conditions of those whom the stores serve were gathered. The following explains how this was done.

The study area was delineated by selecting an area within a half-mile buffer (in which the average human can walk within roughly ten minutes) around

all census tracts that had a 1990 mean household income of 150 percent of the poverty threshold. The 1990 Census is the most recent data on the tract level for Summit County (where Akron is located). Even though the 2000 Census has been conducted, information aggregated on that scale will not be available until after this research is completed. The 150 percent boundary was chosen as it includes those already technically in "poverty" and those bordering on or at risk of poverty. The poverty threshold is dependent upon the mean household size of each particular tract.[4] A map of the study area and surveyed grocery stores is in Fig. 1.

Food stores were identified from a number of sources: an on-line phonebook from US West, called www.qwestdex.com; the December 2001 edition of the SBC Ameritech yellow page directories; and a listing from the Akron Regional Board of Development tracking retail stores from 1995. All stores that did not sell food as a their primary item of sale (such as gas stations and department stores) and non-Akron city stores were eliminated from this list.

Using this directory listing and the defined study area, a total of 38 stores were surveyed (Fig. 1). The addresses on this list were mapped using ArcView 3.2. This process was double-checked and subsequently corrected for inaccuracies. A number of stores that were missed by the initial directory were added as soon as they were located. Also, some stores said to be in the study area were sometimes not found once the author arrived at the address, while others had since been closed.

[4] The table explaining poverty threshold can be found on the Internet here: http://www.census.gov/hhes/poverty/threshld/thresh90.html

Grocery Stores in Inner-City Akron, 2002

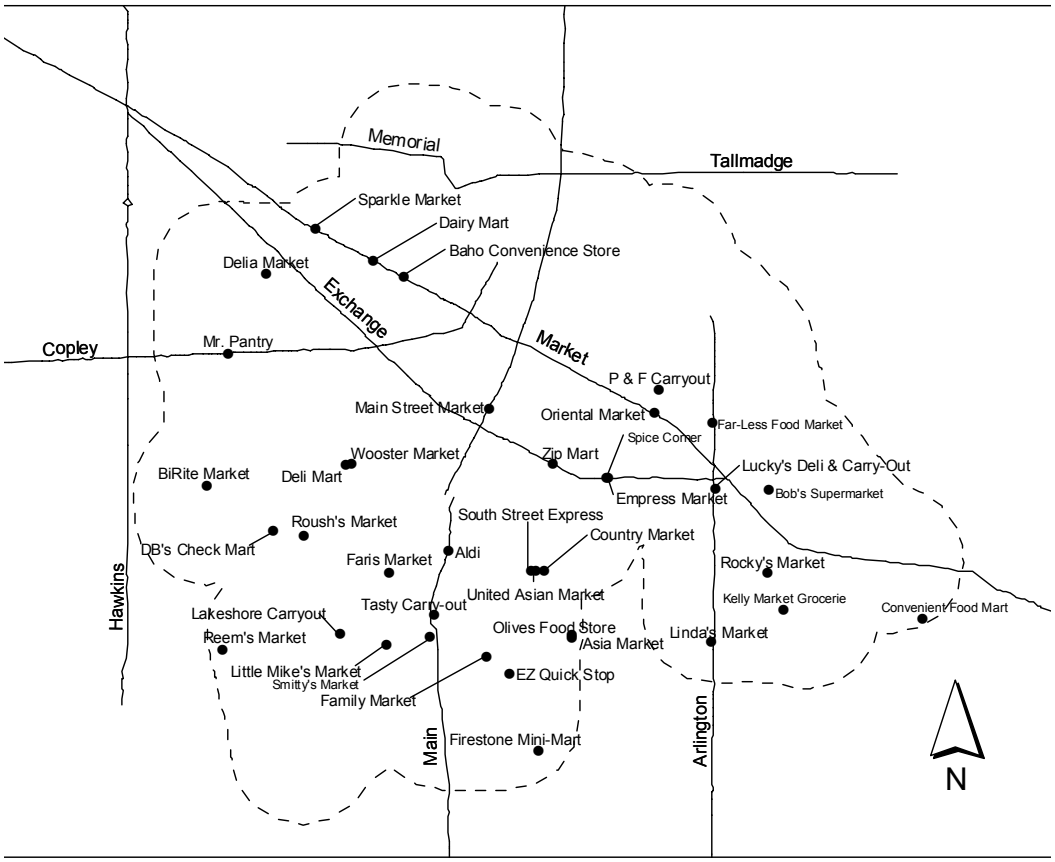

Figure 1. Grocery Stores in Inner City Akron, 2002

A large supermarket in an affluent neighborhood outside of the study area was surveyed as a control. This store provided data that is used to compare with the results of the study area.

Restaurants or other “eat-out” establishments, and emergency food supply locations such as homeless shelters, the Salvation Army, food banks, Meals-on-Wheels, or reduced-school lunch programs were not included in the definition of “food store”. The vast majority of food is still purchased from food stores, and despite the increase in “eating-out” and food bank usage, the food stores remain an important component of the urban food system. Grocery store costs fall in-between the more expensive “dining-out” option and the free emergency food sources, but this is only when evaluating cost in economical terms, not necessarily time or effort.

The researcher visited each store during the period of December 6, 2001 to January 14, 2002. Upon arriving at a store the manager or owner was approached, given an explanatory letter, and informed about this research project (Appendix 1). Permission to look about the store and gather data was requested and granted at all stores.

The data gathered for each store included: store name, address, hours of operation, acceptance of food stamps and WIC, the approximate size of the store, and date visited (Appendix 2). Then, using a list of 42 food items, it was noted whether the store had each item, and if so, the most cost-efficient item’s price, unit size, and brand (Appendix 3).

The list of 42 food items were drawn from Hogbin, et al. (1999), a USDA listing of low-budget and healthy food purchases for a family of four for a two-week period. Items for this study were chosen that appeared on both weeks of the two-week "grocery lists" suggested by the USDA. The format (i.e. frozen, fresh, packaged, canned, etc.) of the food item was preserved with the recommendations while surveying, for example only frozen peas, canned green beans, and fresh carrots, and so forth. There were only two variances on this rule—liquid orange juice was accepted, and both dry and canned kidney beans. During the surveying, a few previously unspecified restrictions on varieties and flavors were made: white or wheat bread loafs, spaghetti noodles, any form of turkey or chicken, and Italian salad dressing.

The researcher used the ArcView extension "Network Analyst" to determine service areas of the food stores. It traverses the available roads and routes, finding how far away one can be from a given store in order to reach it in a certain amount of time or distance. Network Analyst uses the concept of the "Manhattan distance" that is only established routes. It eliminates distance calculated "as the crow flies", which is sometimes a possibility for non-automobile travel.

All the demographic information comes from the 1990 US Census and relies upon the proportion of block group that fell within a given service area. Thus, if a service area happened to contain one-quarter of a specific block group that had a 4000-person population, it was assumed that the population was

evenly distributed, and thus 1000 people of that block group were within the store's service area.

CHAPTER IV

FINDINGS

The data collected from the grocery store survey has been analyzed in a variety of ways. The findings of the survey of grocery stores are broken into three categories: (1) geographic, (2) non-geographic, and (3) other. Maps, tables, and correlations have been employed to better illustrate the realities of Akron's inner city.

Geographic

Most areas in inner city Akron were relatively close to a food store (Fig. 2) when considering a half-mile travel distance or "service area". The area covered by store service areas is 14.5 square miles, or 56 percent of the more than 25 square mile study area. Some of these areas have fewer residential spaces than others, but the northern portion of Akron, known as "North Hill", where many people live, had no food stores within the survey area. Table 1 contains the number of people that live within each store's service area.

Population, household incomes, public assistance, vehicle availability per household, and high school graduation rates of all persons over 25 were calculated for all store service areas (Table 1). The geographic distributions of

household income, public assistance, vehicle availability, and high school graduation in the study area are shown in Figs. 3, 4, 5, and 6.

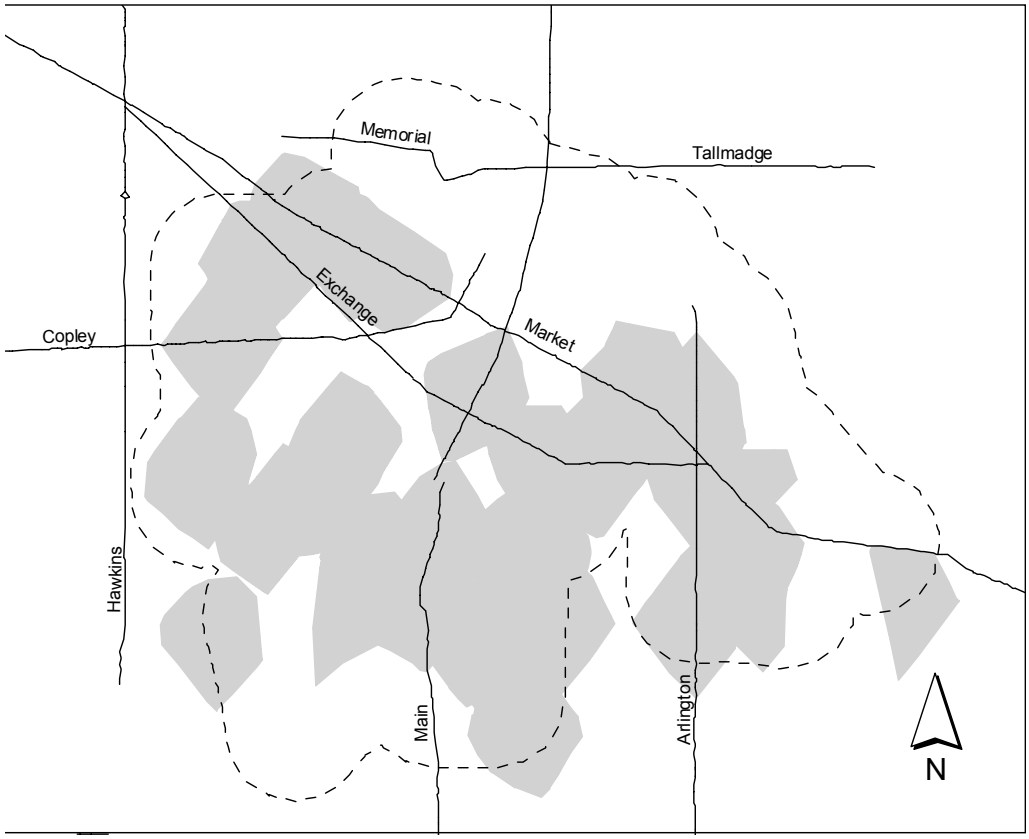

Figure 2. Store Service Areas in Inner City Akron Study Area

Table 1
Demographics of Store Service Areas

Store name	Population	Median Household Income ($)	Public Assistance Income (%)	Vehicle Availability (per hhld.)	High School Graduates (%)
Aldi	1,843	13,589	32	1.12	56
Asia Market	3,669	20,545	14	1.43	64
Baho Convenience Store	3,712	18,289	16	1.25	73
BiRite Market	3,740	19,465	20	1.36	66
Bob's Supermarket	1,300	10,351	36	1.11	49
Convenient Food Mart	1,238	26,317	8	1.88	66
Country Market	3,493	14,332	24	1.34	63
Dairy Mart	4,305	16,864	13	1.21	77
DB's Check Mart	2,990	14,733	28	1.26	56
Delia Market	5,265	22,807	20	1.40	75
Deli Mart	2,700	8,240	37	0.85	48
Empress Market	3,667	14,900	12	1.44	71
EZ Quick Stop	3,826	18,323	20	1.47	63
Family Market	2,715	14,433	26	1.36	59
Faris Market	3,200	13,881	37	1.15	47
Far-Less Food Market	2,980	14,692	20	1.30	62
Firestone Mini-Mart	4,339	27,530	7	1.73	78
Kelly Market Groceries	1,963	13,435	34	1.06	63
Lakeshore Carry-Out	2,021	10,498	49	1.04	51
Linda's Market	4,145	15,632	28	1.31	63
Little Mike's Market	2,128	12,302	39	1.16	47
Lucky's Deli & Carry-Out	2,991	14,582	26	1.23	56
Main Street Market	1,594	15,595	21	0.81	71
Mr. Pantry	4,236	23,252	24	1.45	67
Olives Food Store	3,619	20,320	14	1.42	64
Oriental Market	3,503	14,939	15	1.28	67
P & F Carry-Out	2,894	14,370	16	1.27	66
Reem's Market	3,315	26,899	5	1.62	73
Rocky's Market	2,032	12,262	33	1.04	58
Roush's Market	2,265	13,136	31	1.24	51
Smitty's Market	1,613	13,295	31	1.18	47
South Street Express	3,085	13,808	26	1.27	62
Spice Corner	3,657	14,822	12	1.45	71
Star Market	4,959	23,285	9	1.34	87
Tasty Carry-Out	1,937	13,278	31	1.18	47
United Asian Market	3,306	13,862	25	1.30	62
Wooster Market	2,615	7,905	36	0.80	47
Zip Mart	4,454	10,636	6	1.57	81

Source: US Census Bureau, 1990b

The median values for service area demographics were calculated, and low and high values noted (Table 2). These demographic ranges for store service areas show the geographical variations between the service areas and

inform the analysis as to how each store serves a different population. The store with the least populated service area was the Convenient Food Mart on Massillon Road (1,238 people in its service area) and the store with the most populated service area was the Delia Market on Delia Avenue (5,265 people). The most impoverished service area is that of the Wooster Market on Wooster Avenue ($7,905), while the most affluent service area is the Firestone Mini-Mart on Aster Avenue ($27,530). The area with the highest public assistance income dependence is for Lakeshore Carry-Out's service area (49 percent) and the lowest is the Reem's Market service area (5 percent). The highest level of vehicle availability is found in the Convenient Food Mart service area (1.88 vehicles per household) and the lowest vehicle availability in the Wooster Market service area (0.80 vehicles per household). The highest level of high school graduates is at the Star Market's service area (87 percent), while the lowest level of high school graduates occurred at four different store service areas: Faris Market, Little Mike's Market, Smitty's Market, and Wooster Market (all at 47 percent).

Table 2
Summary of Store Service Area Demographics

Demographic	Low	Median	High
Population	1,238	3,143	5,265
Household income ($)	7,905	14,637	27,530
Public assistance (% of hhlds.)	5	24	49
Vehicles per household	0.80	1.28	1.88
High School graduates (%)	47	63	87

Source: US Census Bureau, 1990b

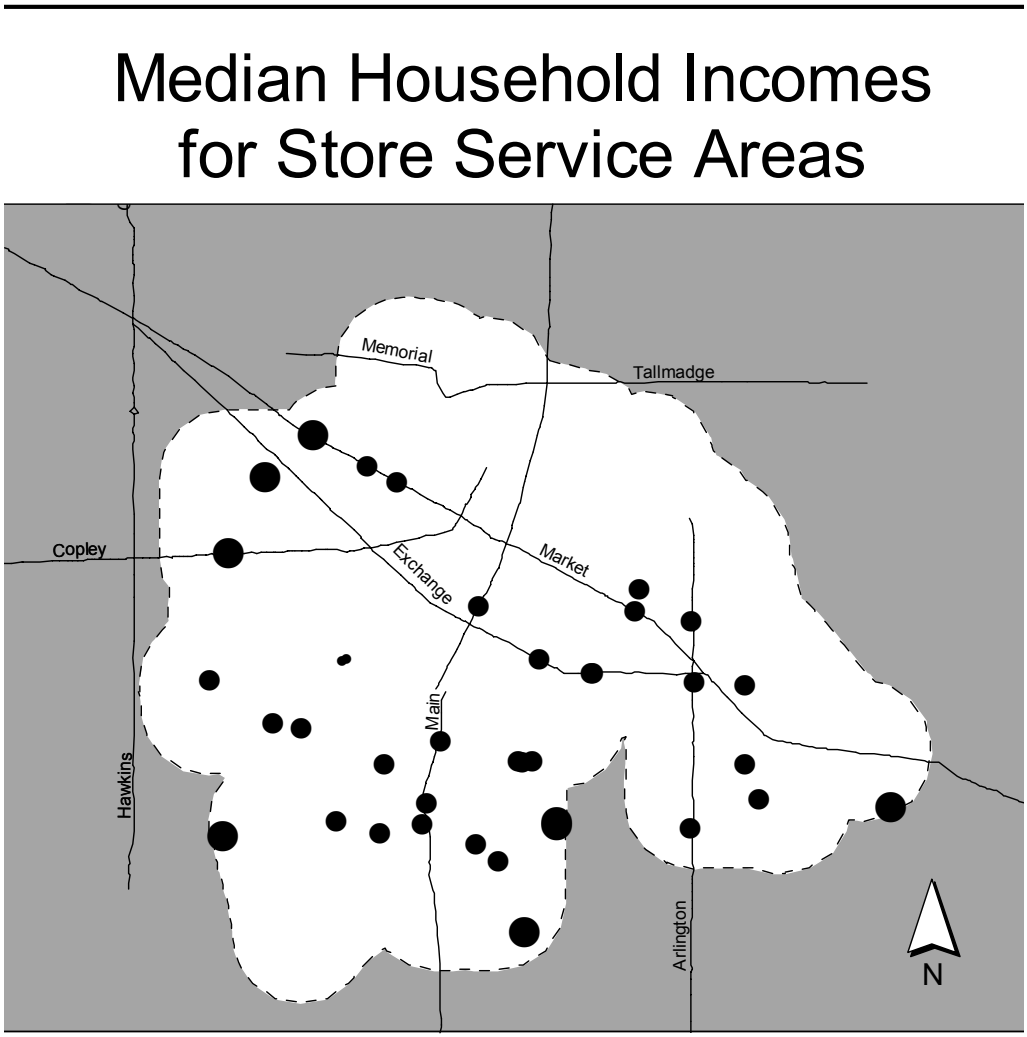

Figure 3. Median Household Incomes for Store Service Areas

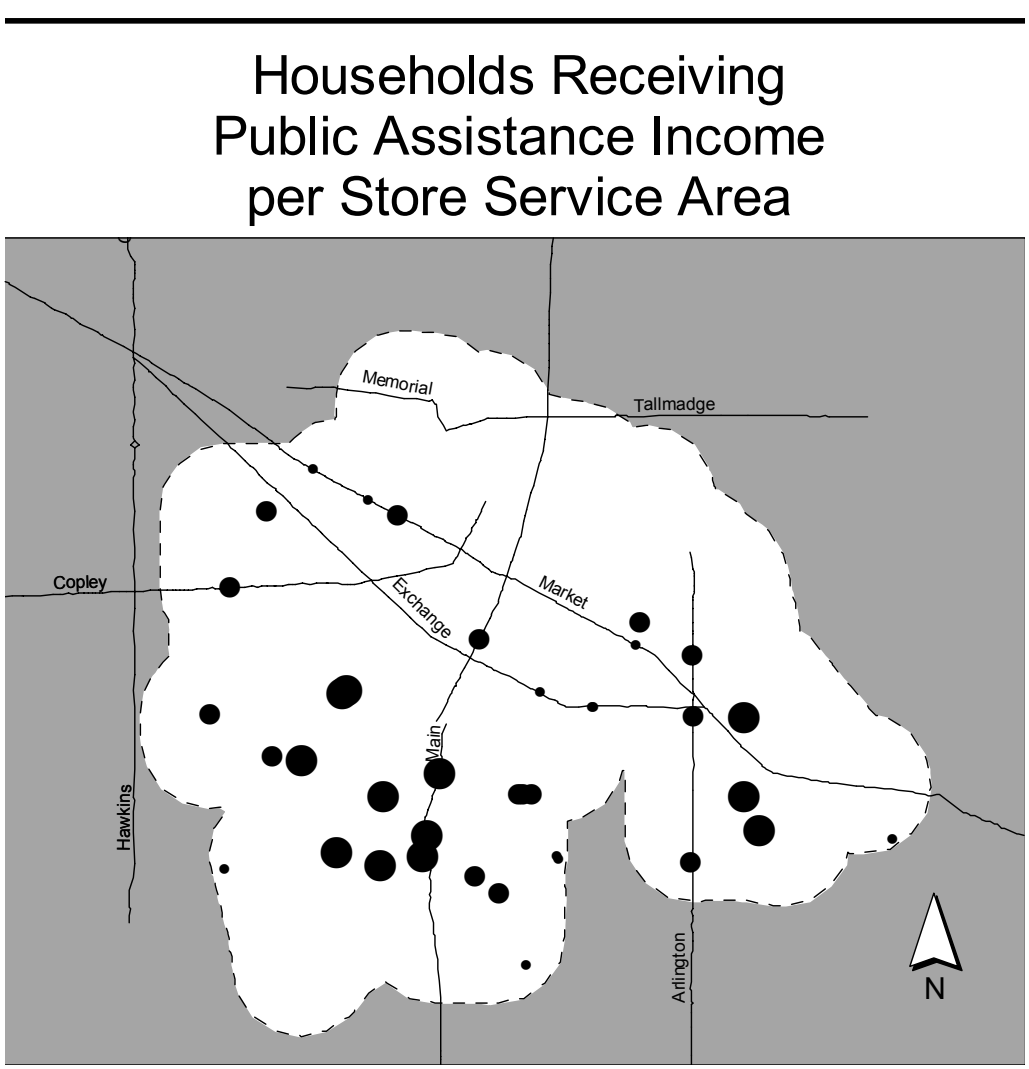

Figure 4. Households Receiving Public Assistance Income per Store Service Area

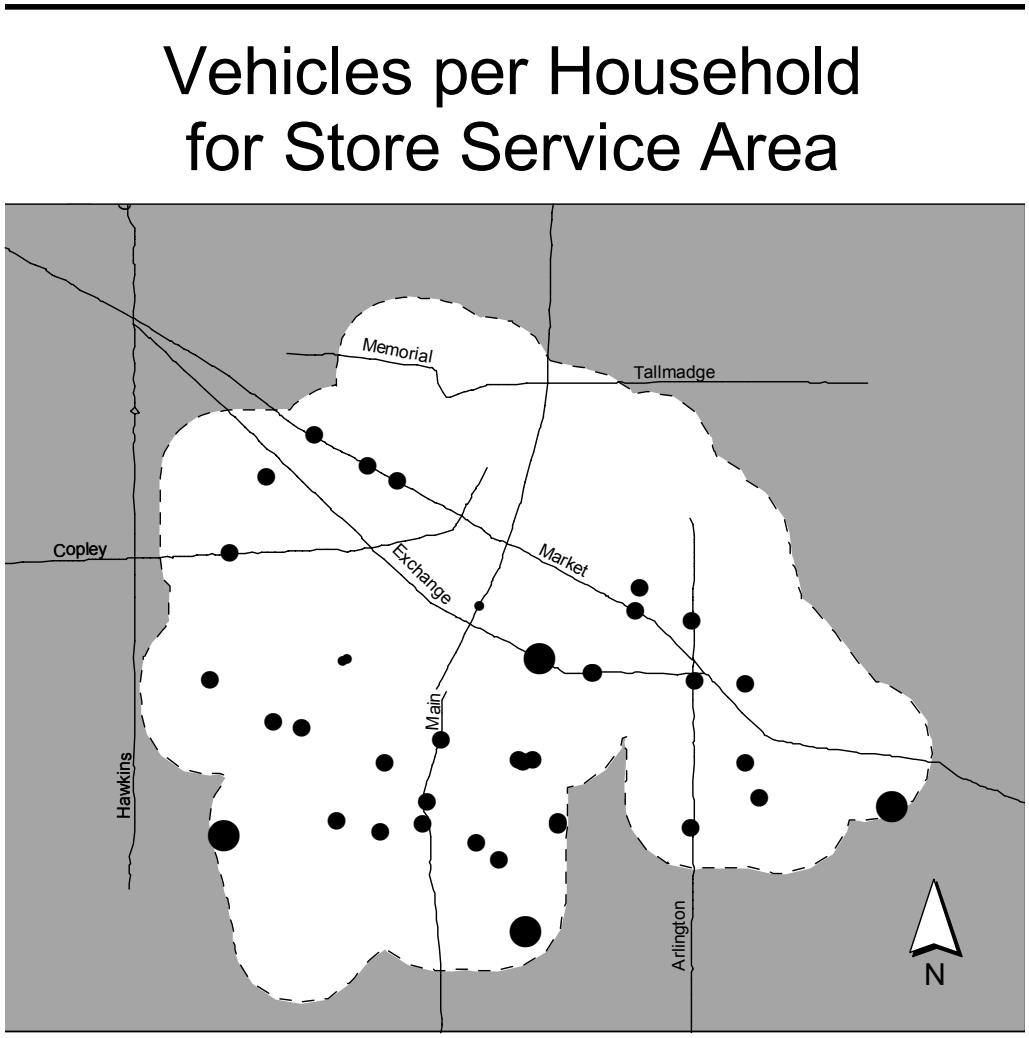

Figure 5. Vehicles per Household for Store Service Area

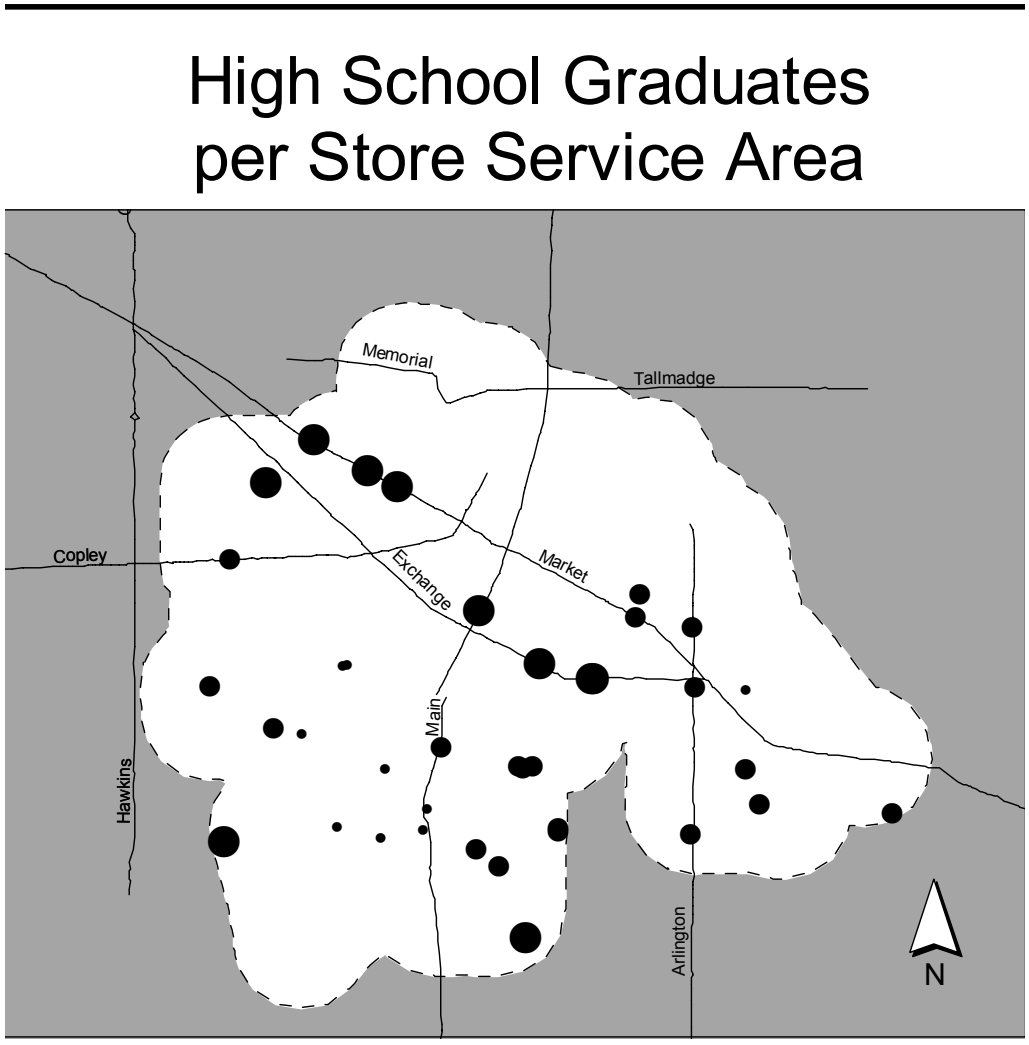

Figure 6. High School Graduates per Store Service Area

According to Christaller's theory on central place, grocery store service areas have limited ranges that form thresholds between service areas. Customers will tend to travel to the closest available store and will not cross these theoretical thresholds to get food (Berry and Harris, 1970).

There was a significant correlation between the demographics of the service areas: the smaller the household income, the fewer vehicles available, the more likely to be receiving public assistance income, and the less likely to have graduated from high school. Conversely, the higher the household income, the more vehicles available, the less likely to be receiving public assistance income, and the more likely to have graduated from high school. This trend is not too surprising, since it is a rather uniform cultural phenomenon. Race (Black/White) was also examined as a demographic variable, but it did not correlate to any of the variables.

The three main characteristics of food stores (availability, cost, and public assistance) had varying correlation results. Food item availability increased with lower household incomes (Table 3), higher levels received public assistance (Table 4), and fewer vehicles (Table 5). Food prices (considering both mean and median prices) corresponded with lower household incomes, more public assistance income, and fewer vehicles. Food stamps tended to be less accepted at stores where more households received public assistance income, fewer vehicles were available, and fewer were likely to have graduated from high school (Table 6). WIC was not significantly correlated to any of the tested demographic variables.

Thus, although food item availability and prices are related in a positive way for those who would be at greater risk of food insecurity, food stamps acceptance is related in a negative fashion.

Table 3
Food Item Availability Correlated to Service Area Characteristics

Variable	Significance	Pearson
Median Household Income	.003	-.437
Public Assistance Income	.031	.305
Vehicle Availability	.010	-.376
High School Graduates	.063	-.253

Source: US Census Bureau, 1990b

Table 4
Cost Correlated to Service Area Characteristics

Variable	Significance	Pearson
Median Household Income	.021	.332
Public Assistance Income	.009	-.385
Vehicle Availability	.018	.342
High School Graduates	.118	.197

Source: US Census Bureau, 1990b

Table 5
Food Stamp Acceptance Correlated to Service Area Characteristics

Variable	Significance	Pearson
Median Household Income	.136	.183
Public Assistance Income	.008	-.389
Vehicle Availability	.049	.273
High School Graduates	.034	.300

Source: US Census Bureau, 1990b

Table 6
WIC Acceptance Correlated to Service Area Characteristics

Variable	Significance	Pearson
Median Household Income	.246	-.115
Public Assistance Income	.361	.060
Vehicle Availability	.054	-.265
High School Graduates	.424	-.032

Source: US Census Bureau, 1990b

The racial composition of each store's service area (Table 7) is as mixed as Akron itself. The segregated service areas range from one percent Black and 98 percent White (Convenient Food Mart) to 93 percent Black and six percent White (Bi Rite Market), while the most integrated service area is 47 percent Black and 50 percent White (Kelly Market Groceries).

Table 7
Racial Composition of Store Service Areas

Store Name	Service Area % White	Service Area % Black	Service Area % Other
Aldi	52	40	8
Asia Market	79	19	2
Baho Convenience Store	66	31	3
BiRite Market	6	93	1
Bob's Supermarket	82	18	0
Convenient Food Mart	98	1	1
Country Market	78	15	7
DB's Check Mart	18	81	1
Dairy Mart	72	26	2
Deli Mart	8	91	1
Delia Market	42	57	1
EZ Quick Stop	76	22	2
Empress Market	87	9	4
Family Market	85	11	4
Far-Less Food Market	50	41	9
Faris Market	96	3	1
Firestone Mini-Mart	20	80	0
Kelly Market Groceries	50	47	3
Lakeshore Carry-Out	36	61	3
Linda's Market	63	32	5
Little Mike's Market	82	15	3
Lucky's Deli & Carry-Out	75	22	3
Main Street Market	13	86	1
Mr. Pantry	79	19	2
Olives Food Store	84	11	5
Oriental Market	84	11	5
P & F Carry-Out	97	2	1
Reem's Market	23	77	0
Rocky's Market	13	86	1
Roush's Market	71	22	7
Smitty's Market	77	15	8
South Street Express	87	12	1
Star Market	87	9	4
Spice Corner	68	25	7
Tasty Carry-Out	67	32	1
United Asian Market	77	14	9
Wooster Market	10	89	1
Zip Mart	82	11	7

Source: US Census Bureau, 1990b

Ethnic food stores

Not all grocery stores in Akron are "basic American food" stores. In Akron there are a small number of Asian grocery stores that specialize in specific ethnic foods. In order to properly evaluate whether the dietary needs of Asians are being met, it is important to look at these stores.

An ethnic food store primarily sells food items that are distinctly non-traditional American, often catering to immigrants from specific geographic regions. The geographic mean center of the four Asian ethnic grocery stores in the study area (Table 8) falls .07 miles east of the 500s block of Spicer St. (just south of The University of Akron campus). The two stores farthest apart from each other (Oriental Market and Asia Market) are only two miles apart. These stores are all located in East-Central Akron and are in close proximity to The University of Akron.

Table 8
Ethnic Grocery Stores in Akron

Store Name	Address	Ethnicity	Percent of Service Area "Asian / Pacific Islander"
Asia Market	986 Brown St.	East Asian	1.1
Oriental Market	597 East Market St.	East Asian	3.7
Spice Corner	519 East Exchange St.	South Asian	3.2
United Asian Market	340 East South St.	East Asian	6.5

Source: US Census Bureau, 1990b

Despite what one may expect, there is not a significant correlation between the concentration of persons of Asian/Pacific Islander heritage and the location of ethnic grocery stores in Akron (Table 9). The degree of confidence

that can be placed on this test could be affected by the datedness of the Census information.

Table 9
Correlation of Asian/Pacific Islanders and Ethnic Grocery Stores

Pearson	Significance
.227	.085

Source: US Census Bureau, 1990b

Non-Geographic

Availability

The mean and median number of items available at the surveyed stores was 20 (Table 10). This indicates that the majority of stores had just less than half the items indicated by the USDA. The store with the highest availability was the Star Market having all food items, while the store with the least availability was the Oriental Grocery (a relatively new East Asian ethnic market) having only three recommended food items – which is understandable since it is a more specialized store. The stores of inner city Akron also had less than half of the available food items of the control store's 41 items (Fig. 7).

Food group availability

The survey food list is split into food groupings (fruits and vegetables: 15; breads, cereals, and grains: 9; milk and cheese: 4; meat and meat alternatives: 9; and fats, oils, and sugars: 6). The most available food group is the fats, oils, and sugars (74 percent), while the least available is the meats (36 percent). This is followed closely by the fruits and vegetables (37 percent) (Table 11). The

Table 10
Availability of Food Items

Rank	Food Item	Quantity	Percentage
1	Green beans	34	89
1	Granulated sugar	34	89
3	Tomato sauce	33	87
3	Noodles	33	87
3	Vegetable Oil	33	87
6	Bread	31	82
6	Flour	31	82
6	Whole milk	31	82
9	Eggs	30	79
9	Margarine	30	79
11	Tuna	28	74
11	Kidney beans	28	74
13	Orange juice	26	68
13	Macaroni	26	68
13	Rice	26	68
16	Peaches	25	66
17	Evaporated milk	24	63
17	Shortening	24	63
17	Salad dressing	24	63
20	Brown sugar	24	63
21	Hamburger buns	21	55
22	Corn flakes	17	45
23	Potatoes	14	37
23	Cheddar cheese	14	37
25	Onions	13	34
26	1% milk	12	32
27	Leaf lettuce	10	26
27	Bread crumbs	10	26
29	Apples	8	21
29	Green pepper	8	21
29	Peas	8	21
29	Ground turkey	8	21
29	Garbanzo beans	8	21
34	Bananas	7	18
34	Celery	7	18
36	Fish	6	16
37	Carrots	5	13
37	Turkey ham	5	13
39	Chicken	4	11
40	Ground beef	3	8
41	Bagels	2	5
42	Melons	1	3

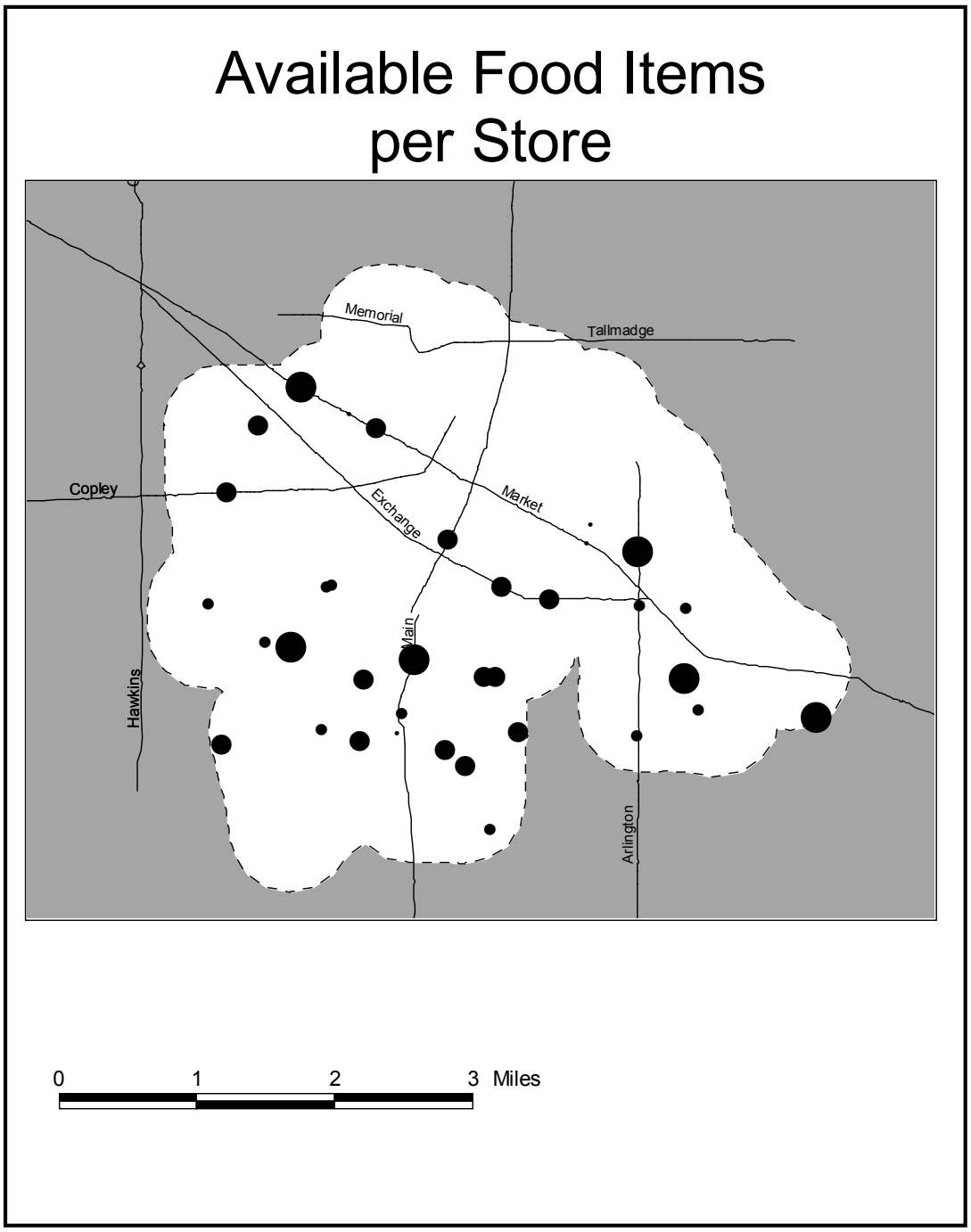

Figure 7. Available Food Items per Store

control store did much better with 100 percent of all food groups, except for missing one meat group item.

Due to an unfortunate oversight, one fresh fruit (orange) was missed during the entire survey period. All analysis has been done with this subtraction, thus the total items surveyed were 42, not 43. Yet, had the orange been included and since most stores did not stock oranges, it likely would have exacerbated the trends for most stores and the fruits and vegetables food group.

The situation in Akron stores is the opposite of an ideal nutritional situation. Perishability likely plays a factor in these deficits: meats, fruits, and vegetables usually have shortened-shelf lives and go bad more easily than do fats, oils, and sugars. This is supported by Curtis and McClellan (1995, 116).

Table 11
Availability of Food Groups

Food Groups	Total items in group	Accumulative foods found	Percentage available
Fruits and vegetables	14	198	37
Breads, cereals, and grains	9	199	58
Milk and cheese	4	81	53
Meat and meat alternatives	9	124	36
Fats, oils, and sugars	6	169	74
All food groups	42	772	48

Source: Hogbin, et al. (1999)

Cost

All food items were standardized to common units. In most cases, this unit was ounces. Those items not standardized by ounces were melons (halves), celery (stalks), lettuce (heads), bread (loaves), hamburger buns (buns), and eggs (eggs). Apples, green pepper, onions, and potatoes were split amongst weight (ounces) and quantity (count) items, because some were sold at

different measures. All of those food items counted on the basis of their quantity undoubtedly varied in weight, thus making a precise comparison in most cases impossible.

The mean price for each individual food item amongst all the stores was compared with the price from the control store. Also, the prices of a given store were contrasted with those of all other stores to see which stores were more affordable.

Only seven of the products that had standard units (38 did) were more inexpensive on average than the control (primarily produce and meats) and eight items had lower median prices than the control (Table 12). Often produce was not labeled with a price, so I had to ask the store manager for the price. A number of them told me that they haggled with customers or that they would deliberately undersell the item just to sell it. There is also the possibility that they told me a lower price when asked, just to make it seem as if their store was less expensive.

The items that are less expensive than the control store are some items that are typically less available in stores. These items numbered less than ten, indicating that these results should suggest a lower confidence of being truly less expensive. These items had the following counts: bananas (7), carrots (5), lettuce (10), bagels (2), bread crumbs (10), ground beef (4), chicken (5), and garbanzo beans (8).

Table 12
Inner-city Store Items Less Expensive Than Control Store

	Mean Items Less Expensive Than Control	Price Difference ($)	Median Items Less Expensive Than Control	Price Difference ($)
1	Bananas	0.16	Bananas	0.10
2	Carrots	0.57	Carrots	0.60
3	Celery	0.82	Lettuce	0.70
4	Lettuce	0.58	Bagels	0.20
5	Bagels	0.20	Bread crumbs	0.20
6	Ground beef[5]	0.31	Ground beef	0.28
7	Chicken	0.24	Chicken	0.41
8	--	--	Garbanzo beans	0.12

One explanation for the less expensive produce could be that some grocery owners/managers will stock produce items, even though they might not be in high-demand or may not make any profit on them, but perhaps stock them on principle. A number of store managers stated that they carry certain items that are in low demand simply because they believe that their store should have those items. Unfortunately, as a result of them often being smaller stores, they will sit longer on shelves and therefore the condition of the produce is often poorer than larger supermarkets. All standard unit food items and their prices are shown in Table 13.

Only 11 stores had an average cost less than the average, while 27 were greater than the average cost.[6] Four were between 150 percent to 200 percent average cost. This comparison was made by comparing each item's per unit price to the median price for that item for all stores (Fig. 8 shows the distribution of average food costs per store). The central core is the most expensive region

[5] Ground beef and chicken price differentials (for both mean and median) were assumed to be per pound, even though that was not the most prevalent size.
[6] Snow (2002) noted in February 2002 that Akron-area food prices rose 2.96 percent recently, the largest quarterly increase in more than a year. She indicates that this represents a national trend that will see food prices rise up to three percent in the coming year.

in the study area, with much of the periphery, especially in the east and part of the south being overall less expensive.

Table 13
Price Difference Between Stores Surveyed and Control

Food Item	Average unit size	Mean Cost ($)	Median Cost ($)	Control Cost ($)
Bananas	1 pound	0.43	0.49	0.59
Melons	1 half-melon	1.29	1.29	0.74
Carrots	2 pounds	1.21	1.18	1.78
Celery	1 stalk	1.21	1.34	1.29
Lettuce	1 head	1.21	1.09	1.79
Peaches	15.25 ounces	1.26	1.29	0.68
Tomato sauce	15 ounces	0.99	0.99	0.40
Orange juice	1 half-gallon	2.67	2.49	1.70
Green beans	14.5 ounces	1.08	0.89	0.63
Peas	1 pound	1.38	1.41	1.29
Bread crumbs	15 ounces	1.73	1.29	1.49
Bread	1 loaf	1.34	1.29	0.89
Hamburger buns	8 buns	1.51	1.79	0.89
Corn flakes	18 ounces	3.20	2.99	1.87
Flour	5 pounds	3.49	2.29	1.59
Macaroni	1 pound	1.20	1.29	0.89
Noodles	1 pound	1.15	1.22	0.66
Rice	1 pound	0.86	0.80	0.58
Evaporated milk	12 ounces	1.29	1.29	0.89
1% milk	1 gallon	2.64	2.79	2.49
Whole milk	1 gallon	2.88	2.89	2.49
Cheddar cheese	8 ounces	2.39	2.24	2.00
Tuna	6 ounces	0.99	0.99	0.69
Kidney beans	15.5 ounces	0.83	0.78	0.38
Garbanzo beans	15.5 ounces	1.10	0.84	0.96
Eggs	1 dozen	1.15	1.19	0.83
Margarine	1 pound	1.11	1.09	0.79
Shortening	3 pounds	4.20	3.09	2.27
Salad dressing	16 ounces	3.02	3.19	2.00
Vegetable oil	48 ounces	3.59	3.34	2.19
Brown sugar	1 pound	1.12	1.09	0.70
Granulated sugar	5 pounds	3.20	2.99	2.00

The only item that did not have a more frequent unit size to utilize was the bagels. Since only two stores had bagels, the average of the two sizes (21 oz and 22 oz) was used (21.5 oz). Also, the non-standard unit items (apples, green peppers, onions, and potatoes) had to be discounted.

Mean Price of Food Items per Store

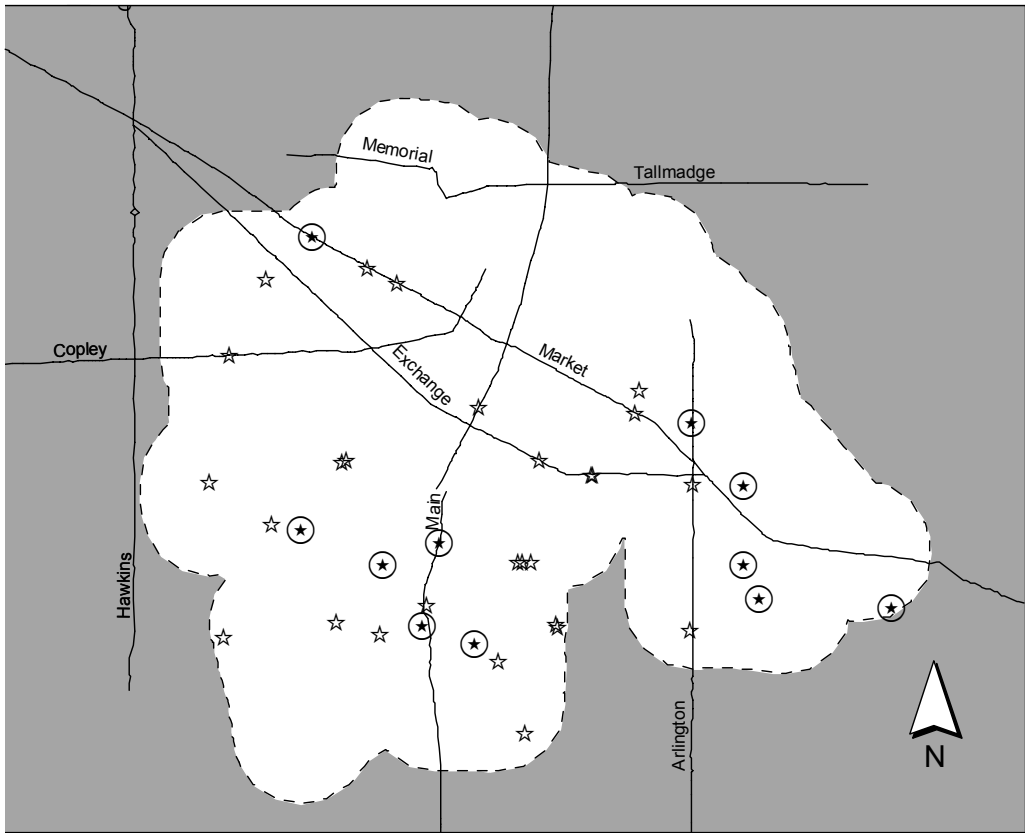

Figure 8. Mean Price of Food Items per Store

Acceptance of public assistance

Less than eight percent of the stores surveyed accepted WIC coupons, even though more than three-fourths accepted food stamps (Table 14). Only one in ten that did accept food stamps also took WIC (Fig. 9). When asked if WIC was accepted, four store managers said that they had recently applied for the program. One also said that it had been turned down for it, likely due to a lack of available items. Two also said that in the future they would apply or re-apply for the food stamp program. The control store accepted both food stamps and WIC.

Table 14
Acceptance of Public Assistance Income

Status	Count	Percentage of Total
Food Stamps: Accept	29	76
Food Stamps: Do not accept	9	24
WIC: Accept	3	8
WIC: Do not accept	35	92

Two of the pre-conditions for a store to be an approved WIC vendor are as follows (Ohio Department of Health, 2001b):

- Accept food stamps
- Carry all required food items

There was a significant correlation between the acceptance of WIC and the availability of items (Table 15). Both WIC *and* food stamps correlate with availability of food items when including the control store into the analysis (Table 16).

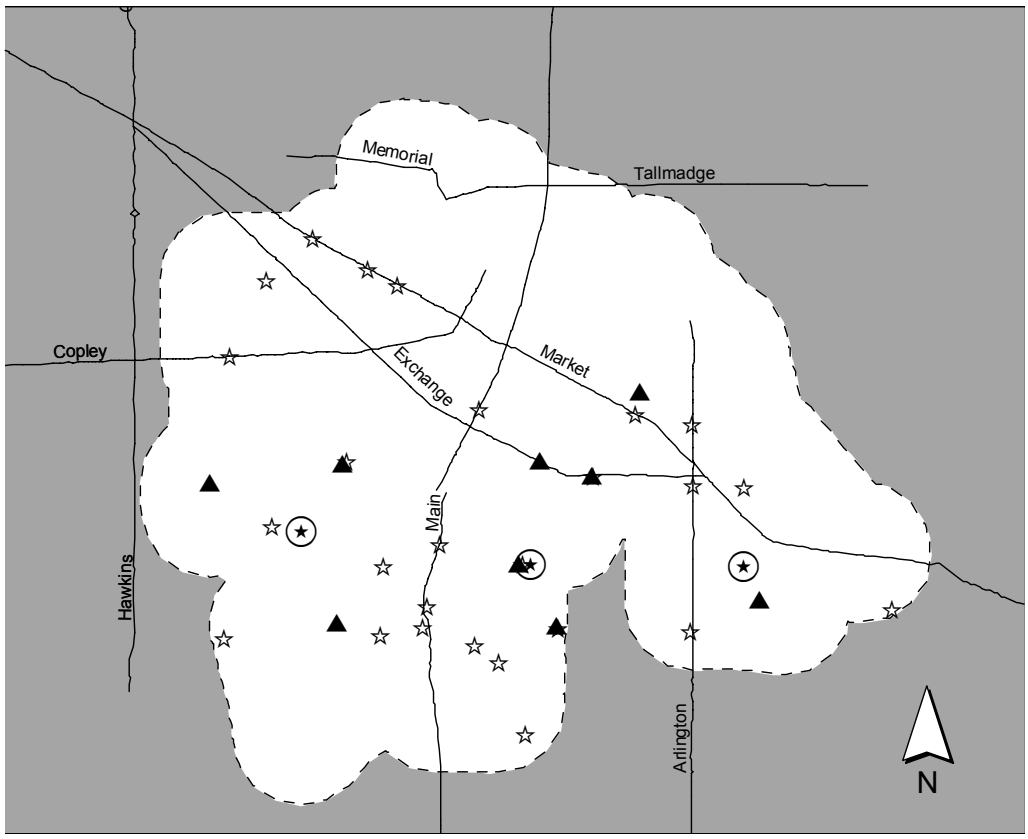

Figure 9. Acceptance of Public Assistance Income per Store: Food Stamps and Women, Infants, Children (WIC)

Table 15
Public Assistance Correlated with Item Availability

Variable	Significance	Pearson
Food stamps	.059	.258
WIC	.012	.368

Table 16
Public Assistance Correlated with Item Availability (Including Control Store)

Variable	Significance	Pearson
Food stamps	.047	.272
WIC	.001	.471

It could not be verified how many other stores may potentially be able to become WIC vendors based upon the availability of the food items. One of the items was omitted from the survey (peanut butter) because it was not on the USDA recommended list and four other items were surveyed in a way that does not clearly apply to WIC (Ohio Department of Health, 2001a). Specific types of milk, cheese, cold cereal, and beans were surveyed rather than any kind allowed by the WIC program.

Other

Store names

The stores surveyed used different naming conventions, such as “Carry-out” (four stores), “Market” (21 stores), and “Mart” (six stores). A very moderate hierarchy could be found in these store names and the availability of food items in them (Table 17). This phenomenon is a coincidence and not a planned

pattern since there are no legal requirements regarding store names for grocery store businesses.

The “Markets” had more items than both the “Marts” and “Carry-outs”, while the “Marts” were marginally better stocked than the “Carry-outs”. However, this was not a significantly correlated relationship and should not be interpreted as such. Ethnic grocery stores named “Markets”, which had far fewer items than average, significantly affected these results.

Table 17
Items Available Contrasted to Store Labels

Label	Count	Mean Number of Items	Median Number of Items
Carry-out	4	16.5	18
Market	21	20.7	21
Mart	6	19.7	18

Brands

Some food items were dominated by a majority brand throughout the city. These items include carrots (Look Mom!), peaches (Del Monte), bread (Wonder), corn flakes (Kelloggs), flour (Gold Medal), evaporated milk (Carnation), tuna (Starkist), and brown sugar (Domino). For the food items listed, more than half of the stores that carried that item were of the same brand name; for example, 25 stores had peaches, of which 15 (60 percent) were of the Del Monte brand. Other items were close to having a dominant brand, but fell short of having a majority.

An important reason that the control store had, on average, far lower prices than the others was due to its in-house or store brands. More than two-thirds of all surveyed items were of the brands “Best” or “Acme”.[7]

[7] For more on the issue of product brands, see Klein (2000).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Does the situation facing Akron's inner city equate to the FAO definition of food security? To revisit the entire definition again:

> "*[A] situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*" (FAO, 2001, Glossary).

Examining this definition, the study found many separate, yet interrelated components. These components must be appropriately addressed and be present in Akron in order for food security to exist. The components are explained below in Table 18. If the components are non-inferable by this study, they appear in *italics*.

Going through the components of the food security definition one by one illustrates whether or not they are fulfilled by inner city Akron's situation. The clause "all people" is not answerable by this study. The study does not consider all the people who live in Akron, nor does it consider them as truly active agents

in their food security, but ones who act with the understanding that all food comes from grocery stores.

Table 18
Food Security in Akron, Ohio

Language of FAO definition	Explained
All people	*Must include everyone, everywhere*
All the time	Be consistent and accessible at convenient times
Physical access	How far is the food away
Social access	How culturally acceptable is the method for obtaining the food
Economic access	Is the food affordable
Sufficient food	Is there enough food
Safe food	*Is it safe to consume*
Nutritious food	Does it have the nutrients the body needs, as per USDA recommendations
Fulfills food preferences	Is it the sort of food that is desired
Allows an active life	*Does it give proper energy*
Allows a healthy life	*Does it perpetuate good health*

Source: FAO, 2001, Glossary

Many food items were unreliably stocked, especially in the case of produce and meat, indicating that the “all the time” condition is not being met. The nature of many small stores leads to periods of inconsistency, thus depriving consumers of assured access.

There are many places that are un-served when considering a half-mile service area for stores—nearly 50 percent of the study area. Certain neighborhoods are un-served by grocery stores, especially in North Akron. The “physical access” component would still be unfulfilled even if a larger service area were delineated. Physical access also implies mobility, something that statistics on vehicle availability indicates is often lacking in poor neighborhoods.

A difficult to determine food security component is “social access”. It is addressed by how accessible food is in light of societal problems, such as poverty. The majority of stores accept food stamps, although it is debatable whether public assistance income is socially acceptable. An even greater

majority did *not* accept WIC coupons. Geographically, the more likely people in a service area are to use public assistance, the less likely the store was to accept food stamps.

"Economic access" is one of the most vital accessibility components to consumer decision-making after geography. Financial restrictions play a very important role in food choices and shopping decisions. Food stores in inner city Akron were overwhelmingly higher in cost when compared to the control store. Even though this disparity exists between the inner city and the suburbs, food items sold within the inner city itself cost less for those with smaller incomes.

There cannot be a supply of "sufficient food" when less than half of the average number of recommended food items are available. In addition to a lack of available food items, the most prevalent food groups available were also the least healthy (such as fats, oils, and sugars), while those most necessary for a healthy diet (meats, fruits, and vegetables) were those most consistently absent from stores. Thus, "nutritious food" is also lacking in much of inner city Akron.

Half the recommended items were not available and these are the foods that the USDA proposes as being a standard part of the "average American household" diet, which indicates that the component "fulfills food preferences" is also coming up short. For ethnic diets—specifically Asian diets—store locations were not located where Asian people lived, although they appear to be concentrated around The University of Akron (where many Asian students study).

Due to the inability of grocery stores to meet the preceding required components, food security is not present in Akron. Although some of these components are partially met by the food stores of inner city Akron, most are not. The application of the FAO definition to this study area could suggest that partial food security exists, but if all components are required for true food security, it is then apparent that food insecurity is actually the prevailing status of Akron's food stores, not merely partial food security.

There are many ways to approach solving the problems of food security and food access. Some of them are intended as permanent solutions, while others may be more temporary. They range from the short-term to the very long-term. Although highly diverse, all of the following could be considered as possible ways in which to improve Akron's food security and access.

Two different attitudes may be adopted for addressing the immediate disparities witnessed between the control store and inner city Akron stores. One attitude considers the importance of attracting supermarkets back into the inner-city areas, by lowering insurance costs, changing zoning, and actively courting chain stores with subsidies and tax-breaks.

The second attitude views smaller stores to be important to the vitality of communities by merit of their local focus, tendency to keep profits local, personal attention, and their function as a "community anchor".[8] This second approach advocates slowing and stopping supermarket mergers, breaking up city-wide monopolies, making WIC requirements more adaptable to smaller-scale stores,

[8] Unofficial conversations and qualitative observations from the grocery store surveys tended to support this thesis.

involving stores in community economic development programs, and creating municipal policy supporting a non-chain-based food system. At a more systemic and local level, two of the best ways to improve the plight of inner city neighborhoods would be to stop capital flight to the suburbs and raise the standard of living of everyone in Akron; however, this is easier said that done and would be a lofty goal even for those not concerned with food security.

Food security may be improved by encouraging community gardening projects, community supported agriculture (CSAs), and the creation of "food empowerment zones"—although none of these directly involve grocery stores. Large scale, urban agriculture is highly-praised and encouraged in the sustainable development community, although some of the best examples in "industrialized countries" are also in authoritarian socialist states, such as China and Cuba (Altieri, et al., 1999; Howe and Wheeler, 1999).

Finally, social welfare should not be examined in a vacuum, devoid of issues like autonomy, justice, and local-global scale (Smith, 1973; Powell and Boyne, 2001). True democratic control should be extended over food systems through the mechanisms of sustainable agriculture legislation, electing progressive thinkers to important decision making bodies, organizing local food policy councils, and campaigning against corporate dominated food systems (Henson, 2001; Pothukuchi and Kaufman, 1999).

REFERENCES

Altieri, M. A., Companioni, N., Canizares, K., Murphy, C., Rosset, P., Bourque, M., & Nicholls, C. I. (1999). The greening of the "barrios": Urban agriculture for food security in Cuba. Agriculture and Human Values, 16 (2), 131-140.

American Antitrust Institute (1999). American Antitrust Institute warns FTC of dangers in supermarket mergers, urges careful scrutiny of Ahold acquisition in Northeast. http://www.antitrustinstitute.org/recent/32.cfm

Anderson, M. D. & Cook, J. T. (1999). Community food security: Practice in need of theory? Agriculture and Human Values, 16 (2), 141-150.

Andrews, M., Nord, M., Bickel, G., Carlson, S. (1999). Household food security in the United States, 1999. Economic Research Service / USDA. http://www.ers.usda.gov/publications/FANRR8/fanrr8tx.pdf

Applebaum, W. (1968). Guide to store location research: With emphasis on super markets. Reading, Massachusetts: Addison-Wesley.

Barboza, D. (2000, December 26). Rampant obesity, a debilitating reality for the urban poor. New York Times, p. F5.

Berry, B. J. L. & Harris, C. D. (1970). Walter Christaller: An appreciation. Geographical Review, 60 (1), 116-119.

Boles, J. K. (1986). Urban equality: Definitions and demands. In Janet K. Boles (ed.), The egalitarian city: Issues of rights, distribution, access, and power (pp. 3-14). NYC: Praeger.

Carlson, S. J., Andrews, M. S., & Bickel, G. W. (1999). Measuring food insecurity and hunger in the United States: Development of a national benchmark measure and prevalence estimates. Journal of Nutrition, 129 (2), 510s-516s.

Cook, J. T. & Brown, J. L. (1996). Children's rights to adequate nutritious food in the two Americas. Food Policy. 21 (1), 11-16.

Cotterill, R. W. & Franklin, A. W. (1995). The urban grocery store gap. University of Connecticut: Food Marketing Policy Center, No. 8.

Curtis, K. A. & McClellan, S. (1995). Falling through the safety net: Poverty, food assistance and shopping constraints in an American city. Urban Anthropology and Studies of Cultural Systems and World Economic Development, 24 (1-2), 93-135.

Diouf, J. (n.d.) The right to food. FAO Director-General statement. http://www.fao.org/DG/DGfood-e.htm

Dowler, E. (1999). Mapping access to healthy food in deprived areas: A pilot study. London School of Hygiene & Tropical Medicine and Institute of Education.

Economic Research Service, US Department of Agriculture (2000). Questions & answers about household food security in the United States, 1999. http://www.ers.usda.gov/publications/FANRR8/qa.htm

Etheridge, M. (1999, September 12). Akron, Ohio-area chain survives grocery industry's consolidations. Akron Beacon Journal.

Food and Agriculture Organization (2001). The state of food insecurity in the world 2001. http://www.fao.org/docrep/003/y1500e/y1500e00.htm

Franklin, A. W. (2001). The impact of Wal-Mart Supercenters on supermarket concentration in U.S. metropolitan areas. Agribusiness, 17 (1), 105-114.

Frongillo, E. A. (1999). Validation of measures of food insecurity and hunger. Journal of Nutrition, 129 (2), 506s-509s.

Henson, D. (2001). Asserting democratic control of food and agriculture. By What Authority, 4 (1), 6-8.

Hogbin, M., Davis, C, & Escobar, A. (1999). Preparing nutritious meals as minimal cost, CNPP-7B, http://www.usda.gov/cnpp/FoodPlans/TFP99/food$pdf.PDF

Howe, J. & Wheeler, P. (1999). Urban food growing: The experience of two UK cities. Sustainable Development, 7 (1), 13-24.

Janoff, B. (1999). Urban renewal. Progressive Grocer, 78 (10), October, 22-30.

Keh, H. T. & Park, S. Y. (1997). To market, to market: The changing face of grocery retailing. Long Range Planning, 30 (6), 836-846.

Klein, B. (1998). Could there be hunger in America?. Family Economics and Nutrition Review, 11 (4), 52-54. http://www.usda.gov/cnpp/FENR/V11N4/fenrv11n4p52.PDF

Klein, N. (2000). No logo: Taking aim at the brand bullies. New York: Picador.

Kaufman, P. R. (1999). Rural poor have less access to supermarkets, large grocery stores. Rural Development Perspectives. 13 (3), 19-26.

Klesges, L., Pahor, M., Shorr, R. I., Wan, J. Y., Williamson, J. D., Guralnik, J. M. (2001) Financial difficulty in acquiring food among elderly disabled women: Results from the women's health and aging study. American Journal of Public Health. 91 (1), 68-75.

Koralek, R. D. (1996, November). Conference on access to food: Report of the proceedings. http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/961101.txt

Lavin, M. (2000). Problems and opportunities of retailing in the U.S. 'inner city'. Journal of Retailing and Consumer Services, 7 (1), 47-57.

Leidenfrost, N. B. (1993). Definitions concerned with food security, hunger, undernutrition, and poverty. Report, USDA Extension Service, Washington, DC. http://www.brown.edu/Departments/World_Hunger_Program/hungerweb/intro/basic_definitions.html

Mackinnon, J. (2001, August 25). East Akron to get long-awaited grocer. Akron Beacon Journal, pp. A1 & A8.

Michman, R. D. & Mazze, E. M. (1998). The food industry wars: Marketing triumphs and blunders. Westport, CT: Quorum.

New Policy Institute (2000). Food access - whose responsibility? http://www.npi.org.uk/Food%20Access.htm

Nitzke, S., Phillips, B. (1998) Nutrition for family living. Department of Nutritional Sciences. http://www.uwex.edu/ces/wnep/p3/mmpdfs/9803.pdf

Nord, M., Jemison, K., & Bickel, G. (1999). Prevalence of food insecurity and hunger by state, 1996-1998. Food and Rural Economics Division, Economic Research Service, USDA. Food Assistance and Nutrition Research Report No. 2. http://www.ers.usda.gov/publications/fanrr2/fanrr2.pdf

Ohio Department of Health (2001a). Ohio WIC Program facts. http://www.odh.state.oh.us/ODHPrograms/WICN/wicfacts.PDF

Ohio Department of Health (2001b). Ohio WIC vendor authorization: A vendor's role in the Ohio WIC Program. http://www.odh.state.oh.us/ODHPrograms/WICN/wicvend.PDF

Ohio Hunger Task Force (OHTF) (2000). Hunger in our own backyard 2000: A profile of federal nutrition programs in each of Ohio's 88 counties. http://www.ohtf.org/Hungerinourownbackyard.htm

Ohio Hunger Task Force (OHTF) (2001). Hunger in Ohio: The state of the state. http://www.ohtf.org/OHTF%20Report%202001.pdf

O'Kelly, M. (2001). Retail market share and saturation. Journal of Retailing and Consumer Services. 8 (1), 37-45.

Poppendieck, J. (1997). The USA: hunger in the land of plenty. In Graham Riches (ed.), First World hunger: Food security and welfare politics (pp. 134-164). New York: St. Martin's Press.

Pothuluchi, K. & Kaufman, J.L. (1999). Placing the food system on the urban agenda: the role of municipal institutions in food systems planning. Agriculture and Human Values, 16 (2), 213-224.

Powell, M. & Boyne, G. (2001). The spatial strategy of equality and the spatial division of welfare. Social Policy & Administration, 35 (2), 181-194.

Pritchard, W. (2000). Beyond the modern supermarket: Geographical approaches to the analysis of contemporary Australian retail restructuring. Australian Geographical Studies, 38 (2), 204-218.

Seiders, K. & Tigert, D. J. (2000). The impact of supercenter on traditional food retailers in four markets. International Journal of Retail & Distribution Management, 28 (4/5), 181-193.

Sexton, R. J. & Zhang, M. (2001). An assessment of the impact of food industry market power on U.S. consumers. Agribusiness, 17 (1), 59-79.

Smith, D. M. (1973). The geography of social well-begin in the United States: An introduction to territorial social indicators. New York: McGraw-Hill.

Snow, J. (2002, February 27). Grocery prices up almost 3 percent in greater Akron. Akron Beacon-Journal.

Staatz, J. M. (1996). Comments on 'improving food access to poor and vulnerable groups'. Department of Agricultural Economics, Michigan State University.

Sustainable Food Center (2000). Access denied. http://www.main.org/sfc/access_denied/

Toronto Food Policy Council (TFPC) (1996). Food retail access and food security for Toronto's low-income citizens. http://www.city.toronto.on.ca/health/tfpc_food.pdf

Turcsik, R. (2001). Going, going, gone. Progressive Grocer, 80 (1), 20-26.

United Nations (1966). International covenant on economic, social, and cultural rights. General Assembly resolution 2200A (XXI), December 16. http://www.unhchr.ch/html/menu3/b/a_cescr.htm

US Census Bureau (1990a). Income and poverty status in 1989: 1990, geographic area: Akron city, Ohio. American FactFinder. http://factfinder.census.gov

US Census Bureau (1990b). Summary tape file 3.

US Census Bureau (1992). 1992 Census of retail trade, definitions of industries. http://www.census.gov/epcd/www/rc92sics.html

Van Esterik, P. (1999). Right to food; right to feed; right to be fed: The intersection of women's rights and the right to food. Agriculture and Human Values, 16 (2), 225-232.

Weinstein, S. (2000). Too little, too late? Progressive Grocer, 79 (5), May, 113-122.

World Bank (1986). Poverty and hunger: Issues and options for food security in developing countries. World Bank Policy Study. Washington, DC: World Bank.

World Bank (n.d.). Food and nutrition policy: Nuts and bolts.

APPENDICES

APPENDIX 1

LETTER TO STORES

Dear Store Manager,

I am a graduate student at The University of Akron in the Geography and Planning Department. I am doing my thesis research on food issues in the City of Akron. I will be surveying grocery stores and their available items through out the city.

If you have any subsequent questions regarding this research or would like to contribute any additional information, please let me know by calling (330) 972-7620 (office) or (330) 253-5847 (home) or by e-mail: dw2@uakron.edu

Thank you!

Sincerely,
Dana Williams

APPENDIX 2

SURVEYED FOOD STORES

Name	Date visited	Address
Acme #1 (control)	1/10/02	1835 W. Market St
Aldi	12/11/01	772 S. Main St
Asia Market	12/16/01	986 Brown St
Baho Convenience Store	12/8/01	460 W. Market St
BiRite Market	12/31/01	1304 Diagonal St
Bob's Supermarket	12/14/01	1135 Laird St
Convenient Food Mart	12/16/01	199 Massillon Rd
Country Market	1/4/02	380 E. South St
Dairy Mart	12/8/01	587 W. Market St
DB's Check Mart	12/31/01	1206 Manchester Rd
Deli Mart	1/2/02	504 Wooster Ave
Delia Market	12/11/01	964 Delia Ave
Empress Market	12/12/01	518 E. Exchange St
EZ Quick Stop	1/7/02	1164 Grant St
Faris Market	1/8/02	192 W. South St
Far-Less Food Market	12/13/01	854 E. Buchtel Ave
Firestone Mini-Mart	1/3/02	1459 Aster Ave
Kelly Market Groceries	1/2/02	247 Kelly Ave
Lakeshore Carryout	1/8/02	1143 Lakeshore Blvd
Linda's Market	1/3/02	1034 Lovers Ln
Little Mike's Market	1/7/02	187 Ira Ave
Lucky's Deli & Carryout	12/13/01	77 S. Arlington St
Main Street Market	12/8/01	263-1 S. Main St
Mr. Pantry	12/12/01	950 Copley Rd
Olives Food Store	12/16/01	978 Brown St
Oriental Market	12/14/01	597 E. Market St
P & F Carryout	1/10/02	599 Upson St
Reem's Market	1/14/02	1825 13th St SW
Rocky's Market	1/2/02	1281 5th Ave
Roush's Market	12/31/01	554 W. Thorton St
Smitty's Market	1/8/02	3 Ira Ave
South Street Express	1/7/02	324 E. South St
Spice Corner	12/12/01	519 E. Exchange St
Star Market	12/6/01	829 W. Market St
Tasty Carry-out	1/7/02	22 W. Long St
The Family Market	1/7/02	1243 Andrus St
United Asian Market	1/4/02	340 E. South St
Wooster Market	12/16/01	459 Wooster Ave
Zip Mart	12/8/01	300 E. Exchange St

APPENDIX 3

SURVEY FORM

Item	Price ($)	Quantity / size	Brand / kind	Unit price	Comments
Apples					
Bananas					
Melons					
Carrots					
Celery					
Green pepper					
Lettuce, leaf					
Onions					
Potatoes					
Peaches					
Tomato Sauce					
Orange Juice					
Green beans					
Peas					
Bagels					
Bread crumbs					
Bread, white					
Hamburger buns					
Corn flakes					
Flour					
Macaroni					
Noodles					
Rice					
Evaporated milk					
1% milk					
Whole milk					
Cheddar cheese					
Ground beef					
Chicken					
Fish					
Tuna (water pack)					
Ground turkey					
Turkey ham					
Kidney beans					
Garbanzo beans					
Eggs, large					
Margarine					
Shortening					
Salad-dressing					
Vegetable oil					
Brown sugar					
Sugar, granulated					

SURVEY FORM – CONTINUED

Store name: _____ Date visited: _____

Address: _____

Hours of operation: _____

Does it accept: WIC: Y / N Food stamps: Y / N

Sale price of items:

Approximate size of store: _____

Comments: