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The Geography of Food Cooperatives in the United States

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Peer Review

This work has undergone a double-blind review by a minimum of two faculty members from institutions of higher learning from around the world. The faculty reviewers have expertise in disciplines closely related to those represented by this work. If possible, the work was also reviewed by undergraduates in collaboration with the faculty reviewers.

Abstract

For our society to become sustainably viable in the future, the ways in which we obtain our food and the methods used to create that food will be very important. One of the most environmentally friendly methods of food obtainment is membership in a food cooperative. This research delves into the basics of food cooperatives, highlights similar studies of other sustainability indicators, and examines the geographic distribution of food co-ops across the United States.

Keywords

geography, food cooperative, co-op, united states, sustainability, maps

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INTRODUCTION

Globalization and industrial agriculture have combined to change how most of the world views the food they eat. Although many people don't know where their food is coming from, most of the world enjoys a level of food security that has never been seen before. Meat, produce and other goods can be packaged and shipped around the world for consumption. In many ways, this system has unparalleled convenience and has led to groceries being cheaper than ever; but at what cost?

As human population numbers continue to rise and developing countries begin to mimic patterns of consumption that we have seen in developed countries for years, increased stress is being put on the Earth as a living system. This is particularly true in the food sector. For example, concentrated animal feeding operations (CAFOs) produce between 1.2 and 1.37 billion tons of waste per year in the United States, none of which is subject to sewage treatment the way that human waste is (NALBOH 2010). Emissions resulting from the decay of manure and digestive processes of livestock have a negative impact on ambient air quality in areas nearby to CAFOs and are responsible for 18% of greenhouse gas emissions globally and over 7% in the United States (NALBOH 2010). Nonpoint sources from the agricultural sector is the leading cause of pollution to surveyed rivers and lakes, second largest source of deterioration to wetland areas, and plays a major role in contamination of estuaries and wetlands (EPA 2005). Another concern when examining industrial agriculture is the use of pesticides. Humans can be exposed to pesticides used in agriculture by consuming food that has pesticide residue, through contaminated drinking water, and through the air we breathe (Horrigan et al. 2002).

Pesticides have also been correlated to decline of many bird species and valuable insect populations (Horrigan et al. 2002). These reasons, as well as a plethora of other issues, have led many people to question the sustainability of our current, primarily industrial agricultural system.

As our society transitions into an era of sustainability and eco-conscious food consumption, it will be of the utmost importance that we are aware of and close to the sources of our food. Many people have had this idea in their mind for years as they shop at alternative food stores and local farmers markets for free range meat and organic produce. Perhaps the most sustainable method of obtaining the food we purchase, however, is belonging to a food cooperative. In the most general terms, a food cooperative is a democratic food distribution outlet in which all decisions made about the production and sources of food are made by the members of the cooperative (Knupfer 2013). In most food cooperatives, sustainability is a priority and begins with the farms that grow the food to be distributed. Sustainable agricultural practices that are favored among many food cooperatives include crop rotation, no or low-till farming, crop diversity, rotational grazing of livestock, and integrated pest management (using biologic methods and least toxic chemical to control pests) (Horrigan et al. 2002). Of produce sold at food cooperatives, 82 percent is organic, compared to just 12 at conventional grocery stores (National Cooperative Grocer Association 2013). Although food cooperatives have been around for a long time, they are beginning to see a surge in popularity and membership amongst groups of people who are dedicated to lessening the environmental impact and increasing the nutritional value of the food they consume.

Although rather limited, there has been some literature devoted to food

cooperatives and related topics in recent years. *Food Co-ops in America* (Knupfer 2013) delves into the economic and democratic ideals that allow co-ops to be viable alternatives to consumers who wish to be active decision makers in the impact of the food they come. Hughner et al. (2007) examined patterns of organic food consumption and identified themes for the rationale used in purchasing these products. Brown (2002) did a comprehensive study in which she inventoried and examined the growth of farmers markets from 1940 until 2000. However, the literature devoted solely to food cooperatives is found to be scant, particularly from a geographic perspective.

Research on the geographic distribution of food cooperatives is important for several reasons. It allows for a wide spread examination of patterns at the national scale and also gives us valuable information about local and regional geography. Research on the geography of food cooperatives in the United States is also important simply because it has never been done before. Once this information is accessible, it will be possible to compare the findings with the distribution of other variables and draw even larger conclusions about trends related to sustainability and environmental awareness in various regions of the United States.

The primary goal of this research is to identify which areas of the United States have high densities of food cooperatives and which areas do not. Food cooperatives indicate a high level of conscious consumerism and have the ability to be a step forward along the path towards sustainability. With that in mind, food cooperatives could be used as one indicator of areas with heightened dedication towards sustainability, especially with regard to food.

LITERATURE REVIEW

Food cooperatives are food distributors or outlets collectively owned by members who combine money and resources and also vote democratically about decisions that are made relating to business policies, food suppliers, and products (Knupfer 2013). Besides food, there are several other types of cooperatives such as health care co-ops, housing co-ops, and financial co-ops (credit unions) (NFCA 2013). There is a broad spectrum of food cooperatives, but they are all linked by the ideas of democratic decision making, environmental and social responsibility, and impartiality of members (National Cooperative Grocer Association 2013). In most cases, the major objective is to make organic and natural foods more affordable for members of the cooperative.

People are most often drawn to join or start a food cooperative because of a shared desire for goods that are otherwise unavailable to them or because it allows them to have an influence on the specifics of how and where the food was produced. In a traditional co-op, each member gets one vote, and votes are used to select a board of directors that oversee the cooperative and hire management (Knupfer 2013). To become a member, most cooperatives require an initiation fee and then also an investment of a set amount of money to acquire a share. Members must vote on a variety of issues such as whether or not to sell meat, where to get the produce, pricing, remodeling issues, and any other decisions that will affect the cooperative.

The two major types of food cooperatives are private and open. In a private co-op, only members who have paid their dues are allowed to shop at the store (NFCA 2013). In many cases, members of private cooperatives also must occasionally be a part of a work crew to aid in the

maintenance and running of the cooperative (NFCA 2013). On the other hand, some co-ops are open to the general public, while only members receive exclusive discounts. However, the prices for comparable items at cooperatives are often lower than they would be at a traditional grocery store to encourage people to shop there, even if they do not become members.

RESEARCH QUESTION

As knowledge of socially responsible and sustainable food consumption has risen, community food cooperatives have risen as well (Knupfer 2013). This research aims to examine the spatial distribution of these cooperatives, identify areas with high (and low) density of food co-ops, and compare this variable against the geography of other broad and potential indicators of sustainability.

DATA AND METHODOLOGY

Data used in this research was received via email correspondence with the Executive Director of the Food Co-op Initiative, Stuart Reid (2013). The data included a list of the zip codes for 358 food cooperatives across the United States. It is important to note that this list is not exhaustive; it does not include every food co-op in the country (no such comprehensive list exists at this time).

The list of food co-ops was converted to a geodatabase and plotted on a map of the United States (Figure 1).

Besides plotting each cooperative as a point, location quotients were used to normalize the data (Figure 2). Location quotient values are useful for creating quantitative data based on concentration of a variable (food cooperatives) in an areal unit compared to the number of another variable

(population) (Wikle 1995). The location quotient is derived using the following equation: $LQ = (FC_s / POP_s) / (FC_{us} / POP_{us})$, where FC stands for the number of food cooperatives, POP stands for population, and the subscripts (s) and (us) stand for State and United States, respectively. The data was then manually split to best accentuate trends and breaks in the location quotient values on the map.

ANALYSIS

Research of other possible sustainability indicators within the United States reveals some general consistency. Wikle (1995) used data regarding membership in environmental groups at the county level and location quotients to analyze areas where this type of membership was most common. This study concluded that areas of the North, West, and Rocky Mountains had higher concentrations of environmental membership than the South or Midwest regions (Wikle 1995). This study also identified a link between high levels of environmental group membership and variables such as higher education, higher incomes, older populations and higher participation in recreational activity (Wikle 1995).

Cidel (2009) examined the geographic distribution of the recent rapid growth of LEED certified green buildings and professionals in the United States. Results of this study found that the Pacific Northwest scored very well, the majority of the West and Northeast scored well in general, and the South and Midwest scored moderately to low (Cidel 2009). This study also found a correlation between educational attainment, income, and percentage of jobs in the service sector and increased amounts of LEED certified green buildings (Cidel 2009).



Figure 1. Location of Food Cooperatives within the United States (created by author).

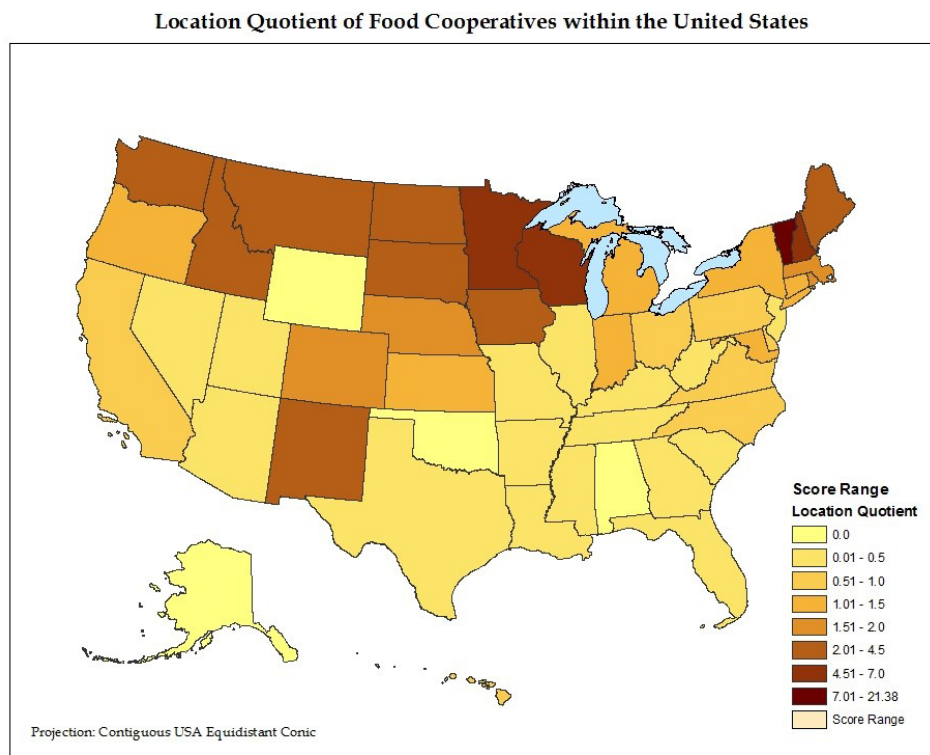


Figure 2. Location Quotients for Food Cooperatives in the United States (created by author)

Ralls (2013) researched the geography of land trusts within the United States and found high concentrations (using location quotients) of land trusts in the Rocky Mountain states, California, and parts of New England (in particular Maine, Massachusetts, and Connecticut). The Midwest and South were on the lower end of the spectrum in this study as well (Ralls 2013). This research also found strong correlations between socioeconomic variables (including income, educational attainment, percentage of population age 65 and older, etc.) and higher amounts of land trusts per population (Ralls 2013).

The area with the highest concentrations of food cooperatives in this study was found to be the North, generally (Figures 1 and 2). Northern New England (Vermont, New Hampshire, and Maine) had especially high levels of co-ops per population. At over 21, Vermont had by far the highest location quotient value (no other state had a value higher than seven; Figure 2). The upper Midwestern states, particularly Minnesota and Wisconsin, had high concentrations of community food cooperatives. A particular nucleus of co-ops seems to be centered around Minneapolis (Figure 1). Not surprisingly, the Pacific Northwest also contained a high number of cooperatives.

California was an interesting case because the northern portion of the state contained a much higher proportion of co-ops than the Southern portion of the state. This is also the case with LEED certified green buildings (Cidel 2009). Another interesting case is Wyoming, which is almost surrounded by states with relatively high LQ values (with the exception of Utah) but is one of only four states that had no food cooperatives (along with Alaska, Alabama, and Oklahoma).

The Mid-Atlantic states were moderate to low in the number of co-ops

they contained. Pennsylvania and Delaware simply had very few cooperatives (Figure 1), while New Jersey, Maryland, and New York had rather high numbers of food cooperatives but were on the lower end of the spectrum for the location quotient because they have large populations (Figure 2).

As a region, the Southeastern United States had very low values. Alabama was one of the four states that had no co-ops and there were several states around it that had two or fewer cooperatives (Mississippi, Louisiana, Missouri, etc.). The southern portion of the Midwest also had few food co-ops per population, especially in states such as Illinois, Arkansas, and Oklahoma.

CO CONCLUSIONS

Numbers of food cooperatives are increasing but not necessarily in a uniform fashion across the United States. Broadly speaking, the northern section of the United States seems to have the highest number of co-ops per population, particularly in the New England states (Vermont had the highest location quotient value by far) and in the Northern Midwestern states (particularly Minnesota and Wisconsin). At the other end of the spectrum, the Southeast and majority of the Midwest had low densities of food cooperatives.

There is a wide variety of further studies that could be done on the geography of food cooperatives in the United States. First, it would be beneficial to create a registry and list of all cooperatives in the United States. This could then be used for more in-depth geographical analysis, including comprehensive correlation studies between food cooperatives and socioeconomic variables such as educational attainment, average age, income, political affiliation, and so on. Second, it would be

valuable to understand the practices and interrelationships within and between and between food cooperatives, such as standardized practices, variations in membership, and operational differences. A survey or even census of food cooperatives and their respective activities would be useful for future research.

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