



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**CONSUMER PREFERENCES AND ATTITUDES TOWARDS PUBLIC MARKETS IN  
BIRMINGHAM, ALABAMA**

Michael Mukiibi, Alabama A&M University  
James O. Bukenya, Alabama A&M University  
Joseph J. Molnar, Auburn University  
Arthur T. Siaway, Tuskegee University  
L. Rigdon, Auburn University

*Selected Paper prepared for presentation at the  
Southern Agricultural Economics Association's Annual Meetings  
Orlando, Florida, February 5-8, 2006*

---

Address: Department of Agribusiness, P.O. Box 1042 Normal AL, 35762.

*All rights reserved. Reader may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

## CONSUMER PURCHASING BEHAVIORS AND ATTITUDES TOWARD SHOPPING AT PUBLIC MARKETS IN ALABAMA

### Abstract

The purpose of this study was to obtain information that could help farmers increase the profitability of their operations and improve the likelihood that they would continue farming. The specific objective was to empirically evaluate which socio-demographic characteristics and purchasing behaviors encourage consumers to patronize farmers' markets, in general and public markets, in particular. Data was drawn from telephone survey responses from 502 potential food shoppers in Alabama. Logit model results point to several factors that seem to be strongly correlated with consumer purchasing behaviors and attitudes toward shopping at public markets, including income, education, age of household head, household size, price and quality of produce.

## Introduction

In the past, farmers' markets were the usual way of buying and selling rural produce (Brown, 2002). With the advent of supermarkets, farmers' markets all but disappeared in many countries. However, in countries such as France and Italy, which place a high priority on food provenance and regional specialization, farmers' markets continued without a break, partly due to the presence of mechanisms in these countries to identify and promote locally grown foods (Erllich, Ruth, and Wahlqvist, 2005). In the U.S, farmers' markets first started to reappear in the 1970s from where they have spread to other nations such as Canada, Britain, Australia and New Zealand. These have been called "new generation" farmers' markets (Coster, 2004); offering a shopping environment that contrasts with the air-conditioned uniformity of supermarkets. The most popular of these "new generation" farmers' markets is the *public markets*<sup>1</sup>.

Since their reappearance in the 1970s, farmers' markets in general, and public markets in particular, have continued to grow across the United States (Wood, 2006; Project for Public Spaces, 2006), increasing by 79 percent since 1994 to more than 3,100 in 2002 (Kremen, Greene, and Hanson, 2004). Their steady growth and popularity has been attributed to several features commonly sought

---

<sup>1</sup> Public Markets are different from the traditional farmers' market in that, they operate on a daily basis and have a permanent in-door site. They offer a wide selection of locally produced farm-fresh produce, various specialty foods, craft and art shops, entertainment activities, and special events (Project for Public Spaces, 2006). The permanent in-door site not only serves as a center of local community life and culture, but also become a tourist "must-see" attraction. Some of the better known public markets in North America include the Pike Place Market in Seattle, the Granville Island Public Market in Vancouver, the Los Angeles' Farmers Market at the corner of Third Street and Fairfax Avenue, and the Faneuil Hall Market in Boston.

by customers attending the markets. Such features include freshness, high quality, fair pricing, pleasant social interaction with farmers and market shoppers, and locally grown foods (Lockeretz, 1987; Hughes and Mattson, 1992; Brown, 2002).

Despite their continued growth and popularity however, there have been few structured studies of consumer behaviors and attitudes toward shopping at farmers' markets (Govindasamy and Nayga, 1996; Govindasamy, Zurbruggen, Italia, et al., 1998; Fisher, 1999). Being familiar with consumers' motivation for shopping at farmers' markets is important in order to determine how these contemporary markets might function to meet consumers' needs. Thus, the objective of this study was to empirically evaluate which socio-demographic characteristics and purchasing behaviors encourage consumers to patronize farmers' markets, in general and public markets, in particular. The study draws on data from a broader feasibility study of farmers' markets in Alabama commissioned by the Alabama Farmers' Market Authority.

The rest of this article is organized as follows. The next section provides a short summary of literature review. This is followed by section 3, which describes the survey that produced the data that were used in this research. Sections 4 and 5 describe the variables used to measure behavior, attitudes and other variables and model specification, and section 6 presents and discusses the results. Finally, section 7 provides a brief summary and conclusions.

## Literature Review

Following the passage of Public Law 94-463 (PL 94-463), the Farmer-to-Consumer Direct Marketing Act of 1976 (Brown, 2001), farmers' markets have been growing in number and popularity, providing valuable opportunities for thousands of full- and part-time farmers (Hinrich, 2001; Payne, 2002; Kremen, Greene, and Hanson, 2004). Various reasons for their continued growth have been advanced in the literature (Stephenson and Lev, 1998; Hughes and Mattson, 1992; Govindasamy and Nayga, 1996; Govindasamy, Zurbriggen, Italia, et al., 1998; Fisher, 1999; Fitzgerald, 2004) ranging from health conscious consumers purchasing more fresh fruits and vegetables (Hughes and Mattson, 1992) to food safety concerns, by foods brought in from distant parts of the country or from overseas (Fitzgerald, 2004).

Previous studies concur that the growth in the number of farmers' markets, in farmers using the markets, and in customers using the markets indicates that farmers' markets are important to farmers, customers, and the communities in which the markets operate (Payne, 2002). Among consumer studies, surveys of farmers' market customers across the nation consistently portray them as above average in income, education, and age (Adrian, 1982; Blackbum and Jack, 1983; Buitenhuis, Kezis and Kerr, 1983; Estes, 1985). As noted by Hughes and Mattson (1992), this may be explained partially by a finding by Buitenhuis, Kezis and Kerr (1983), who state that "most notably, lower income consumers are more concerned with the price of produce, while

those in high income brackets are more concerned with quality factors when purchasing produce.” Indeed, food quality is the primary reason given by farmers’ market customers for shopping at the markets followed by lower prices, which may be linked to the high percentage of retired patrons, many of whom live on fixed incomes (Hughes and Mattson, 1992).

In previous work, Sommer, Wing and Aitkens (1980) looked at farmers’ markets in Northern California. In a survey of nearly 358 items over the course of several months, they determined that prices were lower by 37 percent for vegetables and 39 percent for fruits. Their article also rehashes the result of divers other studies, mostly from the East Coast, which indicate savings ranging from 8 percent to 50 percent. They point out, however, that these other studies are not comparable, and that they suffer from ambiguity around the term “farmers’ market.” Using the same definition of farmers’ market as the Sommer, Wing and Aitkens’ study, Blake (1994) concluded that prices at farmers’ markets are by and large lower, though by how much would vary by area.

Most researchers surveying customer patronage patterns report high levels of repeat patronage. Stephenson and Lev (1998) found that 46 percent of the population of two communities in Oregon visited farmers’ markets 1-9 times per year and 13 percent visited more than 10 times. Swanson and Lewis (1991) reported that 43 percent of urban Alaskans shop at farmers’ markets or roadside stands several times per year. Roy and Jordan (1977) reported that white customers in Louisiana averaged 18 visits per year and

black customers averaged 24. Yet Rhodus, Schwartz and Hoskins (1994) found that Ohio patrons reported few multiple visits to farmers' markets, preferring instead to visit roadside stands. The national dietary trend toward greater consumption of fresh fruit and vegetables by the middle-class is also thought to affect patronage of farmers' markets (Capstick, 1982; Cartier, 1994; Connell, Beierlein and Vroomen, 1986; Eastwood, Brooker and Gray, 1995; Lockeretz, 1987; Wynne and Roth, 1997).

Although the relationship between farmers' markets and the organic movement is not well documented (Gates, 1996), one might argue that without an early commercial outlet for these products, producers and consumers would have been frustrated in their efforts to connect. Farmers' markets were certainly the most visible source of organic products until quite recently and they still remain one of the best sources of culinary exotica (Gates, 1996). Indeed, farmers' markets are thought to represent important testing grounds for new products and new technologies (Brenner, 1999; Egan, 1999; Kaminsky, 1999). For some products, most notably extremely perishable products, such as edible flowers, farmers' markets and other direct farmer-to-chef links remain virtually the only source of supply (Brenner, 1999; Egan, 1999; Kaminsky, 1999).



## Data

Data for this study were obtained through a telephone survey of Alabama food shoppers. The survey, conducted by the Center for Governmental Services Survey Research Laboratory (CGSSRL) at Auburn University between July 6 and July 21, 2006, was part of a broader feasibility study commissioned by the Alabama Farmers' Market Authority. A sample of households in Jefferson County was selected through random digit dialing, a procedure that allows each household that has a telephone to have an equal chance of being selected for the sample. The household member who was the primary food shopper for the household was selected to answer the survey questions. Calls were made in evening from 5:00 to 9:00 pm, and during the day on weekends (typically from 11:00am to 5:00pm on Saturdays and 1:00pm to 6:00pm on Sundays). A total of 4,069 call attempts were made resulting in 502 or 12% completed interviews. The average number of call attempts per telephone number was 2.26.

## Survey Responses

The survey instrument contained questions related to respondents' socio-demographic characteristics, behaviors and attitudes toward shopping at public markets. First, the socio-demographic characteristics show that 53 percent of the respondents were Caucasian/White and 42 percent African-American/Black. Another 5 percent was classified as other races. In terms of marital status, 53 percent of the respondents were married while 47 percent were single, divorced

or widowed. About 49 percent of the respondents lived in households with only one or two people. Another 24 percent lived in three-person households, while 27 percent lived in households with four or more people.

The majority (61 percent) of the sample indicated having no children under 18 living in the household. As for age, approximately 55 percent of the respondents were between the ages of 26 to 55. The respondents are highly educated with 68 percent of the total sample having at least some college education. Approximately 33 percent of those who responded to the income question reported household income of \$50,000 or more. Compared with state averages from U.S. Census Bureau statistics (U.S. Census Bureau 2000), the sample demographics are fairly different from the state's demographics (Table 1). For instance, 68 percent of the survey sample had some college level education or above versus 45 percent in the state; 33 percent of the survey sample reported annual income above \$50,000 versus 42 percent in the state; and 53 percent of the survey sample was White versus 71 percent in the state.

-----Table 1 about here -----

For consumer behaviors and attitudes, a set of questions asked respondents about the time of day and portion of the week during which they do most of their grocery shopping. About 56 percent indicated shopping evenly between weekdays and weekends, with another 23 percent favoring weekdays.

The most popular time of day was the mornings (before 11:30 am), with about 28 percent selecting this time period. Another 28 percent favored the afternoons (1:30 to 5 pm) for their most typical food shopping time period, and another 26 percent favored the early evening hours (5 pm to 8 pm). A small percent of respondents (6 percent) stated that lunchtime was the most favored shopping time of the day (11:30 am to 1:30 pm).

In terms of the most popular/first-choice grocery store among respondents (i.e. where they "do most of their shopping"), Wal-Mart attracted 27 percent of the responses. The next most popular grocery store was Publix, garnering 19 percent of the responses, followed by Piggly Wiggly with 13 percent of the responses. Other popular grocery store destinations included Food World (11 percent), Winn Dixie (9 percent), and Bruno's (7 percent).

Two reasons for selecting the first-choice store were accepted from each respondent and tabulated in combination as well as separately. When looking at the combined frequency of answers, "selection" accounted for the most popular reason with 25 percent of responses. Selection of produce, organic products, and meat were important among those who chose their primary grocery store based on selection. "Convenient to home" accounted for the next most popular reason with 24 percent of responses. "Prices" accounted for the third most-popular reason, with a combined 16 percent of responses selecting this factor. "Quality of merchandise" was the fourth most-frequently mentioned reason, with a combined count of eleven percent of all responses.

The survey results also suggest that freshness and quality followed by price are the most important factors that draw shoppers to farmers' markets, at all income levels. Particularly, lower-income consumers appear to be more interested in the basics of quality and price as compared to middle class consumers who more often cited "atmosphere", "variety of produce", and "buying from the farmer". Both middle- and lower-income consumers were interested in organically grown produce; 78% of all respondents said that they would be willing to spend more for organically grown produce. However, the questionnaire did not explore how much more they would be willing to pay. Finally, the average potential shopper has a positive attitude towards public markets and lives within four to six miles of the Birmingham Farmers' market.

#### Econometric Model

A review of existing studies revealed no widely accepted theoretical or empirical guidelines for evaluating the impact of socio-demographic and behavior factors in the likelihood of patronizing farmers' markets. Thus, to examine the factors that are correlated with respondents' decision to patronize public markets, we specify a logit model. The logit model was selected because its asymptotic characteristic constrains the predicted probabilities to a range of zero to one. Also, since the survey provided individual rather than aggregate observations maximum likelihood estimation (Gujarati, 1992) was used to obtain

consistent and asymptotically efficient parameters (Pindyck and Rubinfeld, 1991).

By adopting the logit regression, the following model was developed to predict the likelihood of an individual shopping at a public market:

$$\text{Prob} = \alpha k + \varepsilon \tag{1}$$

$$\text{where Prob} = \begin{cases} 1 & \text{if the response is Yes} \\ 0 & \text{otherwise.} \end{cases}$$

Also,  $k$  is a vector of explanatory variables while  $\alpha$  is a set of parameter to be estimated. The model was tested under the specification:

$$\begin{aligned} \text{Prob} = & \alpha_0 + \alpha_1 \text{AGE2} + \alpha_2 \text{AGE3} + \alpha_3 \text{RACE} + \alpha_4 \text{MARITAL} + \alpha_5 \text{CHILDREN} + \alpha_6 \text{EDUC2} \\ & + \alpha_7 \text{EDUC3} + \alpha_8 \text{INCOME2} + \alpha_9 \text{INCOME3} + \alpha_{10} \text{HHSIZE} + \alpha_{11} \text{LOCATION} \\ & + \alpha_{12} \text{SHOPPER} + \alpha_{13} \text{SELECTION} + \alpha_{14} \text{QUALITY} + \alpha_{15} \text{PRICE} + \alpha_{16} \text{PARKING} \\ & + \alpha_{17} \text{DISTANCE2} + \alpha_{18} \text{DISTANCE3} + \varepsilon \end{aligned} \tag{2}$$

The dependent variable (Prob) is coded as 1 if respondents' answered yes to the patronizing question (If there was a public market in Birmingham would you shop there?) and 0 otherwise. The percentage of respondents that answered yes was 0.68 with a standard deviation of 0.467. Equation 2 was estimated in LIMDEP 7.0 statistical software (Greene, 2000). For estimation purposes, one classification was eliminated from each group of variables to prevent perfect collinearity. The base group of individuals and omitted variables are given in Table 2.

-----Table 2 about here -----

From equation 2, the parameter estimates ( $\alpha_i$ ) do not directly represent the effect of the independent variables. Therefore, to obtain the estimator for qualitative discrete variables in the logit model, we estimated the change in probability brought about by a change in the independent variable as:

$$\Delta P_i = \alpha_k P_i (1 - P_i) \quad (3)$$

Where  $P_i$  is the estimated probability of an individual patronizing a public market evaluated at the mean, and  $\alpha_k$  is the estimated coefficient of the  $k^{\text{th}}$  variable. The change in probability ( $\Delta P_i$ ) is a function of the probability, and when multiplied by 100 gives the percentage change in the probability of the event occurring given a change in the variable, all things being equal.

## Results

The results are presented in Table 3, including the log likelihood coefficient, the Nagelkerke  $R^2$ , the chi-square statistics and the model's prediction success. The measures of goodness of fit indicate that the model fits the data fairly well. The logit model chi-square statistics was significant at the 0.005 level clearly rejecting the null hypothesis that the set of explanatory variables were together insignificant in predicting variation in the dependent variable. Although the  $R^2$  value is low, which is the norm in logistic regression (Hosmer and Lemeshow, 2000); the tabulation of prediction success shows that with a 50-50 classification scheme, approximately 74 percent (369 out of 502) of the

individuals in the sample were correctly classified as those who would shop at the public market.

----- Table 3 about here -----

In the case of the explanatory variables, the estimated results are interpreted using the change in probability (Equation 3). From Table 3, the logit regression has eleven coefficient estimates that are statistically significant, including race (+), age2 (+), educ2 (+), educ3 (+), income3 (+), shopper (+), household size (+), selection (-), quality (+), price (+) and distance3 (-), all consistent with expectations.

The model revealed that *ceteris paribus*, White respondents are more likely to shop at public markets than non-White respondents. The estimated change in probability coefficient (0.023) suggests that White respondents are 2.3 percent more likely to patronize public markets than non-White respondents. Also, in agreement with the literature (Blackbum and Jack, 1983; Buitenhuis, Kezis and Kerr, 1983; Connell, Beierlein and Vroomen, 1986), the age variables are estimated with the expected sign and one of the two explanatory age variables (age2) was found to be significant; implying that, *ceteris paribus*, household heads 35-55 years of age corresponded with a higher probability of shopping at public markets than household heads under the age of 35.

In line with study expectation, larger households are found to significantly increase the likelihood of patronizing public markets. Those with 3

or more members are more likely to patronize public markets than those with less than 3 members. A possible reason that large households shop at public markets than smaller households may be attributable to the propensity of those responsible for purchasing groceries for many other people to look for lower prices. Previous studies (Sommer, Wing and Aitekens, 1980; Blake, 1994; Ross, 2002) have consistently shown farmers' market prices to be lower than supermarket prices. This sentiment is reinforced by the highly significant result for the shopper variable, suggesting that *ceteris paribus*, primary household food shoppers are 4 percent more likely to patronize farmers markets than non-primary food shoppers.

Connell, Beierlein and Vroomen (1986) suggested that offering a wide variety of produce and non-produce items may increase patronage at farmers' markets since shoppers appreciate wide selection. In agreement with this sentiment, the selection variable was estimated with the expected positive sign and was statistically significant, indicating that, *ceteris paribus*, shoppers who attach greater importance on the availability of wide variety of produce and non-produce items are 4 percent more likely to patronize public markets than their counterparts.

Of all explanatory variables, those who put greater importance on price and quality had the greatest effect on patronizing public markets. Respondents to whom price was very important are 12 percent more likely to shop at public markets, and those to whom quality was very important are 9 percent more



likely to shop at public markets. The results also suggest that, compared to the quality variable, the price variable has a greater effect on respondents' likelihood to shop at public markets in Alabama. This finding may be attributable to the fact that 67 percent of the respondents are low income earners (i.e., reported less than \$50,000 annual incomes). Previous studies indicate that low income consumers are more concerned with the price of the produce, while those in higher income brackets are more concerned with quality factors when patronizing farmers' markets (Buitenhuys, 1983; Hughes and Mattson, 1992).

Based on previous farmers' market literature and consumer behavior literature, those with higher education and higher annual incomes were expected to be frequent public market shoppers (Adrian, 1982; Blackburn and Jack, 1983; Buitenhuys, Kezis and Kerr, 1983). While both explanatory education variables are significant and have the expected positive sign, only one of the two explanatory income variables (income3) is significant and has the expected positive sign. In agreement with the literature, those with a 4 year college degree are 1.4 percent more likely to patronize public markets than those with less than 4 year college degree. Similarly, those with a graduate degree are 4 percent more likely to patronize public markets than those with less than 4 years of college. For income, households with \$50,000 or more annual income are 2 percent more likely to shop at public markets than those with less than \$35,000 in annual income.

Location, distance and parking can be considered as measures of convenience. The estimated coefficients for location and parking are insignificant. For distance, the variables are estimated with the expected negative sign and one of the two explanatory distance variables (distance3) was found to be significant. Ceteris paribus, respondents who stay more than 30 minutes away from the market are less likely to shop at the market than those who stay less than 5 minutes away from the market. However, the variable's estimated change in probability coefficient (-0.012) is fairly small. The small size of change in probability could be a reflection that farmers' market patrons may be willing to travel longer distances.

The coefficients for marital status and presence of children under the age of 18 in the household are contrary to the hypothesized positive effects and are statistically insignificant. The variables' change in probability coefficients (estimated at -0.003 and -0.001 for marital status and presence of children, respectively) are very small suggesting for instance, that whether the individual is married or not would not influence their decision to patronize a public market in a significant way. The lack of significance for the children variables reflects the earlier finding of relatively small change in probability coefficient for the household size variable.

## Conclusions

The successful operation of a farmers' market depends on many factors, but customers are a critical element. This study attempted to identify the effect of consumer characteristics on the likelihood of shopping at public markets in Alabama. The results pointed to several factors that seem to be strongly correlated with shopping at public markets, namely household income, age of household head and household size, price and quality of produce. From the perspective of farmers' market vendors, these characteristics should aid in developing a profile of likely customers. Vendors can choose to selectively target individual socio-demographic groups or focus on improving on those factors, such as price and quality, which may give them a competitive edge over large supermarket chains.

While the findings of this study highlight several significant variables, some limitations should be noted. Specifically, the small sample size and coverage area warrant some caution when extending the results to other geographic areas. Amidst these limitations, the findings may be useful for farmers' market vendors to increase the profitability of their operations and improve the likelihood that they would continue farming.

Table 1: Demographic Comparisons

Variable Name	Survey Sample Statistics	State Statistics (Census 2000)
Age	55% between 26 and 55 years	42% between 25 and 54 years
Race	53% White	71% White
Marital Status	53% married	52% married
Education	68% some college and above	45% some college and above
Household Income	33% \$50,000 or more	42% \$50,000 or more
Average Household size	2.2 persons	2.35 persons
Children under 18 years	39% with children under 18	23% with children under 18

Table 2: Descriptive Statistics for Explanatory Variables

Variable	Description	Percentage	SD
RACE	= 1 if white; 0 otherwise	0.53	0.49
AGE1*	= 1 if less than 35 years; 0 otherwise	0.20	0.35
AGE2	=1 if 35 to 55 years; 0 otherwise	0.45	0.50
AGE3	=1 if above 55 years; 0 otherwise	0.35	0.48
MARITAL	= 1 if married; 0 otherwise	0.53	0.50
CHILDREN	= 1 if there is children under 18 in the household; 0 otherwise	0.39	0.49
	What is the highest level of education you have completed?		
EDUC1*	= 1 if less than 4 year college degree; 0 otherwise	0.53	0.50
EDUC2	= 1 if completed 4 year college degree; 0 otherwise	0.29	0.45
EDUC3	= 1 if at least graduate degree; 0 otherwise	0.18	0.36
	What was the combined annual income for your entire household last year?		
INCOME1*	= 1 if less than \$35,000; 0 otherwise	0.22	0.39
INCOME2	= 1 if \$35,000 to \$50,000; 0 otherwise	0.45	0.32
INCOME3	= 1 if more than \$50,000; 0 otherwise	0.33	0.47
	How many people live in your household including yourself?		
HHSIZE1*	= 1 if less than 3 people, 0 otherwise	0.49	0.50
HHSIZE2	= 1 if 3 or more people; 0 otherwise	0.51	0.50
LOCATION	Would the location (Finley Avenue) influence your interest in visiting the public market, and if so, would it be a positive or negative influence? = 1 if positive influence; 0 otherwise	0.56	0.50
SHOPPER	Are you the primary household grocery shopper? = 1 if yes; 0 otherwise	0.81	0.73
	How important are the following when deciding where to shop for groceries?		
SELECTION	= 1 if selection of produce is very important; 0 otherwise	0.25	0.38
QUALITY	= 1 if quality is very important; 0 otherwise.	0.11	0.38
PRICE	= 1 if price is very important; 0 otherwise.	0.16	0.26
PARKING	= 1 if availability of free parking is very important; 0 otherwise	0.24	0.13
	How many minutes does it usually take you to get from (home or workplace) to your preferred store?		
DISTANCE1*	=1 if less than 5 minutes; 0 otherwise	0.28	0.35
DISTANCE2	=1 if 5 to 20 minutes; 0 otherwise	0.60	0.50
DISTANCE3	= 1 if more than 30 minutes; 0 otherwise	0.12	0.49

\*Refers to omitted category in the logit regression

Table 3: Logit Model Results

Variable	Coefficient	Std. Error	t-ratio	P-value	Change in Probability
RACE	0.420***	0.168	2.497	0.013	0.023
AGE2	1.861**	0.768	2.422	0.015	0.011
AGE3	1.203	1.236	0.973	0.330	0.014
MARITAL	-0.086	0.107	-0.804	0.421	-0.003
CHILDREN	-0.020	0.207	-0.097	0.922	-0.001
EDUC2	1.308**	0.677	1.931	0.054	0.014
EDUC3	0.614*	0.340	1.809	0.070	0.039
INCOME2	-0.721	0.464	-1.555	0.120	-0.013
INCOME3	0.414***	0.168	2.455	0.014	0.022
HHSIZE2	0.316**	0.142	2.232	0.026	0.009
LOCATION	-0.331	0.464	-0.714	0.475	-0.016
SHOPPER	0.647***	0.141	4.597	0.000	0.042
SELECTION	0.635*	0.349	1.818	0.069	0.041
QUALITY	0.989***	0.349	2.834	0.005	0.086
PRICE	1.183***	0.369	3.203	0.001	0.120
PARKING	0.260	0.233	1.117	0.264	0.012
DISTANCE2	-0.467	0.634	-0.737	0.461	-0.011
DISTANCE3	-1.651**	0.763	-2.164	0.030	-0.012
CONSTANT	-3.229***	1.067	-3.027	0.002	
Log-L	-279.854				
Chi-Square	68.701				
Nagelkerke R <sup>2</sup>	0.038				
Model Prediction	0.735				
Sample Size	502				

\*: significant at the .10 level

\*\* : significant at the .05 level

\*\*\*: significant at the .01 level

## Reference

- Adrian, J. L. 1982. Farmers' Markets in Alabama. Highlights of Agricultural Research 29 (2): 16. Auburn, AL: Alabama Agricultural Experiment Station.
- Blackburn, K. L., & Jack, R.L. 1983. Markets in West Virginia. Morgantown, WV: West Virginia Agricultural Experiment Station.
- Blake, B. 1994. "Farmers' Market Produce Prices: A Multivariate Analysis." UC Cooperative Extension. Accessed December 16, 2006 at Openair- Market Net Working Papers. Available at:  
<http://www.openair.org/cyjour/fprice.html>.
- Brenner, L. 1999. American Appetite: The Coming of Age of a Cuisine. Avon, New York.
- Brown, A. 2001. Counting farmers markets. The Geographical Review 91(4): 655-674.
- Brown, A. 2002. Farmers' Market Research 1940-2000: An Inventory and Review. American Journal of Alternative Agriculture. Volume 17, Number 4; pp168-170.  
<http://hortweb.cas.psu.edu/dept/faculty/adjunct/brown/brown-research-ajaa.pdf>
- Buitenhuys, N. C., Kezis, A.S., & Kerr, H.W. Jr. 1983. Consumer Purchasing Habits, Acceptance and Preferences for Direct Marketed Small Farms' Horticultural Commodities in Maine. Bulletin 797. Orono, ME: Maine Agricultural Experiment Station.
- Capstick, D.F. 1982. A study of direct marketing of farm produces in Arkansas. Bulletin 861. Agricultural Experiment Station, University of Arkansas, Fayetteville.
- Cartier, K.C. 1994. Direct marketing of produce: A study of farmers' markets in Jackson, Knoxville, and Memphis, Tennessee. Unpublished MSc Dissertation, University of Tennessee, Knoxville.
- Connell, C.M., Beierlein, J.G., & Vroomen, H. 1986. Consumer preference and attitudes regarding fruit and vegetable purchases from direct market outlets. Paper No 185. Department of Agricultural Economics and Rural Sociology, Pennsylvania State University, University Park

- Coster, M. 2004. *The value of 'new generation' farmers' markets to the community: perspectives of market managers*. Bendigo: Department of Primary Industries, Victoria.
- Eastwood, D.B., JBrooker, J.R., & Gray, M.D. 1995. An intrastate comparison of consumers' patronage of farmers' markets in Knox, Madison, and Shelby counties. Bull. 95-03. Agriculture Experiment Station, University of Tennessee, Knoxville.
- Egan, M. 1999. Friends of the farmers share their secrets. New York August 16,29.
- Erllich, R., Ruth, R., & Wahlqvist, M. 2005. *Regional foods: Australia's health and wealth* (Vol. 05/045). Barton, ACT:
- Estes, E. A. 1985. *Community Farmers' Markets in North Carolina: A Survey of Consumers and Sellers in 1981*. Bulletin 472. Raleigh, NC: Carolina Agricultural Research Service.
- Fitzgerald, A. 2004. "Appetite for farmers markets grows". The Des Moines Register (September 14). Accessed December 30, 2006 at: [http://www.newfarm.org/news/2004/0904/0920/farm\\_market.shtml](http://www.newfarm.org/news/2004/0904/0920/farm_market.shtml)
- Gates, J.P. 1996. Tracing the Evolution of Organic/Sustainable Agriculture: A Selected and Annotated Bibliography. BLA72. National Agriculture library, US Department of Agriculture, Washington DC. (original work published in 1988.).
- Govindasamy, R., & Nayga, R. 1996. Characteristics of farmer-to-consumer direct market customers: an overview. *Journal of Extension*, 34(4).
- Govindasamy, R., Zurbruggen, M., Italia, J., Adelaja, A., Nitzsche, P., & Van Vranken, R. 1998. *Farmers Markets: Consumer trends, preferences, and characteristics*: Rutgers University and New Jersey Agricultural Experiment Station.
- Greene, W. *LIMDEP*, Version 7.0, Econometric Software, New York: Plainview, 2000.
- Gujarati, D. 1992. *Essentials of Econometrics*. McGraw Hill, New York.
- Hinrichs, C. 2001. The Experiences and Views of Iowa Farmers' Market Vendors: Summary of Research Findings (April). Department of Sociology. Iowa



- State University. Ames. pp1, 4. Available at:  
[http://www.extension.iastate.edu/hunger/reports/frmrs\\_mkt\\_report\\_C1.pdf](http://www.extension.iastate.edu/hunger/reports/frmrs_mkt_report_C1.pdf).
- Hosmer, D.W., & Lemeshow, S. 2000. *Applied Logistic Regression*, 2<sup>nd</sup> ed. New York: John Wiley and Sons.
- Hughes, M.E., & Mattson, R.H. 1992. "Farmers' Markets in Kansas: A profile of Vendors and Market Organization." Report of Progress 658, Agricultural Experiment Station, Kansas State University.
- Kremen, A., Greene, C., & Hanson, J. 2004. "Organic Produce, Price Premiums, and Eco-Labeling in U.S. Farmers' Markets." ERS, USDA. VGS-301-01 (April 9). Electronic Report from the Economic Research Service. Available at: <http://www.ers.usda.gov>.
- Lockeretz, W. 1986. Urban Consumers' Attitudes toward Locally Grown Produce. *Alternative Agriculture* 1 (2): 83-88.
- Lockeretz, W. (ed.). 1987. *Sustaining Agriculture Near Cities*. Soil and Water Conservation Society, Ankeny, Iowa.
- Payne, T. 2002. U.S. Farmers Markets-2000: A Study of Emerging Trends (May). US Department of Agriculture. pp1, 8. Available at:  
<http://www.ams.usda.gov/directmarketing/FarmMark.pdf>
- Pindyck, R., & Rubinfeld, D. 1991. *Econometric Models & Economic Forecasts*. McGraw-Hill, Inc. New York.
- Project for Public Spaces. 2006. Public Markets.  
<http://www.pps.org/markets/?referrer=newsletter%5fnavbar>.
- Rhodus, T., Schwartz, J., & Hoskins, J. 1994. Ohio consumer opinions of roadside markets and farmers' markets. Report to the Ohio Rural Program. Ohio State University, Columbus.
- Ross, A. 2002. Comparisons of Prices: Supermarkets, Farm shops, Box schemes and Farmers' markets." *Organic Food Prices 2002*. Accessed Dec. 16, 2006 at <http://www.domainomania.com/wfa/downloads/pricesReport.pdf>.
- Roy, E.P., & Jordan, E. 1997. Consumer's evaluation of retail farmers' markets in Louisiana. *Louisiana Rural Economist* 39(4): 12-16.

Smith, R.H.T. 1980. Periodic market-places and periodic marketing: Review and prospect – II. *Progress in Human Geography* 4:1-31.

Stephenson, G., & Lev, L. 1998. *Common Support for Local Agriculture in Two Contrasting Cities*, Oregon State University, OSU Extension Service, Oregon Small Farms Technical Report Number 1.

Sommer, R., Wing, M., & Aitkens, S. 1980. "Price Savings to Consumers at Farmers' Markets." *Journal of Consumer Affairs*. 14, no. 2 (Winter): 452-462.

Swanson, R.B., & Lewis, C.E. 1991. Food acquisition, availability and allocation in urban Alaska. *Home Economics Research J.* 19:303-314.

Wood, R. 2003. "Farmers' markets blooming". *The Business Review (Albany)* – (August 1) . Accessed December 30, 2006 at:  
<http://www.bizjournals.com/albany/stories/2003/08/04/focus1.html?page=3>

Wynne, K., & Roth, M. 1997. Ithaca farmers' market economic impact study: Consumer and Vendor survey. Cornell Cooperative Extension, Tompkin County, Cornell University, Ithaca, New York.