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Date April 21, 1994

DIRECT MARKETING OF PRODUCE: A STUDY OF FARMERS' MARKETS IN JACKSON, KNOXVILLE, AND MEMPHIS, TENNESSEE

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Kristina Colette Cartier
May 1994

AG-VET-MED.

Thesis
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This Thesis Is Dedicated
In Loving Memory of
My Faithful Companion,
Bunny-Bunny

May He Rest in Peace
February 20, 1994

DEDICATION

This thesis is dedicated to:

my parents -
David and Nancy Cartier,
who have given their endless love and support;

my best friend -
James R. Casey II,
who has provided many words of encouragement;

and my friends at Collector's World -
Brit, Dwight, and James,
who gave me a place to escape to every Wednesday.

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ABSTRACT

The purpose of the study was to determine what characteristics influence whether a local resident will shop at a farmers' market and how much will be purchased while there. The markets under observation were Jackson, Knoxville, and Memphis, Tennessee. Questionnaires were distributed to patrons of each market for one week periods in Jackson, Memphis, and for two weeks in Knoxville. These responses were then compared to their respective county census data, descriptive and univariate analyses within and across markets were evaluated, and determinants of the amount spent were estimated.

The descriptive results revealed differences in socioeconomic characteristics. The populations surrounding each of the three markets are somewhat distinct in addition to the sizes of the metropolitan areas. Differences were found in the racial composition, the distribution of educational attainment, and the income distribution of the residents.

Despite these discrepancies, however, the socioeconomic characteristics of the patrons were similar in some respects. Shoppers were typically white females from small households that earned over $35,000 annually. Also, these older patrons were generally college educated.

Univariate results for the two weeks in Knoxville revealed only minimal differences between shopper characteristics. These variations, however, provide marketing opportunities. Specific groups to be targeted are men and shoppers who visit with family and friends. Factors to be emphasized are the hours of operation and the availability

of buying bulk produce for processing.

Customized marketing plans were developed for the Jackson, Knoxville, and Memphis farmers' markets based on the different indicators of amount spent revealed in the regression results. For Jackson, two campaigns suggested were to maintain the interest of current shoppers, who are local employees, and another to increase family visits to the market. In Knoxville during June, advertising messages should highlight plants and crafts as well as stress the quality and service aspects available at the market. During July, a billboard campaign was suggested to attract residents to the market to make substitute and supplemental purchases. For Memphis, the marketing strategy should be to emphasize the plant and craft offerings to residents who want a place to take their family and friends.

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CHAPTER I

INTRODUCTION

DEFINITION OF DIRECT MARKETING

Direct marketing has been defined in the **Dictionary of Marketing Terms** as:

> The total of activities by which the sellers, in effecting the exchange of goods and services with the buyer, directs efforts to a target audience using one or more media (direct selling, direct mail, telemarketing, direct-action advertising, catalogue selling, cable tv selling, etc.) for the purpose of soliciting a response by phone mail or personal visit, from a prospect or customer (Bennett 88).

This is a rather narrow definition which focuses mainly on company-to-consumer relationships. Belch and Belch broaden Bennett's description to "a system of marketing by which an organization communicates directly with customers to generate a response and/or transaction" (Belch and Belch 15).

A retail orientation is typically a system of buyers and sellers where the final purchaser is the consumer. Direct marketing typically shortens the retail selling chain by allowing the producer/manufacturer to sell to one person or to many individual buyers, who are the end consumers, or the users of the product or service. This line of thought encompasses all sectors of the economy, including agricultural marketing.

The purpose of direct marketing is to shorten the marketing channel between producer and consumer "by shifting the incidence of marketing functions normally performed by" the middlemen to the producer or consumer (Adrian and Vitelli 3). In the agricultural sector, there are three main types of direct marketing of fresh produce. They are pick-your-own (PYO),

roadside stands, and farmers' markets. PYO "invites the public...to come to the location where one or more crops are ripe in the field and pick fresh produce...."(Hils, Jr. 11). Roadside markets are usually a permanent stand where the farmer's produce is sold. They "rely on regular local traffic past [the] site.." (Hils, Jr. 8). Farmers' markets are the oldest direct marketing method. "For hundreds and even thousands of years growers have been bringing their produce into villages and towns to sell it in fairs, market squares, and bazaars"(Hils, Jr. 13). Grooms and Lytle's definition, which resembles Belch and Belch's general business one, is that a farmers' market has "a permanent geographic sales location with fixed structures used for selling fresh fruits and vegetables by the producer directly to the consumer"(1).

The fresh produce market has been characterized as a system of middlemen and chain food stores who utilize large volume procurement and mass merchandising techniques (Adrian, Brooker, and Free 5). Contrary to this centralized system, farmers' markets were established to sell fresh merchandise directly to the consumer. The desire was to eliminate the middlemen and brokers, who formed a "wide price spread between what the farmer receives and the consumers pay..." (Adrian and Vitelli 4).

Though the original direct marketing system operates today, there is a derivation of the original concept that is more commonly observed. A farmer or farmers sell(s) produce to a retail-oriented farmer, who then, in turn, deals with the final consumer. This phenomenon has the element of horizontal integration, where the market is seeking to collect the small parts together into a larger more efficient unit. Vertical integration has also occurred due to a more direct marketing channel.

For the smaller or backyard farmer, selling small amounts of fresh wares is not enough to justify the expense of renting a booth, advertising, etc. For the consumer, the effort involved in visiting each individual producer is very time consuming. Henderson and Linstrom in their 1982 study support this idea with, "A successful direct market operation must generate a sales volume large enough to cover operating expenses and earn sufficient profits to cover risk and competition returns on invested capital"(10).

As a result, small growers and consumers would not meet in the marketplace, but the retail farmer brings them together. The collection of merchandise from many smaller sources provides a wider variety and larger volume to the customer and an outlet for the smaller sellers. Though mainly a result of horizontal integration, this form of exchange can be considered direct marketing because there is still an attempt at vertical integration with the elimination of the wholesaler and the expansion of the farmer's operation from "the production segment to [the inclusion] of the retailing or marketing segment"(Adrian and Vitelli 5).

LOCATION OF DIRECT MARKETS

The idea of permanency was encouraged by the opportunity to obtain a greater profit. Where to locate relative to potential customers and competition then became a concern. Dewar and Watson believe a market's "economic success...rests primarily on [its] location and [its] environmental quality"(84). Environmental quality is the "vibrancy, color, hygiene, and the spatial experiences of users"(Dewar and Watson 54).

Part of the success of a market depends on its location. An inappropriate location can lead to total failure, where the expensive facility is abandoned (Dewar and Watson 23). Therefore, the direct market should be situated near relatively large sections of the population it wishes to attract. The location of competitors should be considered in the decision on where to build as well.

In general, direct markets tend to be utilized more by residents of cities and suburbs than by their rural counterparts (Jack and Blackburn 23). Henderson and Linstrom in their 1980 study note, "The potential number of customers for a farmer depends largely upon the population of nearby urban centers, the distance to such urban centers, and the types of roads potential customers must travel"(6). Concerning distance, markets should be located within 20 miles or less of potential users. In order to recoup the selling expenses, the enterprise's feasibility and potential profitability is affected by population concentrations and its accessibility to potential consumers (Henderson and Linstrom-1982 10).

Location and design define what a farmers' market is to its customers, in addition to the products sold. Physical structure alone does not determine whether a person chooses to shop at a direct outlet. Perception of the whole shopping experience plays an important role because of what the customer is trying to achieve through his/her actions. "The likelihood of a customer using a particular vending outlet is related to the expectation of satisfying the purpose of the shopping trip"(Dewar and Watson 36). This idea stresses the fact that "what consumers think your product is can be just as important as what it really is"(Nash 36). Dewar and Watson more specifically define this perception for urban

markets as, "The concentration of particular goods and services affects the image of the market amongst consumers"(36). In order to determine what to promote, customers' characteristics that impact values outlet choices have to be uncovered.

Whether a person will shop and purchase at an alternative market is dependent on various factors, such as the day of the week, time of day, distance from the market, and with whom they are shopping. These factors when combined with socioeconomic information comprise a set of variables that is traditionally used to study which groups of individuals will shop at a direct outlet and how much they will spend.

BASIC DEMAND THEORY

The consumer or household forms the basic unit of analysis for demand theory. An individual is faced with choices caused by basic requirements for food, clothing, and shelter; personal characteristics; and environmental effects, social and physical. Unfortunately, the resources necessary to fulfill each of the previous requirements are limited. Therefore, the consumer must choose among the available specific goods and services that will provide him or her with the optimum satisfaction level within the confines of his or her resources.

"Economists usually define [optimum] in terms of the consumer's attempt to maximize utility (well-being). The utility approach to the theory of demand can be stated mathematically. This involves the maximization of utility subject to an income constraint" (Tomek and Robinson 9). More specifically, consumer demand has been defined "as the

various quantities of a particular commodity that an individual consumer is willing and able to buy as the price of that commodity varies, with all other factors that affect demand held constant" (Tomek and Robinson 10).

Factors affecting demand are classified by Tomek and Robinson as: (1) population size and its distribution by age, geographic area, etc.; (2) consumer income and its distribution; (3) prices and availability of other commodities and services; and (4) consumer tastes and preferences (17). A change in age distribution has been recently taking effect. "The proportion of consumers in the United States who are elderly has been increasing in recent years. This share will increase in the future and will probably have marked effects on the demand for food and other products" (Schrimper 163). Changes in consumer food consumption patterns have been observed in the past ten years. There has been a "substitution between commodities resulting from the recent physical activity and dietary or health awareness" (Raunikar and Huang 98).

FRESH PRODUCE DEMAND

The demand for fresh fruits and vegetables is increasing, even as expenditures for food at home is decreasing. Putnam and Allshouse's research concluded that "Fresh fruit consumption gained 18 pounds per capita from the 1970-74 annual average to a total of 94 pounds (retail-weight equivalent) in 1989 (Table 1). The rise was due [in part] to sharp increases in consumption of fresh noncitrus fruits like bananas, grapes, [and] apples. Total per capita consumption of twelve major commercial fresh vegetables hit a record high in 1989, 41 percent above the 1970

TABLE 1
PER CAPITA CONSUMPTION OF FRESH FRUITS AND VEGETABLES FROM 1968 TO 1989

YEAR	FRUIT CONSUMPTION	VEGETABLE CONSUMPTION
	Pounds	
1968	76.0	65.4
1969	76.8	65.2
1970	76.7	65.1
1971	77.8	64.9
1972	72.6	65.9
1973	75.2	67.6
1974	76.4	68.7
1975	82.0	68.0
1976	81.1	69.5
1977	78.5	69.7
1978	80.9	70.1
1979	80.4	72.9
1980	86.9	74.3
1981	83.8	73.0
1982	84.6	76.9
1983	89.9	74.4
1984	88.3	80.8
1985	86.1	81.2
1986	92.5	81.1
1987	97.2	85.8
1988	95.1	88.7
1989	93.9	91.8

Source: Food Consumption, Prices, and Expenditures 1968-89, Judith Putnam and Jane Allshouse, USDA-ERS, Statistical Bulletin No. 825

level" (17, 18). This was partially a result of increasing "concerns about the safety and nutritional quality of food..."(Magrabi, Chung, Cha, and Yang 110). Consumption of fresh produce was also affected by age distribution. "For example, the 65-and-older groups spent a bigger proportion of their at-home food dollars for cereal and bakery products, dairy products, and fruits and vegetables than 55-64 age group" (Price 170). In comparison, Blaylock and Smallwood found that expenditures for food at home was falling (from 73.7 percent in 1972-3 to 67.6 percent in 1980-81), while food purchased away from home was increasing. These data show that the share of the consumer's food dollar for fresh produce has been rising for an extended period of time.

STATEMENT OF THE PROBLEM

Though direct marketing is not a "new phenomenon" (How 328), it is being challenged, as are its standard retailing counterparts, by a more competitive world. "By 1980, at least ten 'meaningful differentiated' formats were vying for the consumers' food dollars. The new choice set included such alternatives as hypermarches, warehouse stores, super combos..." (Arnold, Oum, and Tigert 149). The resurgence of interest in farmers' markets can be partially attributed to an attempt to "bring supply more in line with demand. The imbalance between food demand and food production has resulted from excess capacity in the food-producing sector" (Raunikar and Huang 91). Therefore, farmers' markets are being used to reduce some of this excess fresh produce. The recession that began in 1990 followed by a recent moderate recovery is also limiting the

overall amount of retail dollars in the marketplace. As a result, an individual firm in the industry wants to find new ways to minimize its cost and increase revenues through better resource allocation. Arnold, Oum, and Tigert believe that "only a few food retailing formats will have a long and profitable life cycle. For example, warehouse stores...have achieved price leadership in either food or nonfood merchandise" (150). Customer information is an essential part of determining what marketing strategy to use, (i.e., lowest prices or greatest variety, and how to advertise this strategy to the consumer).

Fresh fruits and vegetables made up 47 percent of grocery sales in 1992 (Hammel 131). These sales accounted for $23 billion of the total retail performance. This was a 9.9 percent ($2 billion) increase over 1991 (Hammel 131). Perishable foods, which includes fresh produce, continues to be a large percentage of sales. Because of this contribution, retailers are trying to increase sales through nutrition awareness and a switch to organically grown produce.

Alternative shopping establishments compete with the local supermarkets for consumer dollars. Farmers' markets tend to be more permanent in nature than PYO and roadside stands. They usually have a retail orientation when centered around a structure of some sort. For example, farmers' markets in Northern Virginia move from parking lot to parking lot each day of the week, while the Knox County Regional Farmers' Market has a building established for clients and customers alike.

Grooms and Lytle relate that the "demand for the products sold at retail farmers' markets is inversely related to the distance consumers must travel to shop"(2). This is only one of many factors that affects

the quantity demanded function. Some additional characteristics are time of day, day of the week, intent of purchase (substitute/additional), person(s) shopping with, products of interest, age, number of people in the household, educational attainment, and income.

"In direct marketing, it is recognized that most or all profit is derived from repeat sales to customers." (Jain and Migliaro 10) This refers back to marketing basics, where it is taught "that it's far easier and cheaper to resell [to] existing clients or customers than it is to" generate new ones (Bacon 9). Because of this fact, it seems essential that a consumer profile be defined and used to help achieve repeat customers, as well as attract new ones. Previous research by Roy, Leary, and Law; Connell, Beierlein, and Vroomen; and Jack and Blackburn, permits the determination of a basic outline of a farmers' market consumer. They tend to have a higher than average education and income. They generally live within a twenty mile radius of the market. Their main goal for shopping at these alternative, direct-marketing establishments is to buy produce that is superior with respect to quality, price, and freshness.

There are inefficiencies in the fresh produce direct marketing system because of inadequate information on shoppers. An understanding of current farmers' market customers is needed to eliminate the waste of valuable resources in the system. A profile of a typical farmers' market shopper would facilitate the design and implementation of promotional activities and the setting of operational guidelines, including hours.

OBJECTIVES

The goal of this study was to determine what characteristics influence whether a local resident will shop a farmers' market and how much will be purchased while there. It was achieved by gathering and analyzing basic information regarding current farmers' market customers. The results can enhance the efficiency of the direct fresh produce marketing system for consumers and producers by reducing the waste of valuable resources.

The specific objectives were to determine:

1) the similarity between the farmers' market patrons and county residents;
2) the effect of special events on the likelihood of purchase and amount spent;
3) what sources of information were used by the patrons to find out about the farmers' market; and
4) if there is a difference in likelihood of purchase among shoppers at these farmers' markets (Jackson, Knoxville, and Memphis), and which socioeconomic characteristics are associated with spending more.

CHAPTER II

REVIEW OF LITERATURE

THE IMPORTANCE OF FARMERS' MARKETS

With the increased interest in direct marketing of farm products, the U.S. government passed the Farmer-to-Consumer Direct Marketing Act of 1976 (Public Law 94-463). "The purpose of the law is to appraise the extent of direct marketing and its benefits to consumers and farmers and to promote the development and expansion of direct marketing of agricultural commodities from farmers to consumers on an economically sustainable basis" (Henderson and Linstrom-1980 i). The Agricultural Marketing Service and the Extension Division of the Science and Education Administration of the U.S. Department of Agriculture are in charge of promoting direct marketing.

Adrian, Brooker, and Free believed, "considerable attention was focused on the fresh fruit and vegetable marketing system in the 1970's as food prices rose and some consumers became dissatisfied with the products of the system"(1). Consumers wanted to return to "the original, purest type of food distribution"(Linstrom 2). Adrian and Vitelli stated,

> Impetus for this resurgence of interest resulted from direct outlets being capable of satisfying particular needs in the marketplace. For example, limited resource farmers and gardeners with excess production are provided generally accessible means for supplementing income through produce sales. Consumers can also benefit in that they are provided the opportunity to select and purchase fresh, locally grown produce, often at lower prices (3).

Another important factor in heightening the renewed look at direct outlets was the consumer's awareness of the benefits of having a healthy diet and the role that fresh produce plays in it (Adrian and Vitelli). This has led to a change in consumer preferences and buying habits (Buitenhuys, King, Kezis, and Kerr, Jr.; Connell, Beierlein, and Vroomen). With this change, demand and consumption of nonprocessed fruits and vegetables have increased (Jack and Blackburn; Eastwood, Orr, and Brooker; Grooms and Lytle). In addition, farmers' markets serve as social outlets for the surrounding communities by providing a place to meet and converse and allowing the purchaser to develop a personal relationship with the sellers (Roy, Leary, and Law).

CUSTOMER CHARACTERISTICS

A number of studies have been published on direct marketing and farmers' markets. These serve only as a basis for further research because a majority did not utilize any higher analyses than percentages. The results of consumer profiles varied across states. Therefore, they cannot be generalized to any particular situation. These profiles do, however, provide a starting point.

Previous studies have shown that almost fifty percent of direct market shoppers have completed at least a high school education (Buitenhuys, King, Kezis, and Kerr, Jr; Jack and Blackburn; Roy, Leary, and Law; Connell, Beierlein, and Vroomen). Consumers who were college graduates accounted for one-fifth to one-third of the customers. Their incomes varied tremendously, however. In West Virginia, Alabama, and

Maine, respondents earned $15,000 to $39,999 per year (Jack & Blackburn; Adrian & Vitelli; Buitenhuys, et al.). Louisiana's household income level was $10,000 to $19,999, with the under ten thousand dollar bracket a close second (32.9 percent) (Roy, et al.). Almost two-thirds of Pennsylvania shoppers earned between $10,000 and $30,000 (Connell, et al.). Two of the studies concluded, in general, that "users tended to be from a higher income group than nonusers" (Buitenhuys, et al.; Roy, et al.).

The direct market shopper tended to be at least 25 years old (Connell, et al.; Adrian and Vitelli; Roy, et al.). The percentage of elderly shoppers varied by state. The Louisiana and Alabama studies had higher proportions of the over 55 population, 26 percent and 32 percent, respectively (Roy, et al.; Adrian and Vitelli). Pennsylvania was significantly lower at 18.1 percent (Connell, et al.).

There were on average three people per household. The typical household size, however, was one to two people (Adrian and Vitelli; Connell, et al.; Roy, et al.). Shoppers seemed to be employed full- and part-time (Connell, et al.). Retirees' participation varied between 11.8 percent, 18.75 percent, and 24 percent (Roy, et al.; Connell, et al.; Jack and Blackburn). Homemaker attendance ranged from 18 percent up to 39.8 percent (Jack and Blackburn; Roy, et al.).

SHOPPING ENVIRONMENT

Apples were the most popular purchase for a majority of consumers (Buitenhuys, et al.; Jack and Blackburn; Eastwood, Brooker, and Orr; Connell, et al.). Tomatoes, peas, and corn were favorites in the South

(Adrian and Vitelli; Roy, et al.). Fresh produce was purchased primarily for processing over fifty percent of the time except in Louisiana (26 percent) (Buitenhuys, et al.; Adrian and Vitelli; Roy, et al.). Typically customers travelled five miles or less, one-way or round-trip, to reach the direct market, though in Oregon five to nine miles and over 20 miles were the normal distances for them to commute (Burt, Seat, and Burt).

Consumers had visited the direct market or farmers' market one to five times with six to ten times being the next most frequent choice (Burt, et al.; Jack and Blackburn). Pennsylvania shoppers made this a monthly event (Connell, et al.), while Alabama shoppers visited weekly (Adrian and Vitelli). Consumers preferred Fridays and Saturdays in Louisiana and Pennsylvania (Roy, et al.; Connell, et al.). Mornings were the top choice for when to shop (Roy, et al.; Connell, et al.; Adrian and Vitelli). The seven to nine a.m. time slot (29 percent - 37.7 percent) was the most popular among the respondents (Roy, et al.; Adrian and Vitelli). Shoppers tended to spend between five and ten dollars (Jack and Blackburn; Roy, et al.). Pennsylvania saw a higher purchase amount, with six to ten dollars being the top expenditure range (36.9 percent) and the over $20 being 20.9 percent (Connell, et al.). Overall, Jack and Blackburn concluded "Respondents were willing to travel further to farmers' markets and pick-your-own operations and generally spent more per visit at them than the other types of direct markets" (24).

SOURCES OF INFORMATION

A strong source of information was word-of-mouth (WOM), compared to the traditional methods of print and visual media. The Oregon study had 102 respondents, out of 387 usable responses, list WOM as their source of information, which was second only to newspapers, 132 responses (Burt, et al.). For direct market users in the Maine survey, newspaper advertisements were the most frequently cited source for farmers' markets. WOM was second with 38.1 percent (Buitenhuys et al.). West Virginians ranked WOM as their first source of information, 46.2 percent, with newspaper ads following at 36.4 percent. The respondents were allowed to answer with more than one source (Jack and Blackburn). The Pennsylvania study did not even list word-of-mouth in its advertising question. If WOM was included, it was in the "Other" category which only had two responses (Connell, et al.). Surprisingly, television was one of the least cited sources in all of the studies. A possible reason is that the expense of television ads is prohibitive; therefore this form of media is not greatly utilized by farmers' markets.

CONSUMERS' PERCEPTIONS OF DIRECT MARKETS

Customers sought out alternative markets to purchase fresh quality produce at reasonable prices (Burt; Jack and Blackburn; Connell, et al.; Adrian and Vitelli). Quality was the most important factor when deciding to buy from a direct market (84.2 percent, 76.9 percent, 92.5 percent), even among nonusers this was considered very important (Buitenhuys, et

al.; Jack and Blackburn; Connell, et al.). Finding good prices was the second important criterion with percentages 61.9 and 65.1 for West Virginia and Maine, respectively. The Pennsylvania respondents cited appearance, and then nutritional value, as the next important considerations. Price was only the fourth concern for these customers (Connell, et al.). Maine shoppers were altruistic with wanting to help farmers (54.5 percent) before worrying about variety and volume (Buitenhuys et al.). West Virginia shoppers were the opposite. They wanted good variety and volume (51.9 percent) before helping out the farmers (44.8 percent) (Jack and Blackburn).

In the Connell, Beierlein, and Vroomen study, direct markets were rated superior on all seven criteria except for cleanliness, where the grocery stores were rated superior. Louisiana respondents found prices (58.4 percent), appearance (54.7 percent), and variety (53.3 percent) at farmers' markets to be acceptable. Also highly rated were quantity, hours/day of operation, and location (Roy, et al.).

There was a wide variety of dislikes. In the Oregon study, the "other" category ranked the highest (34 percent), which included location and lack of selection. Travel time was second at 32 percent (Burt, et al.). In the West Virginia study, respondents complained of having no direct market locations nearby (41 percent). The outlets they did have were cited as being inconvenient (33.1 percent) with high prices (20.7 percent) (Jack and Blackburn). Pennsylvania direct markets had the best rating with 70.9 percent finding nothing wrong (Connell, et al.). The Maine and West Virginia studies found that consumers wanted to lower prices (24.9 percent, 22 percent), increase the variety and volume (21.8

percent), and change the location (18.7 percent, 15.9 percent) (Buitenhuys, et al.; Jack and Blackburn).

CONSUMER DEMAND

Eastwood, Brooker, and Orr conducted a study of consumer preferences for produce. While not entirely relevant to this farmers' market study, there were some important insights to be gained. First, the analysis performed was a probit regression. The authors were trying to determine "consumer behavior with respect to purchase regularity, satisfaction, origin and willingness to pay for selected local versus non-Tennessee grown fresh produce"(183). Secondly, there were similar variables used that were included in this study. The categories Eastwood, Brooker, and Orr used were income, household size and age distribution, race, age of the respondent, college education, and occupation. Income, household size, age of the respondent, educational attainment, as well as some additional variables were used in the current study.

Eastwood, Brooker, and Orr's results showed that "a higher income household had a greater probability of purchasing fresh produce regularly" (189). Satisfaction was affected differently in each product category. For example, lower income households had a higher probability of being satisfied with their apple purchases than their broccoli purchases. Generally, respondents were not overly concerned where the produce was grown, "regardless of household socioeconomic characteristics" (191), except for peaches and tomatoes. Similar to the probability of satisfaction, the probability of willingness to pay was affected

differently based on product class.

The conclusion is that most Knoxville customers are not concerned about the origin of fresh produce except for tomatoes and peaches. "There appears to be no strong preference either for or against the other locally grown commodities [apples, broccoli, and cabbages] considered" (192). Therefore, promotion should emphasize the advantage of freshness and ripeness in locally grown produce.

Another consumer demand study done by Pompelli and Heien illustrates the use of the Heckman two-step procedure. The product under consideration was wine. Price and demographic effects were analyzed regarding heavy and light users of red and white wine.

The analysis was accomplished by first identifying the household characteristics associated with a certain type of wine purchase. "The second step [used] this information and price information to estimate the parameters of the demand model" (Pompelli and Heien 5). The demand equation for any wine category was defined as:

$$Y_{1i} = X_{1i}b_i + U_{1i} \text{ for } i \in I_v$$
$$Y_{2i} = X_{2i}b_2 + U_{2i} \text{ for all } i=1,\ldots,I$$

where I = total number of households in the data set;
I_v = number of households in the data with nonzero expenditures for the specific wine category;
Y_{1i} = quantity demanded; Y_{2i} = 0-1 dummy variable;
X_{1i} = price, income, and demographic variables;
X_{2i} = set of explanatory socioeconomic variables that influence the decision to purchase; and
U_{ni} = error term.

The quantity demanded is "a linear function of X_{1i} which includes price, income, and demographic variables" (Pompelli and Heien 6). When Y_{1i} is nonzero, Y_{2i} is one.

Pompelli and Heien's results showed that "the influence of each demographic factor varies depending on the type of wine, and whether it

involves a decision to buy wine or a decision about how much wine to purchase" (8). They concluded that there were demographic differences among light and heavy wine drinkers and differences across various wine types.

CHAPTER III

METHODOLOGY AND PROCEDURES

PROCEDURE

The farmers' markets under observation are Jackson, Knoxville, and Memphis. The corresponding counties are Madison, Knox, and Shelby, respectively. The location of the areas under study are indicated on a county map of Tennessee (Figure 1).

One thousand questionnaires were distributed to the customers on the way in or out of each of the farmers' markets. It was a revised version of a questionnaire used by Drs. Brooker, Eastwood, and Gray in a 1992 study of the Knox County Farmers' Market (Appendix A). The structure of the instrument was based on previous direct market surveys. The questionnaires were pre-addressed with postage paid to encourage a greater response. They were handed out randomly for one week at each farmers' market. The proportionality of surveys distributed each day was based on the usual amount of customer traffic. For example, in Knoxville, questionnaires were distributed as follows: 100 during the weekdays, 300 on Saturday, and 200 on Sunday. In Memphis and Jackson, the questionnaires were handed out a week in late July. Knoxville questionnaires were distributed the week of June 21-27, which had a one day Swap Meet and Peach Party on Saturday the 26th. Because of the special interest in Knox County's Regional Farmers' Market, another one thousand surveys were handed out during July 18-24 when no special

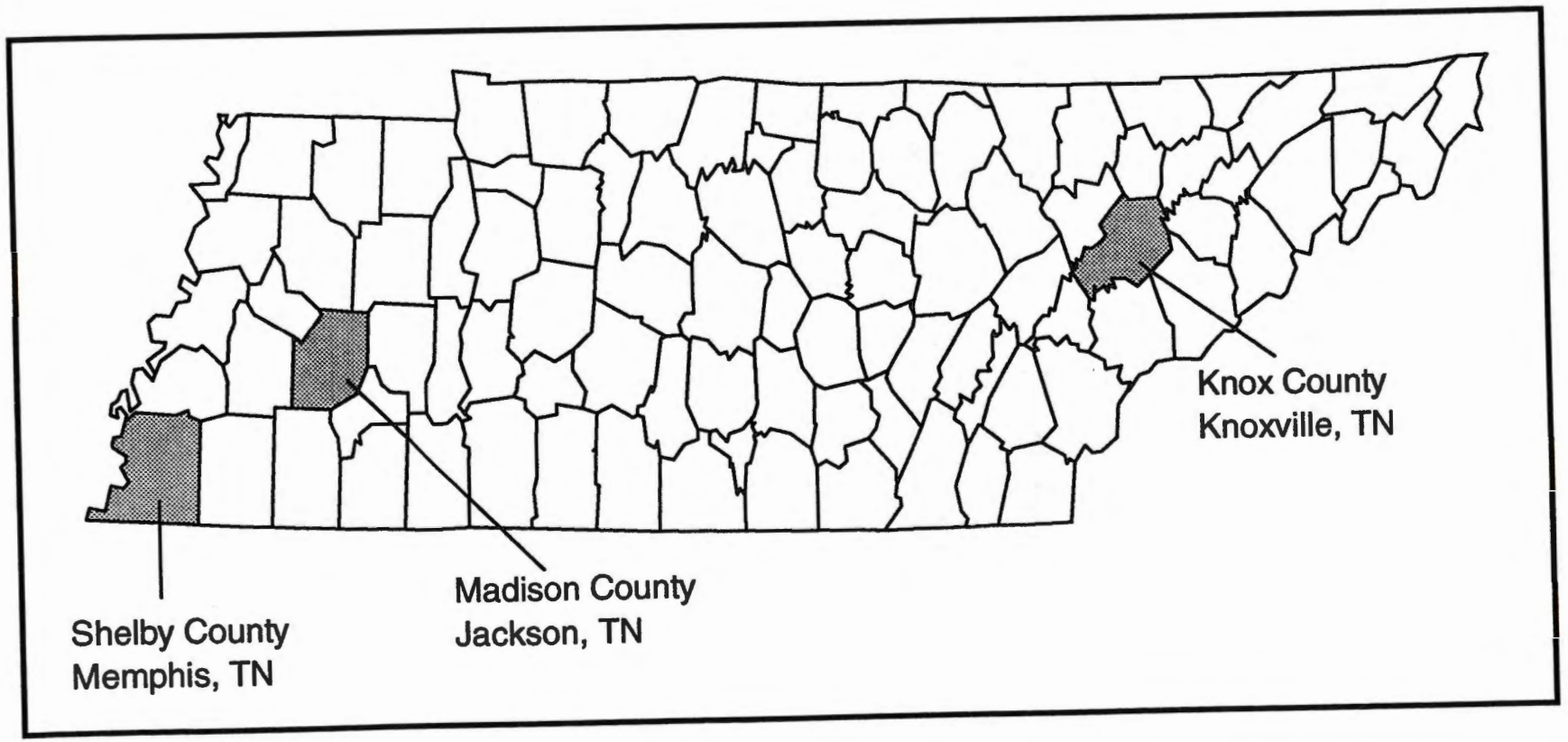


Figure 1. Areas Under Study in Tennessee

activities were planned, but most of the produce was in season. The questionnaires were coded and entered into a computer database using the EPI data entry software. A preliminary analysis was conducted to look at the frequency of occurrence and chi-square tests of independence. A more detailed analysis was performed utilizing a two-step Heckman model to determine what factors affect purchasing behavior and amount spent.

Initial comparisons were made of the socioeconomic characteristics gathered through the surveys at each of the farmers' market sites to each county's census characteristics to identify similarities and differences between the two groups. An analysis of perceptions, attitudes, and socioeconomic characteristics of shoppers of the Knox County Regional Farmers' Market was performed based on data collected from questionnaires distributed during the months of June and July, 1993. Preliminary results were combined with conclusions found in existing studies to develop and estimate expenditure equations for patrons at the markets. This involved the two-step Heckman procedure, where appropriate, to relate selected socioeconomic measures to the amount purchased. After reviewing the results of the analysis and the comments by the participants, marketing suggestions are presented for the individual markets.

DESCRIPTION OF THE FARMERS' MARKETS

In Tennessee, agricultural producer-to-consumer outlets are commonplace for many residents and visitors. East Tennessee alone has forty-six establishments (Tennessee Producer to Consumer Bulletin). The concentration of this study is on three farmers' markets: Jackson,

Knoxville, and Memphis. The newest appearances are the Jackson and Knoxville markets, which have only been open for about two years. Memphis has been served by the Agricenter complex for five years, though it has recently been remodeled and enlarged.

Jackson

The Jackson City Farmers' Market is located on six and a half acres downtown. It is situated between College Street and Lafayette Street, near the city's courthouse and central business district. Jackson is currently renovating the whole downtown area. The market is easily accessible from Highland Avenue or the I-45 Bypass (Frontage Road). There are no visible signs directing customers to the market.

The main structure is a 20,000 square foot open air truck shed. It has twenty eight 12'x24' spaces for vendors. Another twelve spaces, completed in Fall 1993, are located across the street. There are three uncovered selling areas as well. The retail building, which is adjacent to the open-air shed, can hold up to twenty individual dealers. The overall dimensions of this building are 40'x60'. There is a permanent snack bar inside the retail area. Another retail building is scheduled to be built. Only Tennessee-grown produce is allowed in the truck shed. (Appendix B).

A wholesale shed is being built a block away. It will be 80'x140'. The intention is to add a cooler and a loading ramp. As there are no major wholesalers in the vicinity, the hope is the construction of this facility will entice wholesalers to operate in the Jackson area.

There are many entertainment/special activities organized for the Farmers' Market. A craft collector show is held every month in the retail building. An annual event is the Shannon Street Blues Week. There are no vendors present during the festivities, but it gives publicity to the location. The festival is a popular event, with more than one thousand participants (Fly). There is also an annual Iris bulb sale, which is sponsored by the Iris Club. In the future, the Farmers' Market plans to allow garden clubs to hold meetings in the buildings.

The main advertising medium is the local newspaper. Radio advertisements are also used. Television is utilized infrequently. The newspaper ads are located in the classified section. There is an announcement for the arrival of various produce items and the weekly special events.

Knoxville

The Knox County Regional Farmers' Market is located in the East section of the county. It is easily accessed by I-640 and Washington Pike, where small signs direct shoppers. A traffic light was installed in the intersection to allow safer entrance to the market.

This farmers' market has an imposing 27,000 square foot building. There are fifty ten feet by twenty feet spaces for rent on a monthly basis. It resembles an oversized barn done in the traditional red tone. A colorful sign beckons the customer to enter. The parking area is ample. Access for the handicapped is provided by designated parking spaces and two wheelchair ramps into the retail building. Also, a motorized cart is

available for use inside the building. The main entrance is a wide garage-type door for summer use and is flanked by two doors on either side for colder/rainy days. The left side of the building is closed by a concrete block wall, while the right side permits an open-air environment with rolling metal door sections. The back of the structure has three huge doors to accommodate the loading and unloading of farm trucks as well as semi-tractor trailers (Appendix B).

The main aisle has a craft shop on the left front side and a produce vendor on the right side. There are two other side 'streets'. The left-hand side is home to an expansion of a craft shop and tables and chairs for the cafe. On the opposite side, there are five established vendors (meaning they are not only there for event weekends). Attached to this major retail building is the truck canopy. This is where local farmers can pull-up and sell produce from stalls rented by the day or weekend. The structure is approximately 18 feet wide and 36 feet in length.

Located east of the retail building is the wholesale shed. This structure is a long sturdy concrete building. There is no physical connection to the main building. The 'doors' are large enough for a tractor trailer. Customers are permitted to drive their cars through the main aisle because bulk sales are the focus of this area (Appendix B).

A special event is planned every four to six weeks. This usually attracts additional vendors. Some specific celebrations include the Strawberry Festival, the Peach Party, the Birthday Party, and a Halloween party. The market circulates fifty thousand general information pamphlets a year. Ads are placed in local newspapers, such as the Halls Shopper and the Knoxville News-Sentinel. Once or a twice a year, an ad is placed in

Southern Living. Radio promotion is utilized frequently, including sponsorship of the morning/evening traffic reports.

Memphis

The Farmers' Market is located approximately twenty miles from downtown Memphis. It is easily accessible by Interstate 240 and Walnut Grove Road, and on the other side, by Germantown Road. The market structure is part of the Agricenter complex. Shelby Farms owns the Agricenter and the Farmers' Market. The market has been in operation for five years.

The overall design of the main structure resembles an old-fashioned A-roofed barn. A longer building is attached to the barn by a hallway where the bathrooms, vending machines, and manager's office are located. The floor area is approximately 6,500 square feet for both buildings. The building design allows for good ventilation that permits inside temperatures to be cooler than outside temperatures. It was remodelled in 1992 (Appendix B).

There is adequate space for fifty-four vendors, but some vendors rent more than one of the 10'x10' spaces. The Farmers' Market is usually fully rented during the months of July and August.

The owner, Shelby Farms, is a corporation. The board of directors has placed a farmer in charge of overseeing the administration of the market and its manager. The firm hopes to expand to include wholesaling in the next three to five years.

The Memphis Farmers' Market has benefitted from a good relationship

with the local media. Various articles have given the market free exposure to the public. Besides media coverage, the manager has placed a limited number of advertisements in the local paper. One ad was for the "Grand Opening" after the 1992 renovations. The content of these ads generally focused on the produce available for that week. The frequency of the ads has been three to four times a year. Also there are highly visible signs on Walnut Grove Road. There are signs before the Interstate 240 exits, as well, but they can be easily missed because the signs are small in size.

METHODOLOGY

t-Test

"A statistical test is based on the concept of proof by contradiction and is composed of [five parts]" (Ott 137). They are the null hypothesis, the research hypothesis, a test statistic, a defined rejection region, and of course, a conclusion. The null hypothesis H_0 says that there is no effect or no difference. A low p-value represents "good evidence that the research hypothesis is true" (Younger 170). A research hypothesis asserts "that some effect of difference is present" (170). The 5 and 10 percent level (α=0.05, 0.10) are particularly common indicators of significance. These levels are "widely accepted criterion for meaningful evidence in research work" (171). Therefore, with a two-tailed test, the null hypothesis is rejected if $|t|$ is greater than the t-value for $a=\alpha/2$ and degrees of freedom (df) n-1 (Ott 154). Also, it should be

noted that a t-test was chosen because this method of significance "should be used any time [the variance] is unknown and the distribution of y-values is mound-shaped" (Ott 154). This results in a hypothesis test of μ_1-μ_2. Richmond states, "When the sample size is large, n-1 becomes close to n; and, at the same time, Student's distribution closely approximates the normal distribution" (194). This applies to sample sizes of thirty or greater.

Chi-square Test

The chi-square test for independence determines whether or not the distributions of responses from two samples are related to each other, e.g. does the income distribution from the Jackson survey differ from those of Memphis? In statistical terms, the null hypothesis states that the measures being tested are independent. The alternative hypothesis states the variables are indeed related to each other. The equation for the test statistic is

$$X^2 = \Sigma[(n_{ij} - E_{ij})^2/E_{ij}]$$

where E_{ij} = [(row i total)(column j total)]/n

n_{ij} = observed number of measurements in the ith row and the jth column

n = number of observations

This statistic is the sum of the squared differences between an observed frequency and an expected frequency divided by the expected frequency (Fruend and Williams 16). The rejection region of the null hypothesis is where X^2 exceeds the tabulated value of the chi-square for an α and df = (r-1)(c-1), where r = number of rows in the table and c = number of columns in the table (Ott 252).

Probability Models

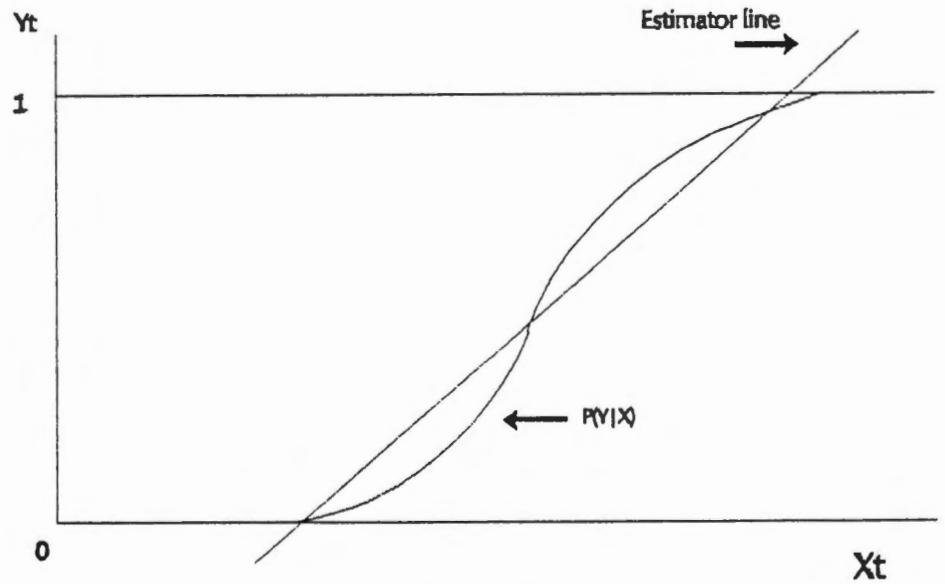
Probit

The intent of performing a probability or logistic analysis is to provide a basis for determining what consumer characteristics affect purchase decisions. This concept can be written as:

$$P_t = \text{Prob}(Y_t=1) = F(X_t\beta) \text{ and}$$
$$1-P_t = \text{Prob}(Y_t=0) = 1-F(X_t\beta)$$

where $F(X_t\beta)$ = the cumulative function that describes how the probabilities are related to the independent variables (Hanushek and Jackson 187); β = the unknown vector of parameters; X_t = the row vector; and $X_t\beta$ = the buying potential index (Kennedy 234).

The probit model converts the linear probability model into a 0 to 1 interval, "without actually creating probability estimates of 0 or 1" (Kennedy 229). A graphical illustration is:



The probit model is "based upon the assumption that $F(X\iota)$ is cumulative normal"(Hanushek and Jackson 189). The equation is:

$$P = \text{Prob}(Y_t=1) = F(X\beta) = 1\backslash(2\pi)^{1/2} \int_{-\infty}^{x\beta} e^{-u2/2}dU$$

where U is a "random variable distributed as a standard normal deviate, i.e. U is N(0,1). Thus, the probability of the event in question occurring, Prob(Y_t=1), is the area under the standard normal curve between -∞ and $X\beta$. The larger the value of $X\beta$, the more likely the event is to occur" (189).

To overcome the problems associated with grouping the data for the probit and logit models, a different estimator is required, one that deals directly with the probability function. The maximum likelihood procedure (and its estimator) accomplishes this by "treating each unit as a separate observation, rather than grouping them to get estimates of P_{ij}" (Hanushek and Jackson 202). The likelihood function is attempting to answer the question, "What underlying parameters would be 'most likely' to have produced the observed data?" (202)

The probit model is very similar to the logit function for solving the likelihood of purchase. The normal distribution equations are

$$P_t = \text{Prob}(Y_t=1) = 1/(2\pi)^{1/2} \int_{-\infty}^{X_tB^*} e^{-U^{*2}/2} dU^* = F(X_tB^*)$$

$$1-P_t = \text{Prob}(Y_t=0) = 1/(2\pi)^{1/2} \int_{X_tB^*}^{+\infty} e^{-U^{*2}/2} dU^* = 1 - F(X_tB^*)$$

Substitution into the original likelihood function and maximization of that function with respect to B^* will result in coefficients, which are the probit estimates (Hanushek and Jackson 205).

Heckman

The two-step purchase process involves the decision to buy some product or service, and a decision on what quantity to buy/how much to expend. This concept is more formally defined by Kennedy:

> Stage 1: regress each endogenous variable acting as a regressor in the equation being estimated on all the exogenous variables in the system of simultaneous equations...and calculate the estimated values of these endogenous variables.
>
> Stage 2: use these estimated values as instrumental variables for these endogenous variables or simply use these estimated values and the included exogenous variables as regressors in an OLS regression (159).

Heckman has somewhat simplified this process. Stage 1 becomes a probit equation that estimates the probability of purchase. Stage 2 is an expenditure equation that incorporates the probability of purchase as the inverse of Mills' ratio, as an explanatory variable. The technique is to allow for sample selection bias that could occur if only the amount purchased was considered. The Stage 2 equation is

$$E(U_{1i} | X_{1i}, Y_{2i} \geq 0) = X_{1i}\beta_1 + E(U_{1i} | U_{2i} \geq -X_{2i}\beta_2)$$

where X_{ji} = a vector of exogenous regressors;
β_j = a vector of parameters; $E(U_{ji})=0$

CHAPTER IV

RESULTS OF THE STUDY

DATA COLLECTION

The response rates for each survey were good. Memphis had the highest number with 348 returned questionnaires (≈35 percent). Knoxville was second with 31.5 percent for July, while June had a 25 percent response. Jackson had the lowest rate out of the four market surveys with only 112 returned. This response rate is enough to analyze, however, because it is above ten percent, which is one standard for determining the validity and conclusiveness of a study. A response from 97 persons yields a confidence level of ± 10 percent, anything less and the study is in danger of excluding "information which may differ from that provided by those who respond. In general, the lower the response rate the greater the concern that the measured characteristics may not truly reflect the underlying population"(Dillman 55).

DESCRIPTIVE ANALYSES

Resident Characteristics for Madison County

Jackson is located in Madison County in Western Tennessee. There are 77,982 people living in the county as of 1990 (Table 2). The U.S. Census recorded 21,418 households. Over half (57 percent), contain only

TABLE 2
COMPARISON OF JACKSON FARMERS' MARKET SHOPPERS
AND MADISON COUNTY RESIDENTS

ITEM		FARMERS' MARKET SHOPPER[a]	MADISON COUNTY RESIDENT
		Percent[b]	
COUNTY POPULATION: 77,982			
GENDER:	Female	68.5	52.9
	Male	31.5	47.1
RACE:	Black	4.5	31.0
	White	93.7	68.0
	Other[c]	1.8	1.0
AGE:	18 to 24	1.8	11.2
	25 to 44	18.7	30.0
	45 to 54	19.6	9.6
	55 to 64	21.4	8.4
	65 and older	38.4	13.8
HOUSEHOLD SIZE:			
	1 to 2 persons	66.7	57.0
EDUCATION:			
	Some high school	7.3	18.1
	High school graduate	32.1	28.4
	Some college	15.6	39.9
	College graduate	45.0	17.0
INCOME:	Under $15,000	9.4	31.4
	$15,000 to $24,999	17.7	20.6
	$25,000 to $34,999	18.8	16.3
	$35,000 and above[d]	54.2	31.7

Source: Survey of shoppers visiting the Jackson Farmers' Market and 1990 Census data (U.S. Bureau of the Census)
[a]Mail-back questionnaires distributed July 1993, with 112 returned.
[b]Based on the number of responses to a particular question.
[c]Include Asian, Native American, and Other categories.
[d]Grouped together because of incompatible ranges.

one to two people. Sixty-eight percent of the residents are white and thirty-one percent are black. Almost thirty percent (28.4 percent) are high school graduates, and seventeen percent have graduated from college. One third of the employed persons over the age of sixteen have technical, sales, or administrative support positions. Twenty-four percent have managerial jobs. The rest are employed in the service sector, in agriculture, in precision production, and as unskilled laborers. Madison County's median household income is $23,716. Forty-three percent make $19,999 or less, and one quarter earn between $30,000 and $50,000 per year as of 1989. Also of importance to the Jackson Farmers' Market is transportation and driving time to work because of its downtown location. Ninety-four percent of workers over sixteen years of age use a car or carpool to get to work. County residents take ten to twenty minutes to reach work (47 percent) (U.S.Bureau of the Census 1990).

Comparison of Resident Profile and Survey Results for Jackson

Comparing the census data with the survey responses yielded interesting contrasts and similarities. For number of people in a household, the percentage of one to two persons was 66.7, which is within 10 percentage points of the census' 57 percent. The income ranges closely matched county residents, except in two instances. The widest discrepancy was for the $15,000 and under category, with a 22 point difference. The proportion of respondents in the upper income levels for the survey were higher than those for the census. These two spreads might have been caused by sampling bias, but the contrast is consistent with the U.S.

government's findings that persons in the lowest income quintile purchased significantly less fresh produce ($168 worth) than the highest 20 percent, which spent $380 (U.S. Bureau of Labor Statistics 14).

There is a notable difference in the race. The survey was made up of 93.7 percent white respondents and 4.5 percent black respondents, but the census had 68 percent of the Madison county population as white and 31 percent as black. This gap is consistent with the conclusions of Connell, Beierlein, and Vroomen; Adrian and Vitelli; Roy, Leary, and Law; and Blaylock and Smallwood. "Nonblack households spend more per person than their black counterparts for most food groups studied, other factors being equal. For example, nonblacks spend about...10 percentage points more on food at home"(Blaylock and Smallwood 19). On average, nonblacks spent 9 percentage points more on fresh produce. There is a higher representation of females at the farmers' market than recorded in the 1990 census. This is consistent with Connell, Beierlein, and Vroomen; Adrian and Vitelli; and Roy, Leary, and Law, whose studies all had a large percentage of female respondents (over 80%). In conjunction, the U.S. government found that women spend $51 more on fresh produce than men (U.S. Bureau of Labor Statistics 166, 170).

Age distributions differed. There were no close proportions, as either the survey results were above or below the census data by 10 percentage points or more. This higher representation of older shoppers is consistent with Blaylock and Smallwood who concluded that "elderly persons are more likely to spend more per person than younger people on...fruits and vegetables (especially fresh).."(17). In contrast to the Tennessee results, the Louisiana, Pennsylvania, and Alabama studies had

larger proportions of respondents who were between the ages of 30 and 55 years old, rather than over 55.

Educational attainment of the respondents was under represented in the some high school and some college groups and over represented for graduates. The proportions of high school graduates only differed by 3.7 percentage points. The higher proportion of college educated respondents may be assumed to be a function of a greater awareness of and concern for the benefit of a healthy diet.

Resident Characteristics for Knox County

Knoxville is located in Knox County near the center of the eastern third of the state. There are 335,749 people living in this area (Table 3). The 1990 U.S. Census recorded 91,357 households. These households tend to consist of one or two people (60.9 percent). Ninety percent of the residents are white, and nine percent are black. Three-fourths of the residents have graduated from high school, and twenty-four percent have graduated from college. Of the employed persons over sixteen years of age, one third have technical, sales, or administrative positions. Thirty percent have managerial positions. The rest is divided among service, agriculture, precision production, and laborers. Knox County's median income is $26,010. Slightly under one-half of the work force (49.7 percent) earn between $16,000 and $49,999. Thirty percent receive less than $14,999. One fifth made over fifty thousand dollars a year in 1989. Transportation is important because of the market's distance away from the West side of town, where a majority of the people live. Ninety-three

TABLE 3
COMPARISON OF KNOX COUNTY REGIONAL FARMERS' MARKET SHOPPERS (WEEKS 1 AND 2) AND KNOX COUNTY RESIDENTS

ITEM		FARMERS' MARKET SHOPPERS WEEK 1[a]	FARMERS' MARKET SHOPPERS WEEK2[b]	KNOX COUNTY RESIDENT
			Percent[c]	
COUNTY POPULATION: 335,749				
GENDER:	Female	82.7	90.0	52.2
	Male	17.3	10.0	47.8
RACE:	Black	0.8	2.3	8.8
	White	96.8	96.8	89.8
	Other[d]	2.4	0.9	1.4
AGE:	18 to 24	1.6	2.3	12.7
	25 to 44	38.3	34.4	32.8
	45 to 54	23.1	24.0	10.5
	55 to 64	13.5	19.3	8.9
	65 and older	23.5	19.8	12.7
HOUSEHOLD SIZE:				
	1 to 2 persons	59.8	61.7	60.9
EDUCATION:				
	Some high school	4.1	3.2	14.5
	High school graduate	31.7	32.5	27.5
	Some college	14.6	14.8	18.4
	College graduate	49.6	49.4	28.8
INCOME:	Under $15,000	9.3	8.4	29.7
	$15,000 to $24,999	12.8	15.0	18.5
	$25,000 to $34,999	19.4	22.6	15.6
	$35,000 and above[e]	58.6	53.9	36.3

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market and 1990 Census Data (U.S. Bureau of the Census)
[a]Mail-back questionnaires distributed June 20-26, with 253 returned.
[b]Mail-back questionnaires distributed July 18-24, with 315 returned.
[c]Based on the number of responses to a particular question.
[d]Includes Asian, Native American, and Other categories.
[e]Grouped together because of incompatible ranges.

percent of the labor force drive cars or carpool to their jobs. Surprisingly, only one percent utilized public transportation even though there is an extensive bus system in the Knoxville area. Around seven thousand people worked at home. It takes county residents approximately twenty minutes on average to arrive at their offices (U.S. Bureau of the Census 1990).

Comparison of Resident Profile and Survey Results for Knoxville

The farmers' market shoppers have markedly similar, yet sometimes different characteristics from the 1990 census data. For the number of people in a household, there is only a 1.1 percentage point difference between the survey responses and county residents. Week two data showed a mere 0.8 percent difference. Household income levels were comparable for the most part in the middle ranges, while deviating by more than ten percentage points for the lower and upper quintiles. This is consistent with the government expenditure findings that households in the upper quintile purchased a significantly greater amount of fresh produce than those households in the lower quintiles (U.S. Bureau of Labor Statistics, 14). In Pennsylvania, Louisiana, and Alabama, however, the middle income ranges were the most represented.

Farmers' market shoppers were relatively close to the county residents in racial composition. There were less than seven percentage points difference for week one and week two (7, and 6.6, respectively). The respondents' gender, however, was proportionately higher for females in the survey in comparison with county residents (Female: week 1-30.5

points; week 2-37.8 points). This is consistent with Adrian and Vitelli; Connell, Beierlein, and Vroomen; and Roy, Leary, and Law, who found that a larger percentage of women frequent direct markets. In conjunction, the U.S. government studies determined that women typically spent $51 more on fresh produce than men (U.S. Bureau of Labor Statistics 166,170).

The age distribution was typically higher in the samples for both weeks than the census records. The under 25 group showed significantly less representation in both results. The 25 to 44 group proportions were the closest match with 5.5 and 1.6 percentage point differences for week one and week two, respectively, versus the census. This pattern is consistent with Blaylock and Smallwood's findings. They determined that "elderly persons are more likely to spend more per person than younger people on...fruits and vegetables (especially fresh).."(17). The Louisiana, Pennsylvania, and Alabama studies also found that direct markets were frequented by persons over the age of thirty.

College graduates made up almost half (49.6, 49.4) of the farmers' market shoppers, which was over 20 percentage points above the educational attainment of county residents. The "some high school" category was under represented in the survey responses, while graduates were about the same percentage as county residents. The some college proportion was the closest to the Knox resident proportion by being 3.8 and 3.5 percentage points below the average 18.4 percent. This is consistent with the studies done by Roy, Leary, and Law and Connell, Beierlein, and Vroomen. The discrepancy can also be assumed to be a factor of a better educated person being more aware of and concerned about their health, of which fresh produce plays a large part.

Resident Characteristics for Shelby County

The city of Memphis is located in Shelby county on the western border of Tennessee. There are 826,330 people living in this area (Table 4). The 1990 U.S. Census recorded 213,632 households. One-third of these households (29.7 percent) contain two people (related or unrelated) and another quarter (25.7 percent) have only one person. Fifty-five percent of the county population is white, and forty-three percent of the residents is black. Three-fourths have graduated from high school. One fifth has completed a college degree. Over one third (35.9 percent) of the employed persons over the age of sixteen have technical, sales, or administrative support positions. Slightly over twenty-six percent have managerial jobs. Shelby County's median income is $27,132. Twenty-eight percent made less than $24,999 a year. One-third earn between $26,000 and $50,000 as of 1989. To reach work ninety-one percent drive cars or are in carpools. Three percent use a form of public transportation. Forty-five percent of those employed outside of the home travel 10 to 20 minutes to reach work. Another thirty percent drive up to thirty minutes. Their mean travel time is 21.3 minutes (U.S. Bureau of the Census 1990).

Comparison of Resident Profile and Survey Results for Memphis

A comparison of survey results to the census data revealed similarities and differences. The proportion of respondents indicating being from a one or two person household was within 4.2 percentage points of the census proportion. Except for the low and high income ranges, the

TABLE 4
COMPARISON OF MEMPHIS FARMERS' MARKET SHOPPERS
AND SHELBY COUNTY RESIDENTS

ITEM		FARMERS' MARKET SHOPPER[a]	SHELBY COUNTY RESIDENT
		Percent[b]	
COUNTY POPULATION: 826,330			
GENDER:	Female	86.8	52.4
	Male	13.2	47.6
RACE:	Black	0.9	43.0
	White	98.2	55.0
	Other[c]	0.9	2.0
AGE:	18 to 24	0.0	11.3
	25 to 44	32.7	33.7
	45 to 54	26.9	9.5
	55 to 64	17.3	7.7
	65 and older	23.1	10.5
HOUSEHOLD SIZE:			
	1 to 2 persons	59.6	55.4
EDUCATION:			
	Some high school	0.6	15.9
	High school graduate	19.7	27.2
	Some college	18.0	22.4
	College graduate	61.7	25.5
INCOME:	Under $15,000	9.4	28.2
	$15,000 to $24,999	17.7	18.0
	$25,000 to $34,999	18.8	15.3
	$35,000 and above[d]	54.2	38.5

Source: Survey of shoppers visiting the Memphis farmers' market and 1990 Census data (U.S. Bureau of the Census)
[a]Mail-back questionnaires distributed July 1993, with 348 returned.
[b]Based on the number of responses to a particular question.
[c]Includes Asian, Native American, and Other categories.
[d]Grouped together because of incompatible ranges.

proportions of shoppers in the categories were similar. The percent of respondents in the $15,000 and under category was 18.8 percentage points less than that of the census. For the $50,000 and above range, approximately, there was a 17.4 point difference. The smallest difference was for $15,000 to $24,999, which was only a 0.3 point below the census proportion. These discrepancies could be caused by sampling bias, but more likely, it follows the government findings, which found that lower income households bought significantly less fresh produce than higher income households (U.S. Bureau of Labor Statistics 14). The Louisiana, Pennsylvania, and Alabama studies also had a higher percentage of respondents whose incomes were in the middle range.

As in Madison county, there was a large divergence between the racial composition of the respondent sample and county census. Survey results recorded a 98.2 percent white population, while the census had 55 percent. This gap was again consistent with Blaylock and Smallwood's conclusions that black households purchased less fresh fruits and vegetables than nonblack households (19). It is also supported by the results of Roy, Leary, and Law; Connell, Beierlein, and Vroomen; and Adrian and Vitelli. The Agricenter is located in one of the wealthy suburbs of Memphis; therefore, this may be why there is a smaller proportion of black shoppers because of the inaccessibility of private or public transportation in reaching this area. There was a large representative group of female shoppers, which is in accordance with the findings of the Pennsylvania, Louisiana, and Alabama studies. In conjunction, women purchased, on average, $299 of fresh produce, while males spent $248 (U.S. Bureau of Labor Statistics 166, 170).

With the age categories, there was only one close connection. The 25 to 44 group proportions differed by one percentage point. The census proportions were well below the survey results, except for the under 25 category. This is similar to Blaylock and Smallwood's conclusions, which found that persons over the age of 65 spent 37.7 percent more than the 45 to 64 age range and 111 percent more than the 30 to 44 category for fresh fruit (16).

There was wide variation in educational attainment. The "some high school" was under represented by 15.3 percentage points. High school graduates and "some college" relative frequencies were marginally below the census data (less than 10 percentage points). A 36.2 percentage point difference was found in the college graduate and above group. Previous studies concluded that one-third to one-fifth of direct market shoppers are college graduates. Another explanation is that the better educated a person is, the more they are aware of and concerned about their health, of which fresh produce plays a part.

CHI-SQUARE RESULTS

Results for Knoxville - Weeks 1 and 2

Chi-square tests were performed on the Knoxville data from week 1 and week 2 to determine if there were differences in shopper characteristics between an event and nonevent week (Table 5). The outcome was a rejection of the null hypothesis. This activity did not attract a significantly different type of consumer to the Knox County Regional

TABLE 5
CHI-SQUARE TEST RESULTS ON SHOPPER DEMOGRAPHICS FOR KNOXVILLE (WEEKS 1 AND 2)

ITEM		FARMERS' MARKET SHOPPERS WEEK 1[a]	WEEK 2[b]	CHI-SQUARE
		Percent[c]		
OCCUPATION:	Homemaker	24.0	26.7	
	Full-Time	43.6	39.2	
	Part-Time	6.8	7.4	
	Retired	23.6	23.2	
	Student	1.6	3.2	
	Unemployed	0.4	0.3	2.27
GENDER:	Male	17.3	10.0	
	Female	82.7	90.0	6.35**
AGE:	Under 25	1.6	2.3	
	25 to 34	11.2	13.6	
	35 to 44	27.1	20.8	
	45 to 54	23.1	24.0	
	55 to 64	13.5	19.5	
	65 or older	23.5	19.8	7.17
HOUSEHOLD SIZE:	One	9.6	14.1	
	Two	50.2	47.6	
	Three	20.1	17.4	
	Four or more	19.7	20.8	2.65
EDUCATION:	Some High School	4.1	3.2	
	High School Grad	31.7	32.5	
	Some College	14.6	14.9	
	College Graduate	49.6	49.4	0.27
INCOME:	$15,000 or less	9.3	8.4	
	$16,000-$25,000	12.8	15.0	
	$26,000-$35,000	19.4	22.6	
	$36,000-$45,000	21.1	16.0	
	$46,000-$55,000	15.0	11.8	
	$56,000 or more	22.5	26.1	4.47

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market
[a]Mail-back questionnaires distributed June 20-26, with 253 returned.
[b]Mail-back questionnaires distributed July 18-24, with 315 returned.
[c]Based on the number of responses to a particular question.
**Statistically significant at the .05 probability level.

Farmers' Market with the exception of gender.

The shoppers are college educated and a majority make either between $26,000-$45,000 or over $56,000. The middle age and elderly age ranges made up the large part of visitors to the market. The difference in the gender of the shoppers might be caused by sampling bias. It could, however, potentially be explained that events tend to attract more men to visit the farmers' market because the trip is not just for shopping but for entertainment, education, etc.

Taking a closer look at the time of day category, there are interesting differences between June and July (Table 6). With a large volume of produce being in season, significantly more shoppers choose to come during the morning hours in July than the week in June, where the afternoon hours were popular. A possible explanation is that customers are avoiding being active during the hot afternoons and purchasing the produce before the heat has a chance to wilt the fruits and vegetables. It was surprising to note that more people shopped with friends or alone during July. The family orientation is not strong for either week with percentages near ten or less. Newspaper and television appear to be the most used sources of information for both weeks. Fewer respondents cited billboards in July. Saturday is the most popular day to frequent the farmers' market. And on these trips, shoppers typically travel ten miles or less.

Though both sets of shoppers made purchases, persons in July spent significantly more than those in June, on average (Table 7). This may be a result of produce being in season, e.g. corn, beans, watermelons, etc. Their purchases were either substitutes for regular supermarket

TABLE 6
CHI-SQUARE RESULTS FOR THE ENVIRONMENT OF SHOPPERS' VISIT TO THE KNOX COUNTY REGIONAL FARMERS' MARKET (WEEKS 1 AND 2)

ITEM		FARMERS' MARKET SHOPPERS WEEK 1[a]	WEEK 2[b]	CHI-SQUARE
		Percent[c]		
DAY OF WEEK:	Sunday	16.9	15.1	
	Monday	7.6	10.9	
	Tuesday	10.0	11.5	
	Wednesday	13.7	13.1	
	Thursday	10.0	10.6	
	Friday	11.6	11.9	
	Saturday	30.1	26.9	2.70
TIME OF DAY:	9AM-12.59PM	44.0	71.1	
	1PM-4PM	50.0	28.3	
	4PM-8PM	6.0	0.7	46.80**
WHOM WITH:	Alone	24.5	26.4	
	Spouse	41.5	32.2	
	Children	7.9	10.8	
	Spse/child	9.1	4.8	
	Friend/Relat.	17.0	25.8	13.67**
DISTANCE: (One-way)	0.01-5	30.8	24.7	
	5.01-10	27.2	28.3	
	10.01-15	15.2	19.1	
	15.01-25	16.5	15.2	
	25.01-50	10.3	12.7	
	AVERAGE	12.6	13.8	
INFORMATION SOURCE:[d]				
	Friend/Word-of-mouth	39.9	44.0	0.93
	Radio	26.2	26.4	0.00
	Newspaper	62.9	59.9	0.51
	Driving By	37.1	35.8	0.10
	Billboard	23.8	17.9	2.90*
	Television	48.0	53.7	1.82

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market

[a]Mail-back questionnaire distributed June 20-26, with 253 returned.

[b]Mail-back questionnaire distributed July 18-24, with 315 returned.

[c]Based on the number of responses to a particular question.

[d]Respondent could answer more than once.

*Statistically significant at the .10 level.

**Statistically significant at the .05 probability level.

TABLE 7
CHI-SQUARE RESULTS ON PURCHASES
AT THE KNOX COUNTY REGIONAL FARMERS' MARKET
(WEEKS 1 AND 2)

ITEM		FARMERS' MARKET SHOPPERS WEEK 1[a]	WEEK 2[b]	CHI-SQUARE
		Percent[c]		
MADE A PURCHASE:	Yes	94.1	95.6	
	No	5.9	4.4	0.64
AMOUNT SPENT: (Dollars)	0.01-5	24.8	20.3	
	5.01-10	30.8	30.7	
	10.01-20	32.1	28.6	
	Over 20	12.4	20.3	6.53*
	AVERAGE	12.4	17.2	
PURCHASE CHOICE:	Substitute	56.2	48.0	
	Additional	42.5	49.3	
	Both	1.3	2.7	4.29
INTERESTED IN:[d]	Fruits	93.2	90.2	1.66
	Vegetables	95.2	96.8	0.98
	Flowers	19.2	16.8	0.54
	Plants	23.2	19.0	1.45
	Crafts	12.0	8.3	2.20
	Other[e]	6.8	9.5	1.36
WHAT FOR:	Processing	8.1	14.4	
	Supplement	83.9	74.4	
	Both	8.1	11.2	7.80**
NUMBER OF VISITS:	1-5	48.7	48.9	
	6-10	30.1	30.6	
	11-20	16.6	16.9	
	21 or more	4.7	3.7	0.27
	AVERAGE	7.8	7.3	

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market
[a]Mail-back questionnaires distributed June 20-26, with 253 returned.
[b]Mail-back questionnaires distributed July 18-24, with 315 returned.
[c]Based on the number of responses to a particular question.
[d]Respondents could answer more than once.
[e]Includes Baked goods, Meats, Ice cream, etc.
*Statistically significant at the .10 probability level.
**Statistically significant at the .05 probability level.

procurements or in addition to them. Fruits and vegetables were the products for which shoppers came to the market. In July, a higher percentage of shoppers were planning to process their purchases or are looking to supplement their weekly food shopping trips purchases as well as perform canning and freezing activities. Most respondents tended to visit, on average, seven times.

For products purchased, there was a significant difference for vegetables (significant at the .10 level) and for plants (significant at the .05 level) (Table 8). Otherwise, customers bought a similar variety of fruit, crafts, and other food, e.g. ice cream, bread, jams. Shoppers did not differ significantly in how often they planned to shop. Visiting once every two weeks and weekly were the favorite choices. Their reasons for visiting differed significantly by week. In June, customers indicated that they came to see an event or demo (20 people) compared to July (2 people). The majority, however, were making a special trip regardless of an event or not.

There was no significant difference found between the two weeks on question 14 responses, which asks what consumers would like to see changed or added to the market. The vendor category was marked by over 60 percent of the respondents in both weeks. Only about 8.5 percent of the shoppers of both weeks felt a change in crafts was necessary. Low responses were also seen for the plants, earlier hours, service, and events criteria. A problem with price was indicated by 45.3 percent of the respondents in June and 41.8 percent of the respondents in July. About one-fifth of the shoppers wished the market was open later in the evenings. One-third of the customers wanted to make a change in some area of produce. On the

TABLE 8
CHI-SQUARE RESULTS OF CHANGES TO THE MARKET FOR KNOXVILLE (WEEKS 1 AND 2)

ITEM		FARMERS' MARKET SHOPPPERS WEEK 1[a]	WEEK 2[b]	CHI-SQUARE
		Percent[c]		
ITEMS PURCHASED:[d]				
	Vegetables	84.5	90.0	3.67*
	Plants	13.4	4.7	12.97**
	Fruits	75.3	71.7	0.90
	Crafts	3.8	1.7	2.81
	Other Food[e]	20.1	25.0	1.83
PLAN TO VISIT:				
	Weekly	33.9	36.6	
	Every two weeks	43.2	36.1	
	Monthly	22.8	27.3	2.02
THINGS TO CHANGE:[f]				
	Vendors	64.7	60.8	0.76
	Crafts	9.1	8.4	0.05
	Plants	8.1	11.4	1.36
	Early hours	4.5	7.6	1.88
	Prices	45.3	41.8	0.56
	Later hours	19.0	18.6	0.01
	Service	5.4	5.9	0.05
	Produce	35.3	33.8	0.12
	Events	9.5	6.3	1.59
CHANGES LISTED:[g]	Prices	7.5	6.4	
	Vendors	27.3	21.4	
	Location	5.1	7.0	
	Nothing	6.7	6.1	
	Facilities	10.3	12.1	3.83

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market

[a]Mail-back questionnaire distributed June 20-26, with 253 returned.

[b]Mail-back quesitonnaire distributed July 18-24, with 315 returned.

[c]Based on the number of respondents.

[d]Respondent could answer more than once.

[e]Includes ice cream, breads, jams, honey, etc.

[f]Question 14 listed changes for respondents to mark.

[g]Question 16 was open-ended and later categorized according to complaint.

*Statistically significant at the .10 probability level.

**Statistically significant at the .05 probability level.

related question 16, "If you could change something about the farmers' market to make it better, what would you change?",no significant difference was found. The majority, over both weeks, (45 percent) did not want to modify anything about the market. One respondent answered the question, "Nothing-we like it." Altering something about the vendors was listed second, 24 percent. Typically, most customers wanted "more farmers" and "more local produce."

The Knox County Regional Farmers' Market was rated better than supermarkets on freshness, flavor, size, color, nutrition and shape. Both weeks of shoppers did not vary in these rankings (Table 9). Only on the price criterion did respondents' valuations differ significantly, at the .10 level. In comparison of 1992 to 1993, Knoxville shoppers did not greatly deviate from each other in their evaluation of quality, price, selection, and service. Overall, they felt the farmers' market had not improved or deteriorated in these four areas.

Results for Jackson, Knoxville, and Memphis

A chi-square analysis of the three markets (with Knoxville split into its two weeks) reveals that there is a significant difference for almost all of the questions (Table 10). Each farmers' market's area is independent from the other. The two categories that were not separate were the shoppers' jobs and the number of people in the household. An explanation for the job similarity is that the question asked for full- or part-time employment, homemaker, retired, student, and unemployed, which is consistent with the fact that most people tend to be either homemakers,

TABLE 9
CHI-SQUARE RESULTS ON ATTRIBUTE COMPARISONS
FOR KNOXVILLE (WEEKS 1 AND 2)

ITEM		FARMERS' MARKET SHOPPPERS WEEK 1[a]	WEEK 2[b]	CHI-SQUARE
		Percent[c]		
FLAVOR:	Supermarket[d]	3.4	1.7	
	Farmers' Market	78.4	84.0	
	Same	7.2	5.4	
	Don't Know	6.4	4.8	3.39
PRICE:	Supermarket[d]	13.6	7.5	
	Farmers' Market	51.3	58.8	
	Same	21.2	21.1	
	Don't Know	8.9	5.8	8.51*
FRESHNESS:	Supermarket[d]	4.2	2.7	
	Farmers' Market	81.4	89.1	
	Same	6.4	4.4	
	Don't Know	4.7	1.7	7.44
SIZE:	Supermarket[d]	3.0	3.4	
	Farmers' Market	53.0	57.8	
	Same	22.0	21.8	
	Don't Know	10.6	7.1	2.74
COLOR:	Supermarket[d]	4.7	3.7	
	Farmers' Market	53.0	57.5	
	Same	22.0	21.4	
	Don't Know	8.9	7.5	1.40
NUTRITION:	Supermarket[d]	1.7	1.7	
	Farmers' Market	48.7	52.7	
	Same	28.0	22.1	
	Don't Know	11.4	14.0	2.92
SHAPE:	Supermarket[d]	5.1	4.1	
	Farmers' Market	44.5	45.6	
	Same	25.4	26.2	
	Don't Know	11.4	11.2	0.40
QUALITY:	Better[e]	26.2	30.6	
	Same	54.4	53.2	
	Worse	13.3	13.4	3.39
PRICE:	Better[e]	21.5	20.4	
	Same	53.9	58.3	
	Worse	15.4	11.6	1.57
SELECTION:	Better[e]	30.3	35.2	
	Same	35.4	34.7	
	Worse	27.7	26.4	2.59
SERVICE:	Better[e]	24.6	25.0	
	Same	62.1	66.2	
	Worse	6.2	3.7	2.27

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market
[a]Mail-back questionnaire distributed June 20-26, with 253 returned.
[b]Mail-back quesitonnaire distributed July 18-24, with 315 returned.
[c]Based on the number of respondents.
[d]Supermarket is better, farmers' market is better, they are the same.
[e]1993 was better than, the same as, or worse than 1992.
*Statistically significant at the .10 probability level.

TABLE 10
CHI-SQUARE TEST RESULTS ON SHOPPER DEMOGRAPHICS FOR JACKSON, KNOXVILLE (WEEKS 1 AND 2), AND MEMPHIS

ITEM		FARMERS' MARKET SHOPPERS JACKSON	WEEK 1[a]	WEEK 2[b]	MEMPHIS	CHI-SQUARE
		Percent[c]				
OCCUPATION:	Homemaker	24.3	24.0	26.7	30.6	
	Full-Time	34.2	43.6	39.2	38.4	
	Part-Time	6.3	6.8	7.4	7.5	
	Retired	34.2	23.6	23.2	21.4	
	Student	0.9	1.6	3.2	1.7	
	Unemployed	0.0	0.4	0.3	0.3	14.10
GENDER:	Male	21.5	17.3	10.0	13.2	
	Female	68.5	82.7	90.0	86.8	30.64**
AGE:	Under 25	1.8	1.6	2.3	0.0	
	25 to 34	7.1	11.2	13.6	13.3	
	35 to 44	11.6	27.1	20.8	19.4	
	45 to 54	19.6	23.1	24.0	26.9	
	55 to 64	21.4	13.5	19.5	17.3	
	65 or older	38.4	23.5	19.8	23.1	38.45**
OCCUPANTS:	One	15.3	9.6	14.1	9.2	
	Two	51.4	50.2	47.6	50.4	
	Three	15.3	20.1	17.4	17.0	
	Four or more	18.0	19.7	20.8	23.3	7.19
EDUCATION:	Some High School	7.3	4.1	3.2	0.6	
	High School Grad	32.1	31.7	32.5	19.7	
	Some College	15.6	14.6	14.9	18.0	
	College Graduate	45.0	49.6	49.4	61.7	36.60**
INCOME:	$15,000 or less	9.4	9.3	8.4	1.6	
	$16,000-$25,000	17.7	12.8	15.0	6.6	
	$26,000-$35,000	18.8	19.4	22.6	12.0	
	$36,000-$45,000	14.6	21.1	16.0	19.6	
	$46,000-$55,000	10.4	15.0	11.8	16.1	
	$56,000 or more	29.2	22.5	26.1	44.2	70.85**

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market, the Jackson Farmers' Market, and the Memphis Farmers' Market
[a]Mail-back questionnaires distributed July, with 112 returned.
[b]Mail-back questionnaires distributed June 20-26, with 253 returned.
[c]Mail-back questionnaires distributed July 18-24, with 315 returned.
[d]Mail-back questionnaires distribute July, with 348 returned.
[e]Based on the number of responses to a particular question.
**Statistically significant at the .05 probability level.

employed, or retired in each area. Review of the descriptive analysis reveals that households with one or two people made up approximately sixty percent of the number of people for each county in a household.

In general, the chi-square results reveal that Jackson characteristics tend to differ from the Knoxville and Memphis markets. A possible explanation is that Knoxville and Memphis are urban centers versus Jackson's smaller city size. A greater number of men shopped at the Jackson market than Knoxville's week two and Memphis, even though males account for 47 percent of persons in all three counties (Table 10). Though Madison County has slightly more elderly residents, the Jackson market attracts a significantly larger proportion of shoppers who are 55 and older.

Memphis had a higher percentage of college educated shoppers than the other two markets, despite the fact that Knox County has a higher percentage of college graduates than either Shelby or Madison counties. The some college group is higher, however, for both the Memphis and Jackson areas. Memphis also had a significantly lower proportion of high school educated-only shoppers. In this instance, Jackson was similar to Knoxville. The Memphis farmers' market had a higher proportion of customer households that earn over $36,000 (except for week 1 of Knoxville). Though Shelby county does have more households who earn $35,000 or more, compared to Knoxville or Jackson.

While Knoxville shoppers tend to visit rather regularly throughout the week, Memphis respondents indicated Saturday as their favorite day to shop (Table 11). Jackson also had a large proportion of shoppers on Saturday, but the beginning of the week (Mondays and Tuesdays) was just as

TABLE 11
CHI-SQUARE RESULTS FOR THE ENVIRONMENT OF SHOPPERS' VISIT TO THE JACKSON, KNOXVILLE (WEEKS 1 AND 2), AND MEMPHIS FARMERS' MARKETS

ITEM		FARMERS' MARKET SHOPPERS				CHI-SQUARE
		JACKSON[a]	WEEK 1[b]	WEEK 2[c]	MEMPHIS[d]	
		Percent[e]				
DAY OF WEEK:	Sunday	0.0	16.9	15.1	0.0	
	Monday	26.1	7.6	10.9	11.7	
	Tuesday	28.8	10.0	11.5	8.2	
	Wednesday	0.0	13.7	13.1	13.4	
	Thursday	5.4	10.0	10.6	10.2	
	Friday	5.4	11.6	11.9	7.3	
	Saturday	34.2	30.1	26.9	49.3	177.16**
TIME OF DAY:	6AM-10AM	82.6	10.8	21.4	42.9	
	10AM-12.59PM	14.7	34.0	50.0	32.5	
	1PM-5PM	2.8	55.2	28.6	24.6	254.09**
WHOM WITH:	Alone	42.9	24.5	26.4	39.2	
	Spouse	20.5	41.5	32.2	28.2	
	Children	7.1	7.9	10.8	11.0	
	Spse/child	12.5	9.1	4.8	4.9	
	Friend/Relat.	17.0	17.0	25.8	16.7	53.11**
DISTANCE: (One-way)	0.01-5	61.5	30.8	24.7	58.2	
	5.01-10	22.0	27.2	28.3	32.4	
	10.01-15	5.5	15.2	19.1	5.9	
	15.01-50	11.0	26.8	27.9	3.5	160.18**
INFORMATION SOURCE:[f]						
	Friend	71.2	39.9	44.0	55.9	37.49**
	Radio	10.6	26.2	26.4	12.5	50.49**
	Newspaper	54.8	62.9	59.9	27.8	91.31**
	Driving By	6.7	37.1	35.8	58.5	95.23**
	Billboard	1.0	23.8	17.9	7.0	50.68**
	Television	17.5	48.0	53.7	9.3	173.07**

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market, the Jackson Farmers' Market, and the Memphis Farmers' Market
[a]Mail-back questionnaires distributed in July, with 112 returned.
[b]Mail-back questionnaires distributed June 20-26, with 253 returned.
[c]Mail-back questionnaires distributed July 18-24, with 315 returned.
[d]Mail-back questionnaires distributed in July, with 358 returned.
[e]Based on the number of responses to a particular question.
[f]Respondents could answer more than once.
**Statistically significant at the .05 probability level.

popular. The Jackson and Memphis markets are not open on Sundays. The favorite time of day to shop varied significantly between each market. Jackson and Memphis customers' preferred from 6 to 10 a.m. to frequent their respective markets, though Memphis was relatively consistent for every time range of morning, mid-morning, and afternoon/evening. Higher proportions of shoppers in the two western markets came to the establishment alone.

In Knoxville, customers tended to travel further than their western counterparts. Approximately three-fifths of the Jackson and Memphis respondents live within five miles or less from their respective markets. Each market area had a different source of information they used. In Jackson, word-of-mouth, followed by the newspaper, a distant second, were the mediums of choice. In Knox County, the newspaper and television were what respondents turned to. In Memphis, driving by and word-of-mouth were the top sources for finding out about the market.

Interestingly, there was a significant difference in whether shoppers made a purchase or not (Table 12). Knoxville customers bought less frequently than their Jackson and Memphis counterparts. Jackson respondents spent the least of the three (average: $9.20). Their purchases, however, were more likely to be an addition to their usual food shopping. The western markets were more interested in purchasing fresh vegetables than the Knoxville market. Supplementing their regular shopping was the popular choice among all three markets, though Jackson and Memphis were more interested in doing both canning/freezing activities and supplementing their weekly supermarket trips. Jackson and Memphis had higher average number of visits (Jackson 11.2, Memphis 12.7) than

TABLE 12
CHI-SQUARE RESULTS ON PURCHASES FOR THE JACKSON, KNOXVILLE (WEEKS 1 AND 2), AND MEMPHIS FARMERS' MARKETS

ITEM		FARMERS' MARKET SHOPPERS JACKSON[a]	WEEK 1[b]	WEEK 2[c]	MEMPHIS[d]	CHI-SQUARE
		Percent[e]				
MADE A PURCHASE:	Yes	99.1	94.1	95.6	98.6	
	No	0.9	5.9	4.4	1.4	12.18**
AMOUNT SPENT: (Dollars)	0.01-5	34.6	24.8	20.3	20.5	
	5.01-10	35.5	30.8	30.7	32.5	
	10.01-20	25.2	32.1	28.6	34.0	
	Over 20	4.7	12.4	20.3	13.0	27.34**
	AVERAGE	9.2	12.4	17.2	13.0	
PURCHASE CHOICE:	Substitute	26.4	56.2	48.0	47.6	
	Additional	72.6	42.5	49.3	50.3	
	Both	0.9	1.3	2.7	2.1	28.95**
INTERESTED IN:[f]	Fruits	82.1	93.2	90.2	89.0	10.42**
	Vegetables	99.1	95.2	96.8	98.6	7.85**
	Flowers	7.1	19.2	16.8	12.1	12.11**
	Plants	6.3	23.2	19.0	13.8	19.48**
	Crafts	2.7	12.0	8.3	4.6	15.78**
	Other[g]	5.4	6.8	9.5	8.6	2.69
WHAT FOR:	Processing	15.6	8.1	14.4	11.0	
	Supplement	71.6	83.9	74.4	76.9	
	Both	12.8	8.1	11.2	12.1	11.19*
NUMBER OF VISITS:	1-5	33.3	48.7	48.9	21.5	
	6-10	27.3	30.1	30.6	32.4	
	11-20	30.3	16.6	16.9	33.1	
	21 or more	9.1	4.7	3.7	13.0	73.15**
	Average	11.2	7.8	7.3	12.7	

Source: Survey of shoppers visiting the Knox County Regional Farmers' Market, the Jackson Farmers' Market, and the Memphis Farmers' Market
[a]Mail-back questionnaires distributed in July, with 112 returned.
[b]Mail-back questionnaires distributed June 20-26, with 253 returned.
[c]Mail-back questionnaires distributed July 18-24, with 315 returned.
[d]Mail-back questionnaires distributed in July, with 348 returned.
[e]Based on the number of responses to a particular question.
[f]Respondents could answer more than once.
[g]Includes Baked goods, Meats, Ice cream, etc.
*Statistically significant at the .10 probability level.
**Statistically significant at the .05 probability level.

Knoxville (Week 1 - 7.8, Week 2 - 7.3). The customers in the western areas tend to visit up to twenty times. (It should be noted that the Agricenter complex has been in operation for five years, time for people to have become aware of and frequent the facility.)

The products purchased were significantly different in Jackson, Knoxville, and Memphis, except for fruits (Table 13). The customers bought a diverse variety of vegetables, plants, crafts, and other food, (e.g. ice cream, jams). More respondents, proportionally, planned to shop at the Jackson farmers' market, than in Memphis and Knoxville. The frequency of shoppers' visits significantly differed as well. The western market shoppers tended to visit weekly, while Knoxville respondents prefer once every two weeks.

Question 14 was a list of additions/changes that customers would like to see. Parking was a major concern for Jackson respondents, significantly so. There was no difference in responses for crafts earlier hours, and service. These categories generally had a lower amount of responses. A greater proportion of persons in Jackson and Knoxville-week 2 wanted a change in some aspect of plants. Memphis and Knoxville-week 1 only had response rates of 6.1 and 8.1 percent, respectively, while Jackson and Knoxville-week 2 had 12.9 and 11.4 percent, respectively, indicate a need for a change. The markets differed significantly among the vendor, prices, open later, produce, and events criteria. In Jackson and Memphis, approximately fifty percent of the respondents marked this category, yet two-thirds in Knoxville-week 1 and three-fifths in Knoxville-week 2 of the shoppers felt this category needed improvement. Prices were more of a concern for Knoxville and Memphis than Jackson.

TABLE 13
CHI-SQUARE RESULTS OF CHANGES TO THE MARKET FOR JACKSON, KNOXVILLE (WEEKS 1 AND 2), AND MEMPHIS

ITEM		FARMERS' MARKET SHOPPPERS JACKSON[a]	WEEK 1[b]	WEEK 2[c]	MEMPHIS[d]	CHI-SQUARE
		Percent[e]				
ITEMS PURCHASED:						
	Vegetables	91.9	84.5	90.0	94.4	16.35**
	Plants	0.9	13.4	4.7	3.5	33.23**
	Fruits	67.6	75.3	71.7	76.6	4.61
	Crafts	0.9	3.8	1.7	0.9	7.35*
	Other Food[f]	8.1	20.1	25.0	26.3	17.98**
PLAN TO VISIT:						
	Weekly	72.8	33.9	36.6	66.8	
	Every two weeks	22.3	43.2	36.1	26.1	
	Monthly	4.9	22.8	27.3	7.2	98.46**
THINGS TO CHANGE:						
	Parking	55.9	0.0	0.0	18.6	234.81**
	Vendors	48.4	64.7	60.8	52.7	11.53**
	Crafts	11.8	9.1	8.4	6.5	2.94
	Plants	12.9	8.1	11.4	6.1	6.51*
	Early hours	2.2	4.5	7.6	4.3	5.28
	Prices	22.6	45.3	41.8	39.4	14.65**
	Later hours	12.9	19.0	18.6	28.3	13.84**
	Service	1.1	5.4	5.9	2.9	6.01
	Produce	24.7	35.3	33.8	25.8	7.94**
	Events	8.6	9.5	6.3	1.4	16.78**

Source: Survey of shoppers visiting the Jackson Farmers' Market, the Knox County Regional Farmers' Market, and the Memphis Farmers' Market
[a]Mail-back questionnaire distributed in July, with 112 returned.
[b]Mail-back questionnaire distributed June 20-26, with 253 returned.
[c]Mail-back quesitonnaire distributed July 18-24, with 315 returned.
[d]Mail-back questionnaire distributed in July, with 348 returned.
[e]Based on the number of respondents.
[f]Includes ice cream, breads, jams, honey, etc.
*Statistically significant at the .10 probability level.
**Statistically significant at the .05 probability level.

Keeping the market open later was an important issue for Memphis shoppers (28 percent) compared to Jackson (13 percent) and Knoxville (19 percent). Increasing the amount of produce available mattered more to Knoxville respondents than the western markets. Having events was least important for Memphis (11.4 percent) and most important for Knoxville-week 1 (9.5 percent).

The comparisons of farmers' markets to supermarkets on seven characteristics was significantly varied (Table 14). Farmers' markets were rated better on flavor in all three markets. The incongruence occurred in the same category, where approximately only one percent of shoppers from Jackson and Memphis indicated supermarkets were better for this attribute. Knoxville shoppers were less satisfied, with 3.4 and 1.7 percent (week 1 and 2, respectively) ranking the grocery stores superior. More of Knox respondents also had higher percentages of don't knows (6.4, 4.8). Though farmers' market prices were ranked better than supermarkets, more Memphis and Knoxville shoppers felt stores have better prices, similar prices, or they just don't know. Freshness had varied responses. The supermarkets in Knoxville apparently rate better than in Jackson and Memphis. More respondents in Memphis and Jackson felt stores and the farmers' markets offered the same in fresh produce. "Don't know" was marked by larger proportions of shoppers for Knoxville-week 1. For size, color, nutrition, and shape, Jackson was significantly lower in the same and don't know categories. Memphis had 6.2 percent of its respondents indicate that supermarkets have better sized produce. Knoxville and Memphis shoppers alike felt the grocery store had excellent coloring versus the market.

TABLE 14
CHI-SQUARE RESULTS OF ATTRIBUTE COMPARISONS
FOR THE JACKSON, KNOXVILLE (WEEKS 1 AND 2), AND MEMPHIS FARMERS' MARKETS

ITEM		FARMERS' MARKET SHOPPPERS				CHI-SQUARE
		JACKSON[a]	WEEK 1[b]	WEEK 2[c]	MEMPHIS[d]	
		Percent[e]				
FLAVOR:	Supermarket[f]	0.9	3.4	1.7	0.6	
	Farmers' Market	90.7	78.4	84.0	87.5	
	Same	0.9	7.2	5.4	6.5	
	Don't Know	0.9	6.4	4.8	1.8	27.21**
PRICE:	Supermarket[f]	3.7	13.6	7.5	14.2	
	Farmers' Market	79.4	51.3	58.8	58.2	
	Same	9.4	21.2	21.1	18.1	
	Don't Know	0.9	8.9	5.8	4.5	40.71**
FRESHNESS:	Supermarket[f]	0.9	4.2	2.7	0.9	
	Farmers' Market	97.5	81.4	89.1	92.6	
	Same	4.7	6.4	4.4	4.8	
	Don't Know	0.0	4.7	1.7	0.6	29.59**
SIZE:	Supermarket[f]	3.7	3.0	3.4	6.2	
	Farmers' Market	71.0	53.0	57.8	56.1	
	Same	11.2	22.0	21.8	22.9	
	Don't Know	1.9	10.6	7.1	6.8	24.79**
COLOR:	Supermarket[f]	1.9	4.7	3.7	3.9	
	Farmers' Market	67.3	53.0	57.5	62.3	
	Same	9.4	22.0	21.4	19.6	
	Don't Know	2.8	8.9	7.5	5.3	24.86**
NUTRITION:	Supermarket[f]	0.0	1.7	1.7	1.2	
	Farmers' Market	69.2	48.7	52.7	57.0	
	Same	10.3	28.0	22.1	21.1	
	Don't Know	5.6	11.4	14.0	10.4	26.28**
SHAPE:	Supermarket[f]	2.8	5.1	4.1	8.3	
	Farmers' Market	61.7	44.5	45.6	45.4	
	Same	11.2	25.4	26.2	25.5	
	Don't Know	3.7	11.4	11.2	9.5	31.62**
QUALITY:	Better[g]	52.0	26.2	30.6	31.0	
	Same	42.0	54.4	53.2	60.9	
	Worse	4.0	13.3	13.4	5.7	40.29**
PRICE:	Better[g]	26.0	21.5	20.4	9.8	
	Same	54.0	53.9	58.3	58.9	
	Worse	15.0	15.4	11.6	25.3	36.58**
SELECTION:	Better[g]	56.0	30.3	35.2	45.5	
	Same	33.0	35.4	34.7	42.0	
	Worse	7.0	27.7	26.4	10.8	57.92**
SERVICE:	Better[g]	47.0	24.6	25.0	25.6	
	Same	49.0	62.1	66.2	67.7	
	Worse	1.0	6.2	3.7	3.4	28.87**

Source: Survey of shoppers visiting the Jackson, Knoxville, and Memphis Farmers' Market
[a]Mail-back questionnaire distributed in July, with 112 returned.
[b]Mail-back questionnaire distributed June 20-26, with 253 returned.
[c]Mail-back quesitonnaire distributed July 18-24, with 315 returned.
[d]Mail-back questionnaire distributed in July, with 348 returned.
[e]Based on the number of respondents.
[f]Supermarket is better, farmers' market is better, they are the same.
[g]1993 was better than, the same as, or worse than 1992.
**Statistically significant at the .05 probability level.

The three markets were rated significantly different on quality, price, selection, and service. In this comparison of 1993 to 1992, Memphis and Knoxville had greater percentages of shoppers mark that their respective markets had deteriorated in quality and selection. Jackson, on the other hand, had more people respond that quality and selection had improved over the last year. Service and price were rated as worse between years in Knoxville and Memphis compared to Jackson.

REGRESSION RESULTS

To generate the data for the following regressions, a coding protocol had to be established for the transformation of individual question responses into measures suitable for regression analysis. Table 15 is a summary of the coding used for the three survey instruments. The simple responses of yes and no were coded as 1 and 0, respectively. There were four open-ended questions that automatically generated numerical responses: number of visits to the market; time of day; how much was spent; and miles travelled one way to the market. Another open-ended question, changes you want to see in the market, was classified from 0 to 7 (for Knoxville) depending on the problem listed. The range was as follows: 0 - no comment; 1 - some change in prices; 2 - dealing with the vendors; 3 - problem with the location of the market; 4 - "Nothing" or "Fine like it is" specifically stated; 5 - some change in the facilities, usually air conditioning; 6 - some change in signs; and 7 - a change in hours of operation. Additional concerns of recycling in Memphis and parking in Jackson led to slightly different coding values for those markets.

TABLE 15
CODING FOR SIGNIFICANT VARIABLES IN OLS AND PROBIT REGRESSIONS FOR JACKSON, KNOXVILLE (WEEK 1 AND 2), AND MEMPHIS FARMERS' MARKETS

QUESTION	CODING
2A. Quality B. Service (Knoxville only)	0. No opinion/don't know 1. This year better (1993) 2. Same as last year 3. Last year was better (1992)
3A. Radio (Memphis only) B. Billboard (Knoxville only)	0. Have not heard about the market through this source 1. Heard about the farmers' market through this source
4A. Reason for visit (Jackson & Knoxville)	0. Other 1. Visited to or from work
5B. Time of Day (Memphis & Knoxville)	Time respondents visted the the market, e.g. 12.00 or 1.15
6. Purchased: (Memphis & Knoxville) A. Vegetables B. Plants C. Fruits D. Crafts E. Other food products	0. Did not purchase from this product group 1. Purchased item(s) from this category
7. Description of purchase (Knoxville only)	1. Purchases are substitute for normal shopping trip 2. Purchases are more than a normal shopping trip 3. Both substitute/supplement
7A. Description of purchase (Jackson only)	0. Other 1. Purchases are more than a normal shopping trip
10. Do you plan to shop (Knoxville only)	0. No 1. Yes
11. Accompanied by: (Jackson only) (Jackson only) (Memphis only)	0. Other 1. With spouse 0. Other 1. With spouse and children 0. Other 1. With friends/relatives

TABLE 15 (CONTINUED)

QUESTION	CODING
13. Purchase interest (Knoxville only)	0. Other 1. Small quantities
14A. Later hours (Jackson only) B. More vegetables (Knoxville only)	0. No 1. Yes
16. Changes (Knoxville only)	0. No opinion/no comment 1. Prices 2. Vendors 3. Location 4. Nothing 5. Facilities 6. Signs 7. Hours
17. Employment (Jackson only)	0. Other 1. Full/Part-time employment
18. Gender (Knoxville only)	1. Female 2. Male
19. Race (Knoxville only)	1. African-American 2. Asian 3. White 4. Hispanic 5. Other
20. Age of shopper (Jackson only) (Jackson only)	0. Other 1. Age 45-54 0. Other 1. Age over 65
21. Household size (Memphis only)	Open-ended (up to 10 people)
23. Education (Memphis only)	0. Other 1. Started high school or high school graduate
24. Income (Jackson & Knoxville)	0. Other 1. Make over $56,000

Question numbers refer to the survey question number (see Appendix A) and letters denote special coding group.

There were a few instances where the respondent indicated a 1 or a 0 that were not specifically labelled yes or no. These are how they found out about the market (friend, radio, newspaper, driving by on highway, billboard, and television), what did you purchase, and what products are of interest to you. The last question of this type is additions or changes to the market, which has a list of twelve options. These included more parking spaces, more farmers selling produce, more crafts, more shrubs/flowers, open earlier in morning, lower prices, open later in evening, increased security, improved customer service, more fruits and vegetables, more entertainment, and other.

The remaining questions had multiple choice responses to check. If the multiple response was found to be significant, it was broken down into its individual components and tested as a 1/0 response to find category effects. Question two dealt with a comparison between the 1992 and 1993 market seasons as to which year was better or the same with respect to quality, price, selection, and service. Question four was the reason they visited the market. For Jackson and Memphis, there were six choices. They were special trip to see demonstration/event, stopped on the way to or from church, stopped on the way to or from work, part of a shopping trip to or from other stores, determined by tour-bus leader, and special shopping trip to the farmers' market. For Knoxville, the option of part of a shopping trip to or from East Town Mall was added because of the market's location next to this popular shopping establishment.

Questions seven and thirteen are very similar in nature. Both pertain to how the farmers' market purchase is classified. Respondents (Q7) were told to indicate what choice best describes your purchases at

the farmers' market. The first option was a substitute for a normal grocery trip. The other was the farmers' market purchase was a supplement to their normal supermarket trip. Some listed both as a response, which was coded as a 3. In question 13, they were asked to define their interest in purchasing these fruits or vegetables in large or small quantities. Again, some listed both, which was coded the same as previously mentioned above. Question eleven dealt with whether the patron was shopping alone, with their spouses, with their children, with both spouses and children, or with friends or relatives.

The socioeconomic questions also required some coding. Employment was listed as full-time homemaker, full-time employment, part-time employment, retired, student, or unemployed. Race was categorized as African American, Asian, White, Hispanic, and Other. There were six options for age, which were under 25, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and over 65. Education listed some high school, high school degree, some college schooling, college degree. Income had six categories, which were: under $15,000; $16,000 to $25,000; $26,000 to $35,000; $36,000 to $45,000; $46,000 to $55,000; and over $56,000.

Jackson

A probit regression could not be calculated using the Jackson data because only one person did not make a purchase. Therefore, there is no potential for adjusting for any selection bias, and the results should be interpreted in terms of patrons who intended to purchase. An ordinary least squares (OLS) regression was computed for the dependent variable

amount spent. Consequently, an initial equation for the model was calculated using the independent variables advertising medium, reason for visit, day of the week, time of day, what was purchased, type of purchase, distance travelled, shopping companion, purchase use, age, household size, education, and household income.

As expected, some of the coefficients had insignificant effects on the amount spent. The resulting probability values obtained from these preliminary results were used to delete variables from subsequent regressions. But further estimation required implementation of a careful procedure in an attempt to reduce the presence of a pretest bias. Variables whose t-values had probability values of more than .10 were omitted, and a new regression equation was estimated. When additional variables were introduced into the model, tests for multicollinearity were employed. This entailed looking for changes in estimated probability values and little change in overall fit. Some additional variables were found to be significant as well and are included in the following discussion.

This process led to nine variables that were found to influence the amount spent significantly. They are visiting the market to/from work, purchase was more than the usual supermarket trip, shopping with spouse, shopping with spouse and children, wanting later hours, working full- or part-time, the ages 45-54 and over 65, and coming from a household that earns over $56,000 per year. All were significant at the .10 level (Table 16). The model explains 50 percent of the variation in the amount purchased. The equation explained this variation significantly with an 8.8 F-value.

TABLE 16
OLS AND PROBIT REGRESSION RESULTS
FOR JACKSON, KNOXVILLE (WEEKS 1 AND 2),
MEMPHIS FARMERS' MARKETS

	AMOUNT SPENT REGRESSIONS		KNOXVILLE			
			SELECTION		AMOUNT SPENT	
VARIABLE	JACKSON	MEMPHIS	WEEK 1	WEEK 2	WEEK 1	WEEK 2
Constant	-0.69	-4.91	0.87	-0.87	3.21	-31.05
	(-0.41)[a]	(-1.84)*	(3.38)*	(-1.27)	(1.63)*	(-3.14)*
Quality					2.66	
					(2.52)*	
Service					-4.06	
					(-3.66)*	
Radio Ad		3.34				
		(2.31)*				
Billboard Ad						19.32
						(2.46)*
Time of Day		0.36	0.09			
		(2.61)*	(2.19)*			
Vegetables		6.34			3.89	
		(2.92)*			(2.59)*	
Plants		12.30			14.76	
		(4.58)*			(9.35)*	
Fruits		3.44			5.11	
		(6.08)*			(4.23)*	
Crafts		29.14			7.78	
		(6.08)*			(2.86)*	
Other Foods		4.88			6.10	
		(4.49)*			(4.59)*	
To/From Work	-3.93		-1.34			
	(-1.64)*		(-2.37)*			
Type of Purchase				1.78		20.15
				(5.03)*		(3.69)*
More Than Regular	4.12					
	(3.15)*					
With Spouse	3.91					
	(2.73)*					
With Spouse/Children	5.66					
	(3.11)*					
With Friends/Relatives		2.58				
		(1.99)*				
Later Hours Needed	5.84					
	(3.28)*					
More Vegetables						11.84
						(1.76)*
Changes to the Market				0.59		5.55
				(2.25)*		(3.42)*
Work Full-time	3.45					
	(2.60)*					
Age 45-54	5.05					
	(3.15)*					
Age over 65	4.66					
	(3.21)*					
Size of Household		1.12				
		(2.76)*				
Education (high school)		2.08				
		(1.73)*				
Income over $56,000	3.81				3.88	
	(2.66)*				(2.98)*	

TABLE 16 (CONTINUED)

ITEM	AMOUNT SPENT REGRESSIONS		KNOXVILLE			
			SELECTION		AMOUNT SPENT	
	JACKSON	MEMPHIS	WEEK 1	WEEK 2	WEEK 1	WEEK 2
Plan to Shop			0.92 (2.92)*			
Small Quantities			-0.79 (-2.02)*	-0.94 (-1.68)*		
Gender				0.63 (2.78)*		
Race				-0.95 (-2.11)*		
Lambda					-8.50 (-2.80)*	38.20 (1.78)*
R^2	0.50	0.34			0.41	0.10
F-value	8.80*	14.54*			17.59*	6.91*
Log Likelihood			-43.73	-27.49	-828.17	-1603.90
Chi-square			26.40*	59.56*	135.52*	39.33*
Percent Predicted Correctly			93.30	94.90		

[a]t-values are in parentheses
*significant at the .10 level

Only the reason for visiting had a negative coefficient. More specifically, a person going to or from work typically bought $3.93 less than someone purchasing for any other reason, e.g. a special trip. This is interesting because the market is located near the business sector, where people are more likely to visit while going to and from work or on their lunch hours; therefore, less is spent because the products are purchased more frequently. A full- or part-time employee is estimated to spend $3.45 more compared to a person who is a homemaker or retired.

Shoppers spent $4.12 more if this purchase was considered to be more than what is bought on their normal supermarket trip. A customer accompanied by his spouse purchased $3.91 over a single person's expenditure. A family trip (spouse and children) resulted in $5.66 of additional sales. A patron between the ages of 45-54 spent $5.05 more than younger patrons, while someone over 65 purchased an additional $4.66

worth of products. If a respondent indicated a need for later market hours, the person spent $5.84 more. Lastly, a respondent who was a member of a household earning in excess of $56,000 annually spent $3.81 more than lower income households.

Knoxville - Week 1

An initial probit equation was calculated using the independent variables advertising medium, reason for visit, day of the week, time of day, what was purchased, type of purchase, distance travelled, with whom shopping, purchase use, age, household size, education, and household income. As expected, some of the variables had insignificant effects on the probability of purchase. Probability values obtained from these preliminary iterations were used to identify which variables to delete from subsequent regressions. Further estimation required implementation of a careful procedure in an attempt to reduce the effect of a pretest bias. Variables whose t-values had probability values of more than .10 were omitted, and a new regression equation was estimated. When additional variables were introduced into the model tests for multicollinearity were employed. This entailed looking for changes in estimated probability values and little change in overall fit. Some additional variables were found to be significant as well and are included in the following discussion.

The computed chi-square lead to the inference of a significant overall relationship as did the computed F value. The R^2 value indicates a relatively good fit of the data. A lower value is expected because many

factors affect a purchase decision and not all could be included on a questionnaire or even be known to the respondent, e.g. mood. The percent correctly predicted was 93.3.

Four variables were found to be significant in predicting the probability of purchase (Table 16). A shopper is more likely to buy something before twelve o'clock, than someone in the afternoon. If the reason for the visit was any other than to/from work, the respondent was more likely to purchase. An intention to frequent the farmers' market on a regular basis led to a greater probability of making a purchase. A respondent who indicated that he was only interested in buying small supplemental quantities, is less likely to buy any merchandise. This may be a result of the Knox County Regional Farmers' Market's distance away from the main population center in West Knoxville.

A significant overall fit for the week 1 expenditure equation was obtained, as reflected in the chi-square and F values. The equation explained 41 percent of the variation in the amount spent.

Eight variables were significant determinants of how much was spent during a visit. Lambda was found to be significant at the .10 level. The products purchased added the most to the dollar amount, in general. Shoppers who purchased plants spent $14.76 more than those who did not. Craft purchases raised the total by $7.78. Buying other food (e.g. ice cream, bread, jams) increased the amount spent by $6.10. Fruits added $5.11 to the average bill of the shopper. If a patron indicated a vegetable purchase, total sales increased by $3.89. A possible explanation is that vegetables are bought on a more frequent interval than the other products; by decreasing the amount spent on this product

category during each visit.

Households with annual incomes of over $56,000 spent $3.88 more on farmers' market products than any of the other income group. This was the only significant socioeconomic variable. Two opinion factors that were found to influence the amount spent maybe be related to a person's socioeconomic characteristics. If a shopper felt that the quality of products was better in 1992, he spent $7.98 more. This seems to be a contradiction because one would expect that a person would spend more if he felt quality, price, selection, and service were improving over the years. A possible explanation for this occurrence is that the farmers' market merchandise quality may have been worse than the previous year, but better than what was currently available at other sources. This may be an area for further study. Rating of service competencies follows the general assumption given above. If a shopper indicated that service had improved, that patron spent $4.06 less than those with no opinion and up to $12.18 less for those respondents who thought 1992 had better service.

Knoxville - Week 2

An initial probit equation for the model was calculated using the independent variables advertising medium, reason for visit, day of the week, time of day, what was purchased, type of purchase, distance travelled, person with whom shopping, purchase use, age, household size, education, and household income. As expected, some of the variables had insignificant effects on the probability of purchase and the amount spent. The resulting probability values obtained from these preliminary

iterations were used to identify which variables to delete from subsequent regressions. Further estimation required implementation of a careful procedure in an attempt to reduce the effect of a pretest bias. Variables whose t-values had a probability value of more than .10 were omitted, and a new regression equation was estimated. When additional variables were introduced into the model, tests for multicollinearity were employed. This entailed looking for changes in estimated probability values, and little change in overall fit. Some additional variables were found to be significant as well and are included in the following discussion.

The measures of overall fit led to inferences of a significant probability of choice equation. The computed chi-square is significant and the percent correctly predicted was 94.9.

Five variables were found to be significant in predicting the probability of purchase. If the customer indicated his purchase to be a substitute or supplement to the regular shopping trip or both, he most likely bought some produce, crafts, plants, or other products. In comparison, the shopper was less likely to buy if he was only looking for small quantities as a seasonal alternative to supermarkets. A respondent who indicated a change was needed in the farmers' market (question 16) had a higher probability of making a purchase than those who had no opinion. Therefore, a respondent wanting changes may have more interest in shopping/purchasing at the market than one who did not comment. White shoppers had a higher probability of buying something than African-American or Asian shoppers. Male respondents were less likely to make a purchase than their female counterparts.

Table 16 presents the expenditure regression for Knoxville - Week 2.

The computed chi-square led to the inference of a significant overall relationship. The R^2 value indicates that ten percent of the variation in the amount spent has been explained by the equation. The fit was significant (F value = 6.9). A lower value is expected because many factors affect a purchase decision and not all could be included on a questionnaire, e.g. produce is in season, or even be known to the respondent (mood).

Four variables were significant determinants of how much was spent during a visit. Lambda was found to be significant at the .10 level. A shopper who remembered a billboard advertisement spent an additional $19.32 versus a respondent who did not recall one. A patron who made a purchase which was considered to be more than a regular supermarket trip spent $20.15 over respondents who were on a normal trip, and those who made substitute/supplement spent $40.30 more.

Respondents who wanted more fresh produce spent $11.84 more than other shoppers. Other changes, e.g. more crafts, had no significant effect. Shoppers who indicated they would like to see a change in some aspect of the market (answered in their own words) more likely spent $5.55 more than a patron who had no opinion. This is consistent with the view that shoppers who wanted change were also ones who purchased more. This may be an area for further study.

Memphis

A probit regression could not be calculated using the Memphis data because only five people did not make a purchase. Therefore, no

potential was present for adjusting for any selection bias, and the following results should be interpreted in terms of patrons who intended to purchase. Consequently, an initial OLS equation for the amount spent was calculated using the independent variables advertising medium, reason for visit, day of the week, time of day, what was purchased, type of purchase, distance travelled, shopping companion, purchase use, age, household size, education, and household income.

As expected, some of the variables had insignificant effects on the amount spent. The resulting probability values obtained from these preliminary results were used to delete variables from subsequent regressions. Further estimation required implementation of a careful procedure in an attempt to reduce the presence of a pretest bias. A new regression equation was estimated, after variables whose t-values had probability values of more than .10 were omitted. When additional variables were introduced into the model, tests for multicollinearity were employed. This entailed looking for changes in estimated probability values and marginal change in overall fit. Some additional variables were also found to be significant and are included in the following discussion.

This process led to ten variables that were found to significantly influence the amount spent. They are hearing a radio ad, the time of day, what products were purchased (vegetables, plants, fruits, crafts, other food), with whom they were shopping, size of the household, and education. All were significant at the .10 level (Table 16). The model explains 34 percent of the variation in the purchase dollar amount. The equation explains this variation significantly with a 14.5 F value.

Part of the amount spent depends upon what products are bought.

Vegetables added $6.34 to the total dollar amount. Surprisingly if fruit was indicated as being part of the purchase, it only contributed $3.44 to the total amount. This may be an effect of the purchase interval, where fruit is bought more often, but in lesser amounts. Crafts increased the purchase amount by $29.14, and buying plants led to a $12.30 increase.

Time of day was significant. Shopping between 8 AM and 12 PM could increase the amount spent by $2.88 to $4.32, which is more than at 1 PM ($.36). If the respondent heard about the market through a radio advertisement, the amount spent was $3.34 greater than with any other media. When shopping with friends and relatives (other than spouse or children), the patron bought $2.58 more.

The larger the household, the larger the amount spent. Each additional person in a household is associated with an $1.12 increase in purchases. Persons who either attended high school and didn't graduate or those who had completed their high school education increased their purchases by $2.08.

CHAPTER V

SUMMARIES, IMPLICATIONS, AND FURTHER STUDY

SUMMARY OF THE STUDY

The purpose of direct marketing is to shorten the marketing channel between producer and consumer. Farmers' markets are one of the oldest direct marketing methods that still exist in today's society. They typically center around a permanent location or building where farmers bring their produce to sell to the local community.

There has been a resurgence of interest in farmers' markets. Part can be attributed to the increased demand for fresh fruits and vegetables. Produce demand has been rising while at-home food expenditures overall have been decreasing. A change in lifestyles and the socioeconomic composition of the population has partially influenced the desire to add more fresh produce to diets. The lifestyle modification pertinent to farmers' markets is the increased concern for one's health, which translates into an interest in the nutritional content of food. Consumption of fresh produce has also been affected by age distribution. Households with older members (over 50 years of age) tend to purchase more fresh produce than their younger counterparts. The result is that the share of the consumer's food dollar for fresh produce has been rising for an extended period of time.

In a more competitive marketplace, alternative shopping establishments compete with local groceries for consumer dollars. As a

result, a retail firm wants to find new ways to minimize its costs and increase revenues through better resource allocation. Customer information is an essential component of determining what marketing strategy to use. A profile of a typical farmers' market shopper would facilitate the design and implementation of promotional activities and the setting of operational guidelines.

The goal of this study was to determine what characteristics influence whether a local resident will shop a farmers' market and how much will be purchased while there. This was accomplished by collecting data through a questionnaire medium and analyzing the responses using comparison and regression techniques. The results should contribute to the efficiency of the direct fresh produce marketing system for consumers and producers by helping operators be more responsive to food shoppers. The specific objectives of the study were to determine:

1) the similarity between the farmers' market patrons and county residents;

2) the effect of special events on the likelihood of purchase and amount spent;

3) what sources of information were used by the patrons to find out about the farmers' market; and

4) if there is a difference in likelihood of purchase among shoppers at these farmers' markets (Jackson, Knoxville, and Memphis), and which socioeconomic characteristics are associated with spending more.

SUMMARY OF RESULTS

The populations surrounding each of the three markets are somewhat distinct in addition to the sizes of the metropolitan areas. Memphis and Jackson have higher county proportions of African Americans versus Knoxville. Jackson had a lower proportion of high school graduates than Knoxville and Memphis. Knoxville had a lower ratio of residents who have only some college education compared to Jackson and Memphis. There is some variation in the income distributions. Jackson has a relatively equal proportion of under $15,000 and over $35,000 households versus Knoxville and Memphis, which have higher percentages of upper income households.

Although the characteristics of county residents are different, the socioeconomic characteristics of the farmers' market patrons are similar with respect to several important measures. Shoppers tend to be white females. They are from one or two person households that make over $35,000 annually. Most are college educated, though in Jackson high school graduates are a relatively large representative group as well. There is some variation in the age of the patron, yet they are typically older than 45 years of age. Knoxville tends to have a greater majority of under forty shoppers. These differences may be a result of the locations of the farmers' markets in regard to their respective population centers. The Memphis and Knoxville establishments are situated outside the downtown metropolitan area versus Jackson, which is located in the center of town near many county office buildings.

The univariate analysis of week 1 and week 2 for Knoxville revealed

only minimal differences between the shoppers' characteristics. Proportionately more men visited the market during the week in June than the week in July. Relatively more patrons in week 1 were accompanied by their spouses. Week 2 shoppers had a higher percentage visiting with friends and relatives and a lower proportion visiting with their spouses. This change in percentages is consistent with more people vacationing and visiting family and friends in the summer.

People found out about the Knox County Regional Farmers' Market mainly through television and newspaper advertisements during both weeks. Billboards, however, were cited more often by the respondents in week 1. When July produce was available, shoppers visited earlier in the day and spent more. Spending more during July may be a result of customers' purchase intentions. Shoppers bought more plants and less vegetables in June versus July. When produce was in season, July patrons believed the farmers' market had better prices versus June respondents.

Although there were similarities in customer profiles, some differences among the three markets were found. Saturday was the most popular day to visit with 50 percent of Memphis customers choosing this day and the other markets' patrons ranked this day comparably at approximately 30 percent. Mondays and Tuesdays were commonly cited for Jackson as well (26.1 percent, 28.8 percent, respectively). Visiting between six and ten a.m. was the most frequent choice for Jackson shoppers. An afternoon trip was normal for patrons in Knoxville during June. Memphis customers had a higher preference for the early morning hours. Midmorning was their second choice. The Knoxville market during July drew people midmorning. The remaining shoppers were split almost

equally between early morning and evening hours. Jackson and Memphis shoppers tended to visit alone, while Knoxville shoppers visited the market with their spouses.

Most customers in Jackson and Memphis travelled between zero and ten miles, one way, to reach the market. Knoxville had the highest percentage of shoppers who drove over 15 miles. This is most likely due to the location of the market with respect to West Knoxville, where the largest proportion of the population is centered. Residents in all three markets typically learned about the outlets through friends and relatives. In Knoxville, television was a frequently cited source as well. Jackson and Knoxville shoppers noted the newspaper was a way they found out about the market. Driving by the establishment was cited by larger percentages of Knoxville and Memphis patrons versus Jackson's as the way they found out.

Jackson shoppers' purchases were usually in addition to their regular grocery trips. Relatively, Knoxville and Memphis shoppers were making substitutes purchases for their normal food shopping trips. Fruits and vegetables were the products of choice. Knoxville and Memphis shoppers also purchased other foods such as ice cream, jams, and butter. Fresh produce was the primary reason patrons were interested in visiting their respective markets. Customers in Knoxville were also looking to buy plants. These expenditures were generally supplementing the patrons' normal grocery purchases for Jackson and Memphis. In Knoxville, shoppers were equally buying as a substitute and as a supplement to their regular supermarket trips.

Jackson and Memphis shoppers spent on average less per visit than Knoxville respondents probably because patrons at the first two outlets

planned to shop weekly. In Knoxville for weeks 1 and 2, there were relatively even distributions between weekly visits, twice a month visits, and monthly visits. Jackson and Memphis patrons tended to visit more often than Knoxville shoppers. This discrepancy in number of visits could be attributed to the fact of where these two markets are located and though the Memphis market is not situated near downtown, it is located close to a large residential community. The changes customers at the three markets wanted to see were in number of vendors, prices, later hours, and more produce available. Jackson shoppers also wanted better and more parking spaces. Holding more events was cited by more Jackson and Knoxville patrons versus Memphis.

All respondents at the Jackson and Memphis farmers' markets made purchases while visiting. However, this was not the case for Knoxville. A few respondents for each week had not made a purchase.

Chi-square results of comparisons of weeks 1 and 2 Knoxville respondents revealed a few significant discrepancies. The patrons in June tended to shop in the afternoon with their spouses. They were looking during the second week to buy large quantities for processing purposes and less for supplemental reasons. More women shopped during the July week than in June. The results revealed that patrons during both weeks were essentially concerned about correcting the same problems.

The two-step Heckman procedure could only be used with the data from weeks 1 and 2 for Knoxville. Several variables were found to have significant effects on the probability of purchase, although the sets of variables were different. During June, the earlier a customer visited, the more likely he was to make a purchase. If the patron had made a

shopping plan, then he probably bought some merchandise. Interest in only small quantities or travelling to/from work led to a greater probability of not making a purchase. In July, if the shopper was a male, he most likely made a purchase while at the market. Yet, if the customer was non-African American, he was less likely to buy. Wanting a change in any aspect of the market increased the likelihood of purchase.

MARKETING IMPLICATIONS

Overall, each farmers' market under study is distinct from the other based on certain shopper characteristics, influences, and opinions. Though an overall marketing campaign can be developed based on the general shopper outline, the Jackson, Knoxville, and Memphis markets require somewhat individually targeted promotions to attract new customers. There were different indicators of how much was spent at the Jackson, Knoxville, and Memphis farmers' markets, which led to the following marketing suggestions.

Promotional activities for Jackson should emphasize the fun of a family outing because couples and families tended to spend more than single shoppers. This could be accomplished by billboards exhibiting a fair-type atmosphere. The Jackson Farmers' Market may wish to add a playground area for children to encourage parents to bring them along. A separate campaign should continue to support the attraction of downtown employees, which stresses the idea of bringing home fresh produce for dinner and as a healthy alternative for lunch. Distributing flyers to the surrounding businesses, with the themes "Refuel at the Farmers' Market" or

"Lunch Munchies," could be one option to attracting local employees. Another idea is to hold "brown bag" seminars in the retail building on various subjects, including business. An orientation toward the surrounding downtown community is an important focus because, though individual workers may spend less per visit, attracting more of this large patron resource should increase the overall amount spent at the market.

At the Knox County Regional Farmers' Market, male residents between the ages of 35 and 54 may be a potential segment for directing advertising of events, demonstrations, etc., with the intention of attracting them to visit the market. The classic tractor and motor showcase at the Peach Party in June should be continued. An extension could be to expand to include classic cars as well. Another idea would be to add a horseshoe pit as a place for the older patrons to play while their wives shopped.

Overall promotional activities could emphasize "going out to the Farmers' Market" as a place to take friends and relatives while they are visiting during the summer months. Another promotional campaign ought to emphasize some aspect of afternoon shopping during this period as a "Cool place to escape to" during lunch or after work. The results also suggest that in July, advertising support should stress the ease of buying bulk amounts of products. A possible newspaper ad for this theme would be an illustration of a classic 1950s car, whose trunk is filled to overflowing with produce from the market with the tagline "A Trunk Full of Treasures at the Farmers' Market." The advertising message could also contain information about buying corn, tomatoes, etc. at bulk prices for processing (e.g. canning and freezing).

For the Knox County Regional Farmers' Market, at the start of the

harvest period, the estimated expenditure equation has several marketing implications. The results suggest that the advertising content earlier in the growing season should stress plants and crafts in conjunction with the available produce. Selection of the appropriate media ought to be based on those which are read, listened to, or watched by residents who make over $56,000 a year. A possible route is to have a direct mailing to Knox County residents highlighting the Spring season at the farmers' market. Because residents typically use a shopping list, the mailing could be in bookmark format that is a list of things to do with the number one activity to accomplish is a visit the farmers' market. The bookmark would then, hopefully, remain in use in the household as a reminder that the market is there. An advertisement in the Knoxville News-Sentinel would be appropriate as well, because the paper reaches 73 percent of this largest segment of population (MORI Research). Another strategy is to develop a cooperative advertising program with East Town Mall (where 51 percent of the residents shop). The message should stress a "Full day of shopping fun at the mall" with a stop at the market to eat ice cream and pick up fresh fruits and vegetables for dinner (such as corn and tomatoes).

Perceptions of quality and service are important to these early shoppers. Knox County residents consider freshness and flavor to be very important (as determined by a study of county residents, which was conducted concurrently with the present study). Therefore, a required seminar on customer service/produce displays could be established for the participating vendors. A brochure could be developed for vendors illustrating effective methods of service and display. All promotions should stress the excellent quality and the friendly atmosphere of the

Knox County Farmers' Market. Another strategy is to produce a pamphlet or ad that explains the difference between grocery produce and the farmers' market produce. This brochure would inform patrons that products at the market are less uniform because they are closer to being ripe, prices are lower on damaged fruit that can still be used in processing, etc.

The results of the week 2 expenditure equation led to the following suggestions. A lively billboard campaign may help entice residents to visit and spend more while at the market. Messages should stress the "Fresh Addition/Alternative" to supermarkets because respondents who made supplemental purchases spent more than patrons who used the farmers' market for their only source of fresh produce.

Differences between the two weeks could be attributed to having an event. A stronger effect, however, may be having produce in season. Special events tended to draw a larger number of shoppers. Creating a festival-type atmosphere may encourage residents to visit and to do so more often. This may offset the poor location of the Knox County Regional Farmers' Market with respect to the population center (West Knoxville).

Promotional activities for Memphis should entice people to visit in the mornings. Advertisements should stress the plant and craft options of the market, in addition to announcing the available vegetables and fruits that are in season. A potential public relations article could be centered on a popular vendor, such as the woman who sells raspberries and blackberries, to draw attention to the quality and availability at the farmers' market. While a larger percentage of shoppers visit with their spouses, an image campaign could emphasize the market as a place to meet with friends and relatives. The related ads need to incorporate the

additional activities occurring at the Agricenter complex. Television and radio mediums should be selected to target large size households who have at least some high school education because this type of household is less likely to spend time reading a newspaper.

AREAS FOR FURTHER STUDY

A revision of the current questionnaire could be conducted. It may even be implemented yearly to follow trends in customer opinions and characteristics. For easier comparison with census data, the socioeconomic categories would be modelled after the government's census classifications. Another open-ended question could be added to ask the shoppers why they visit the market. This may provide insights into what needs to be advertised in future campaigns. The question should be balanced with a multiple choice question to check for consistency of reasons. Instead of just listing the hour visited, categories would be listed to provide easier analysis. This would allow a more consistent analysis of the effect of time on purchase amount. A section might be added to inquire into the magazines/newspapers read, the radio stations listened to, and the television shows watched. An example for radio (in Knoxville) is:

> Do you regularly listen to any of the following stations (mark only one):
> __WUTK __Q102 __WIVK __Z93, etc.

An expansion of the initial study could be developed for Jackson and Memphis. As was done for Knoxville, a mail-back questionnaire could be sent to county residents. Questions would inquire about shopping habits

and importance of fresh produce attributes as well as asking about experiences with direct marketing outlets (e.g., pick-your-own, roadside stand, etc.) and opinions of these exposures. Also, a socioeconomic section would be included. The results from this study of county residents could be compared to the current study results to note similarities and differences.

Further analysis could include an implementation of the suggested marketing campaigns. After one farmers' market season, a survey of shoppers and residents (with either a questionnaire or telephone survey) would be used to evaluate the effectiveness of the promotion and advertising. The results would aid in determining which promotions to continue running and which to drop.

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APPENDICES

APPENDIX A

QUESTIONNAIRE

Knox County Regional Farmers' Market
SHOPPER QUESTIONNAIRE
Your answers to the following questions will be kept strictly confidential.

1. *Was this your first visit to the Knox County Regional Farmers' Market?*
___ yes ___ no

2. *In 1992, how many times did you visit the market?* _____

If you visited the market in 1992, how does this year's market compare to last year's market on the basis of:

	This year better	Same as last year	Last year was better
Quality	_____	_____	_____
Price	_____	_____	_____
Selection	_____	_____	_____
Service	_____	_____	_____

3. *Have you heard about the Knox County Regional Farmers' Market from any of the following? (Please check all that apply)*

___ Friend ___ Radio ___ Newspaper
___ Driving by on highway ___ Billboard ___ Television

4. *On the day you received this questionnaire at the market, which of the following choices best describes that visit to the market? (please check one of the following)*

___ Part of a shopping trip to or from East Town Mall
___ Special trip to see demonstration/event
___ Stopped on the way to or from church
___ Stopped on the way to or from work
___ Part of a shopping trip to or from other stores
___ Determined by tour-bus leader
___ Special shopping trip to the farmers' market

5. *What day of the week and time of day did you visit this market?*
_____ day of week
_____ time of day

6. *Did you make a purchase on the day you received this questionnaire?*
__ yes ___ no

If yes, what did you purchase?
____ Vegetables ____ Flowers or plants
____ Fruits ____ Craft products
____ Other food products

and how much did you spend in total on that particular visit?
$_____

7. *Which of the following choices best describes your purchases at the farmers' market? (check one)*

_____ Purchases are usually a substitute for what you would normally buy at your favorite supermarket, or

_____ Purchases are usually more than what you would normally buy at your favorite supermarket.

8. *How far is your home from this market?* _____ miles

9. *What is the zip code for your home?* _____

10. *Do you plan to shop at the Knox County Regional Farmers' Market on a regular basis?*

___ yes ___ no

If yes, how frequently? ____ Weekly ____ Twice a month
____ Monthly

If no, why not? ____ too far to drive ____ poor service
____ prices too high
____ equal or better quality products available elsewhere
____ OK for occasional visit, but not on a regular basis
____ other _____

11. *On the day you received this questionnaire, were you shopping: (check one)*

___ Alone ___ With a spouse ___ With children
___ With spouse and children ___ With a friend(s) or relative(s)

12. *What products are you most interested in purchasing from this farmers' market?*

___ Fruits ___ Vegetables ___ Flowers ___ Plants ___ Crafts
___ Other _____

13. *If you checked fruits or vegetables in the previous question, are you most interested in purchasing these fruits or vegetables in: (check one)*

___ large quantities for home-canning or freezing.
___ small quantities as a seasonal alternative to supermarkets.

14. *What needs to be added or changed to make this farmers' market a place where you would shop on a regular basis? (please check all that apply)*

____ More parking space
____ More crafts
____ Open earlier in morning
____ Open later in evening
____ Improved customer service
____ More entertainment
____ More farmers selling produce
____ More shrubs/flowers
____ Lower prices
____ Increased security
____ More fruits and vegetables
____ Other _____

15. *For each of the following product attributes, which outlet do you consider the best source of fresh produce during the summer months?*

	Supermarket	Farmers' Market	Same	Don't Know
Flavor	_____	_____	_____	_____
Price	_____	_____	_____	_____
Freshness	_____	_____	_____	_____
Size	_____	_____	_____	_____
Color	_____	_____	_____	_____
Nutrition	_____	_____	_____	_____
Shape	_____	_____	_____	_____

16. *If you could change something about the farmers' market to make it better, what would you change?* _____

_____

BACKGROUND INFORMATION

17. *Employment of principal food shopper in your household:*
___ Full-time homemaker ___ Full-time employment ___ Part-time employment
___ Retired ___ Student ___ Unemployed

18. *Gender:* ___ Female ___ Male

19. *Race:* ___ African American ___ Asian ___ White
___ Hispanic ___ Other

20. *Age of food shopper: (check one)*
____ 25 or less ____ 35-44 ____ 55-64
____ 25-34 ____ 45-54 ____ 65 or more

21. *Number of people in your home, <u>including yourself</u>:* _____

22. *Of those who live in your home, how many are:*
_____ 12 and under _____ 13 through 20
_____ 21 through 54 _____ 55 and over

23. *Education of principal food shopper: (check one)*
_____ started high school _____ High school graduate
_____ started college _____ College/Technical school graduate

24. *Annual household income before taxes. (check one)*
___ $15,000 or less ___ $26,000 - $35,000 ___ $46,000-$55,000
___ $16,000 - $25,000 ___ $36,000 - $45,000 ___ $56,000 or more

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APPENDIX B

PICTURES OF THE JACKSON, KNOXVILLE AND MEMPHIS FARMERS' MARKETS



Figure B1. Outside Picture of the Jackson Farmers' Market Main Building



Figure B2. Picture of the Jackson Retail Building



Figure B3. Outside Picture of the Knox Country Regional Farmers' Market Main Building



Figure B4. Picture of Attachment to the Knox County Regional Farmers' Market Main Building



Figure B5. Picture of the Knox County Regional Farmers' Market Wholesale Building



Figure B6. Outside Picture of the Memphis Farmers' Market Building

VITA

Kristina Colette Cartier was born in Iowa City, Iowa on April 22, 1970. Her family lived briefly in Los Angeles, California before settling down in Lanham, Maryland. She attended Lamont Elementary school. While there, she helped produce a stop-animation film entitled the Itsy-Bitsy Spider. She also wrote a book which won a honorary mention. During this time her brother Scott was born. After relocating to Vienna, Virginia, she went to Kilmer Intermediate for two years.

In 1984, she entered George C. Marshall high school. While there, she became editor of Reveille, the literary magazine, and introduced the use of computers for preliminary production during her Junior and Senior years. Other activities included being treasurer of the French Club. Outside of school, she achieved a small amount of success in the show ring with her pony, April Fool. Her greatest accomplishment was winning first place in the Hunter Valley Riding Club Mini-event. Interested in marketing at this early age, she organized a profitable backyard horse show for the surrounding horse community.

In 1988, she graduated from high school with honors. The following August, she entered Virginia Polytechnical Institute and State University with a John Lee Pratt Merit Scholarship. Continuing the tradition of her high school involvement, she participated in numerous organizations. She was an advisor for Silhouette, the literary magazine and a Little Sister of the Tau Delta fraternity. Senior year found her to be Vice-president of marketing in the AgEcon Club and Hokie National Agri-Marketing Association. She was inducted into Alpha Zeta, an honor society. Junior year she was chosen to be listed in the 1991 Who's Who of College

Students. In addition, her independent study class travelled to California during Spring Break to observe the diverse agricultural activities located in the state, including the Harris feedlot and a Diamond nut production facility.

In May 1992, she received the degree of Bachelor of Science in Agricultural Economics. The following August, she entered the University of Tennessee on a Tennessee Experiment Station assistantship. She was contributing editor for the Econogram, the department newsletter, as well as being Chairman of the Library Committee for the AgEcon Graduate Student Organization. In Fall 1993, she was inducted into the honor society of Gamma Sigma Delta. In May 1994, she received a Master of Science degree in Agricultural Economics.

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