

DOWNTOWN REVITALIZATION AND MARKETING  
EFFORTS FOR OKLAHOMA COMMUNITIES

By

KIMBERLY MICHELLE MCCROSKEY

Bachelor of Science

Oklahoma State University

Stillwater, Oklahoma

1996

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
MASTER OF SCIENCE  
May, 1999

DOWNTOWN REVITALIZATION AND MARKETING  
EFFORTS FOR OKLAHOMA COMMUNITIES

**Thesis Approved:**

*Mike D. Woods*

**Thesis Adviser**

*Lerald O. Docken*

*Robert H. Lanford Jr.*

*Wayne B. Powell*

**Dean of the Graduate College**

ateful thanks to God - for He is the source  
of all our life, love, and hope. May all glory go to Him.

## AKNOWLEDGMENTS

I wish to express my sincere appreciation to my major advisor, Dr. Mike Woods for his guidance, support, and patience throughout this project. Enormous thanks also go to my committee members, Dr. Gerald Doeksen, and Dr. Notie Lansford for all of their assistance and knowledge. Also, a special thanks to Dr. Dan Tilley for giving his guidance and advice. Further, I would like to extend my gratitude to June Cavendish at the Oklahoma Tax Commission for providing data and answering many questions. In addition, I would like to thank the Department of Agricultural Economics for this research opportunity and for their generous financial support.

I owe a great deal to my family for their encouragement and love throughout my life. I am especially grateful to my parents, Larry and Joyce. Despite these years of higher education, I have yet to learn anything as important and useful as the values that they have taught me through the years. I am also indebted to my sister, Stacey, and brother, Kevin, for their support and friendship.

I wish to express my sincere appreciation to Cathy Grove. Thank you for your support, encouragement, and friendship; you always make life brighter. To my friends Selena, Chelle, and Margaret, thank you for always giving me a reason to smile.

Finally, I must express my deepest appreciation to my fiancé, Dany. Thank you for sharing my joys and frustrations and for always believing in me and my dreams. Most importantly, thank you for your unconditional love which blesses my life in so

many ways. In closing, I must add my most grateful thanks to God - for He is the source of my strength. His grace and love give life meaning and hope. May all glory go to Him for the accomplishments he allows me to realize.

## CONTENTS

	Page
1	1
2	2

Chapter	Page
1. INTRODUCTION	1

## TABLE OF CONTENTS

Chapter	Page
1. INTRODUCTION .....	1
Problem Statement .....	1
Objectives .....	2
Conceptual Framework .....	3
Outline of Thesis .....	7
2. REVIEW OF LITERATURE .....	8
Theory .....	8
Economic-Base Theory .....	8
Central Place Theory .....	9
Importance of Retail Trade .....	11
Methods for Examining Retail Trade .....	12
Basic Studies .....	13
Studies with Increased Quantitative Analysis .....	15
Development of Market Study Procedures .....	18
Estimating the Impact of Key Variables on Retail Trade .....	20
3. MARKET STUDY .....	26
Background Information .....	26
Determining Primary and Secondary Trade Areas .....	30
Trade Area Demographics .....	34
Primary Trade Area .....	34
Secondary Trade Area .....	41
Retail Trade Flow Analysis .....	48
Retail Sales Per Household .....	49
Sales Conversion Index .....	50
Trade Area Capture and Pull Factor .....	53
Trade Area Potential Sales .....	54
Choosing a Method .....	55
Trade Area Surveys .....	64
Summary and Conclusions .....	66
Example for Stillwater, Oklahoma .....	66

Chapter	Page
4. METHOD OF ANALYSIS.....	69
Approach.....	69
Hypotheses.....	74
Data Sources .....	77
5. RESULTS OF ANALYSIS .....	80
Estimation of Equations.....	80
Results for Building Materials and Garden Supplies, SIC 52 .....	80
Results for General Merchandise, SIC 53.....	83
Results for Food Stores, SIC 54.....	84
Results for Automotive Dealers, SIC 55.....	86
Results for Apparel and Accessory, SIC 56.....	87
Results for Furniture and Home Furnishings, SIC 57.....	89
Results for Eating and Drinking Places, SIC 58 .....	90
Results for Miscellaneous Retail, SIC 59 .....	92
Summary and Conclusions .....	93
6. SUMMARY AND CONCLUSIONS .....	97
Summary .....	97
Conclusions.....	101
BIBLIOGRAPHY.....	104

LIST OF TABLES

Table	Page
3-1. Points of Indifference.....	32
3-2. Population and Housing Characteristics for Stillwater and Oklahoma, 1990 ....	36
3-3. Labor Force Characteristics for Stillwater and Oklahoma, 1990 .....	38
3-4. Major Employers in Stillwater.....	39
3-5. Population Characteristics , Employment, and Income for Stillwater Primary and Secondary Trade Areas, 1990 .....	40
3-6. Population Characteristics for Payne, Pawnee, and Noble Counties, 1990 to 2020 .....	43
3-7. Employment Trends for Payne, Pawnee, and Noble Counties, 1990 to 1997 ....	47
3-8. Trade Area Capture and Pull Factor Estimates, 1992.....	57
3-9 Trade Area Capture and Pull Factor Estimates for Primary Trade Area, FY 1997 .....	59
3-10. Potential and Actual Sales by SIC Categories, 1992 .....	62
4-1. Dependent Variable Statistics .....	72
4-2. Definitions of USDA Non-metropolitan County Designations .....	74
4-3. Statistics for Independent Variables .....	79
5-1. Parameter Estimates, T-scores, and R-square Value for SIC 52, Building Materials and Garden Supplies .....	81
5-2. Parameter Estimates, T-scores, and R-square Value for SIC 53, General Merchandise .....	83
5-3. Parameter Estimates, T-scores, and R-square Value for SIC 54, Food Stores .....	85

Table	Page
5-4. Parameter Estimates, T-scores, and R-square Value for SIC 55, Automotive Dealers .....	87
5-5. Parameter Estimates, T-scores, and R-square Value for SIC 56, Apparel and Accessory .....	89
5-6. Parameter Estimates, T-scores, and R-square Value for SIC 57, Furniture and Home Furnishings .....	90
5-7. Parameter Estimates, T-scores, and R-square Value for SIC 58, Eating and Drinking Places.....	91
5-8. Parameter Estimates, T-scores, and R-square Value for SIC 59, Miscellaneous Retail.....	93



## LIST OF FIGURES

Figure	Page
2-1. Normal Demand Schedule .....	10
3-1. Stillwater Trade Area .....	33
3-2. Population Growth of Stillwater, Oklahoma, 1980 to 1996 .....	35
3-3. Distribution of Population by Age for Stillwater and Oklahoma, 1990 .....	37
3-4. Population Trends and Projections, 1980 to 2020, Payne County .....	45
3-5. Population Trends and Projections, 1980 to 2020, Pawnee County .....	45
3-6. Population Trends and Projections, 1980 to 2020, Noble County .....	46

## **CHAPTER 1**

### **INTRODUCTION**

#### **Problem Statement**

A community retail market's ability to attract and retain customers is vital to the economic strength of a community. Retail sales produce sales tax dollars which support municipal services. A loss in retail sales lowers tax revenue available to provide desired services. Studying retail trade trends assists in identifying problem issues and possible areas for improvement.

As communities discover the importance of retail trade to a town, many request a market study of their retail sector. Such a study examines the business activity in the town and identifies areas for improvement. Many techniques exist to analyze retail trade in towns; however, no one has developed a uniform procedure to use to conduct a market study in Oklahoma. By making a standardized process, one can follow the same steps each time a market study is performed. As a result, the studies will require less time, and communities can be compared using the same standards.

In recent years, more revitalization efforts have a goal of increasing retail trade in communities. The Oklahoma Main Street Program is one such program. This program, targeting the problem of deteriorating main street businesses, began a decade ago when Oklahoma was in economic recession. In almost every community, the central business

district is a prominent employment center with many jobs resting on the viability of the downtown area (Leinenkugel). In addition, downtown often represents the largest concentration of businesses in a community, and the health of the downtown affects the health of the businesses in the surrounding areas (Leinenkugel).

Rushing examined the effectiveness of Oklahoma downtown revitalization programs including the Oklahoma Main Street Program. As part of his study, he asked people in participating communities whether the Main Street Program was a success in the town; however, responses were strictly the opinion of the experts and local respondents surveyed. No one completed an objective, quantitative study of the Main Street Program. An analytical study comparing participating and nonparticipating communities would provide information to local and state policy makers and would help them determine if programs like the Oklahoma Main Street Program represent a wise use of limited resources.

### **Objectives**

The general objective of this project is to determine the impacts and effectiveness of downtown revitalization efforts so that policy makers and local leaders can ascertain which programs represent the best use of limited resources. Specific objectives are to develop standardized procedures for estimating retail sector activity in individual Oklahoma communities and to estimate the impact of exogenous variables, including the Oklahoma Main Street Program, on retail trade activity in Oklahoma communities.

## Conceptual Framework

Economic-base theory describes two components of an economy: the export sector and the non-export sector. The export sector is the engine of growth for the region. Income earned by the export sector is spent and re-spent locally creating additional income through a multiplier effect. When those employed by export-base industries spend their money locally, they support the non-export sector whose employees spend their money locally and thus support non-export jobs. This multiplier effect depends on the propensity of individuals to spend money in their local economy rather than in an outside region. Retailers can be part of this export sector by providing goods and services to customers outside of their community. Traditionally, though, one views the retail sector as part of the non-export sector. As part of this group, these businesses provide jobs, income, and sales tax revenue to the community.

Historically, a community's downtown has housed the town's major economic activity. However, retailers have gradually moved from this central business district to newer, larger retail centers such as commercial strip developments and malls located outside of downtown and often outside of the community. These larger shopping centers can provide competitively priced goods and services at a volume unattainable by smaller operations as well as offer more convenient, larger parking areas. Also, improvements in transportation infrastructures and technologies have reduced the cost of travel to such businesses. As a result, people are more willing to travel greater distances to satisfy their need for a larger selection of goods at a lower cost. Retail leakage to new shopping centers represents the largest threat to the health of a downtown (Lawhead). Also, when

a community's residents begin shopping outside the town, sales tax revenue drops, and the town's economic health weakens. *nonprofit (Johnson and Moore)*.

Further One project targeted at the goal of increasing retail trade in communities is the Oklahoma Main Street Program, funded by both the Oklahoma Department of Commerce and individual communities. This program is modeled after the National Main Street *(Kurt)* Program. The National Trust for Historic Preservation, long involved in the preservation of older, architecturally important buildings, launched the Main Street Program in 1977 to achieve the following: study the reasons downtowns were dying, identify the many factors that have an impact on downtown health, and develop a comprehensive revitalization strategy that would encourage economic development within the context of historic preservation (Lawhead). In 1980, the Trust formed an affiliate non-profit organization, the National Main Street Center, to provide consulting and training services to cities and states undertaking the Main Street Program. *(Kurt)*

Since its creation late in 1985, the Oklahoma Main Street Program has worked with 46 Oklahoma communities that have demonstrated they have the support and money to assist efforts to revive their business district (Kurt). According to the Oklahoma Department of Commerce, private investment has exceeded 128.5 million (4,640 projects), and communities have realized a net gain of 1,539 businesses and 4,455 jobs since the start of the program. The program concentrates on changing the way people view main streets with the reasoning that if a community's downtown is falling apart, people will think of the town in the same manner. Towns with deteriorating business districts portray failure and will struggle to attract new businesses. These downtowns represent a large investment in time and capital. With all of the buildings, streets, water

lines, and other infrastructure in place, it is not economically feasible to allow the downtown area to become vacant and nonincorporated (Johnson and Moore). Furthermore, existing resources can be rehabilitated at a potentially lower cost than starting up a new business in a mall (Johnson and Moore). Reinvestment will portray the downtown as a viable location for new businesses and thus, increase investment (Johnson and Moore).

Main Street project directors make recommendations for boosting downtown businesses, and the program offers the assistance of an architect and business consultant. Beyond that, the project is essentially a self-help operation. The program's four-point approach stresses design, promotion, economic restructuring, and organization. Design involves improving the downtown's image by improving the physical condition without destroying important historical characteristics, thus preserving and enhancing the heritage of communities (Lawhead). Communities across the nation have learned that capitalizing on their heritage-that which makes them unique-gives them a distinct marketing advantage over the faceless malls and look-alike office parks (Leinenkugel). The assisting architect can create improvement plans based on a community's budget. Promotion pertains to marketing the downtown's unique characteristics to shoppers, investors, new businesses and others (Lawhead). Successful promotions present the downtown area as an exciting place to do business, have meetings, or engage in other social activities (Johnson and Moore). Organization refers to building consensus and cooperation between groups (civic leaders, government officials, merchants, consumers, professional groups, etc.) that are important to downtown revitalization (Lawhead). Finally, economic restructuring aims to strengthen the existing economic base while

seeking ways to diversify it (Lawhead). The four elements of the program interrelate. As Lawhead states, "the magic is tailoring the mix to each community and in educating local leadership to understand the importance of not crippling the effort by emphasizing one component over another."

The revitalized downtowns the Main Street Program has assisted in creating are expected to help all businesses located in the central business district, as well as add to the quality of life in the communities. In this way, the improved downtown of a community can be viewed as a public good. All businesses enjoy the benefits of the enhanced downtown, yet for many reasons no one business could have made the changes alone. First, all must be willing to improve the appearance of their own business. If one business enhances its appearance but the adjacent building remains shabby, the area still appears unsuccessful. The approach to the revitalization of a central business district along with the businesses within the area revolves around the program's idea that the total image of an area must be improved for revitalization efforts to be successful. In addition, a project of the magnitude of changing an entire business district is costly. Resources must be pooled to support the project. Also, by joining together downtown merchants can plan promotional campaigns and events to attract consumers to the area. One advantage of large retail centers is that shops work together to promote products, themselves, and the retail center or mall in an attempt to draw the most people possible; downtown merchants compete with these large promotional efforts by combining forces to advertise the area as a whole. By working together, downtown merchants can make changes that will benefit everyone.

Many attempts to unite downtown merchants fail because businesses are owned by an assortment of individuals, all of whom have different ideas and strategies for success. Guiding a downtown coalition of enterprises is complex and requires creativity, flexibility and numerous, often fragile, partnerships based upon mutual interest. The Oklahoma Main Street Program serves as a management program for downtown. Communities are provided with business advice and recommendations, but the communities and business owners finance any recommended improvements themselves. The towns involved in the project must show they have the support, money, and commitment to revive the business district. The revived downtown is expected to provide benefits such as additional jobs, increased sales tax revenue, and an improved quality of life for all in the community. The hypothesis is that by uniting, local businesses achieve goals they could not have realized individually.

### **Outline of Thesis**

In chapter two, literature is reviewed from the following areas: theory, importance of retail trade, methods for examining retail trade, development of market study procedures, and estimating the impact of key variables on retail trade. Chapter three encompasses the basic steps of the retail market analysis process, as well as provides examples from a market study of Stillwater, Oklahoma. In chapter four, the methods of analysis are discussed including the approach to the study, the hypotheses, and data sources. Finally, chapter five presents the results of the analysis, and chapter six contains a summary and conclusions.



## CHAPTER 2

### REVIEW OF LITERATURE

#### Theory

##### Economic-Base Theory

Economic base theory of growth has as a premise that a local economy must increase its monetary inflows to grow, and to achieve this effectively, the local economy must increase the level of its exports. The region's export sector sells its products to someone outside the community, thus bringing capital into the region (Rushing). Richardson states "the value of the theory is that it emphasizes the importance of the 'openness' of regional economies and the role played by changing national (or extra-regional) demand patterns in regional growth."

The economic-base theory describes two components of an economic-base economy: the export sector and the non-export sector. The export sector is the engine of growth for the region. Income earned by the export sector is spent and re-spent locally creating additional income through a multiplier. When export sector employees spend their money locally, they support the non-export sector whose employees spend their money locally and thus support non-export jobs. This effect of the multiplier depends on the propensity of individuals to spend money in their local economy rather than in an

outside region. Retailers can be part of this export sector by providing goods and services to customers outside of their community. Traditionally, though, one views the retail big sector as part of the non-export sector. As part of this group, these businesses provide jobs, income, and sales tax revenue to a community. provide the routine goods such as

### Central Place Theory

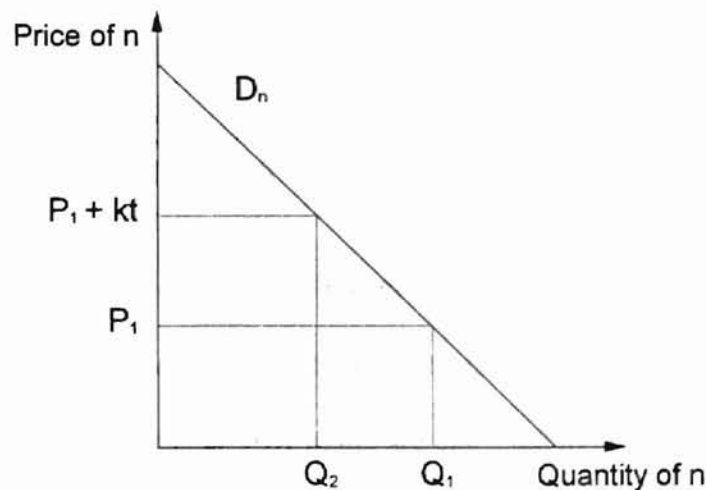
Central place theory attempts to explain the location, size, nature, and spacing of economic activity. The theory predicts that a hierarchy of communities exists where the number of retail functions performed at a community increases as the size or order of a community increases (King). Higher order centers are more complex, offer a greater range of goods and services, have more retail establishments, and serve a larger area than lower order centers; lower order centers supply a lesser range of goods and services to a smaller area (Flood and Schreiner). One expects the lower order centers to supply only products and services purchased frequently. Groceries and gasoline are examples of these routinely purchased goods. Higher order centers supply the goods and services available in lower order centers, as well as goods and services that are more specialized, more expensive, and/or less routinely purchased. Establishments found in the larger centers include clothing stores, appliance stores, car dealerships, and hospitals.

The varieties of retail goods offered by a community depend upon demand and supply conditions locally as well as the distance a consumer would normally travel to obtain a particular good (Ebai and Harris). Two important concepts in central place theory are the range and threshold of a product. The range of the good can be defined as the distance up to which the dispersed population will still be willing to purchase a good

offered at a central place (Flood and Schreiner). Different products have different market ranges. For example, consumers typically exhibit a search behavior when purchasing big ticket items, such as cars, and are willing to travel greater distances to buy these products; consumers are less likely to travel great distances to purchase routine goods such as groceries.

For instance, suppose good  $n$  is available for sale in a region. The good may be located at any point in a plane. The purchaser of good  $n$  pays not only the given price of good  $n$  but also a transaction cost (the cost of transportation to and from the site of sale). Therefore, the actual price of the good increases with distance from the site. One would expect, then, the quantity of good  $n$  demanded to decrease as distance from the site of sale increases. Figure 2-1 illustrates this relationship.

Figure 2-1. Normal Demand Schedule



$D_n$  represents the demand curve for good  $n$ . For a person living at the site of sale, the price of the good is  $P_1$ . At this price, consumers demand quantity  $Q_1$ . As distance

from the originating site increases, the actual price increases by the distance from the site multiplied by the cost of transportation per unit of distance ( $t$ ). For a consumer located  $k$  units from the site, the actual price of good  $n$  is  $P_1 + kt$ . At this price, the consumer demands quantity  $Q_2$ . At some distance from the center, there will be no effective demand for the good at the "distance adjusted" price (Flood and Schreiner). Costs of transportation impose limits to the range of a good.

The threshold is the minimum level of demand needed before a type of business can operate profitably in an area. A supplier must receive a certain minimum level of receipts to continue to offer the good for sale. The seller must cover costs and receive a normal rate of profit. In order for a good to be supplied at the central place, the population within the range of the good must exceed the threshold population of the good (Flood and Schreiner). Each type of good has a different threshold level since costs differ among products and services. A hierarchy of trade centers develops based on the different market ranges and thresholds.

### **Importance of Retail Trade**

An article by Hamrick presented recently released projections by the U.S. Bureau of Labor Statistics (BLS). According to these forecasts, most U.S. occupational groups and industries, especially services and retail trade, are expected to post job gains during the next 10 years. However, employment in agriculture, mining, and manufacturing is expected to decline (Hamrick). Although manufacturing, mining, and agriculture are important sectors in rural communities, these statistics show growth in employment is more likely to occur in the service and retail industries. Together, these growth industries

currently represent about 44 percent of rural employment and are expected to replace jobs lost in agriculture, mining, and manufacturing (Hamrick).

An article edited by Ghelfi, Bowers, and Mann further stressed the importance of retail trade. In 1993, retail trade was the second largest source of employment, accounting for 4.3 million jobs and 17 percent of non-metro employment (Ghelfi, Bowers, and Mann). However, concentration of retail trade in larger, centrally located towns is becoming a trend. Though smaller communities are often served by small, independent establishments, this category of retail stores is shrinking. Single-unit retailers, including the "mom-and-pop" stores so long a part of the rural landscape, made up over 90 percent of retail establishments in 1992, but accounted for only 40 percent of retail sales in 1992, down from 43.5 percent in 1987 (Ghelfi, Bowers, and Mann). These findings indicate that a challenge exists for small communities to maintain a viable retail sector. For example, analysis of data for all U.S. counties in 1987 and 1992 showed, on average, residents of non-metro counties without a major "trade center" town made about 25 percent of their retail purchases outside their county of residence (Ghelfi, Bowers, and Mann).

### **Methods for Examining Retail Trade**

As communities discover the importance of retail trade to a town, many request a market study of their retail sector. Such a study examines the business activity in the town and identifies areas for improvement. A starting point for such a study involves basic comparisons of towns and/or counties.

In their study, Darling and Tan surveyed twenty-three Kansas communities, ranging in size from Attica (population 766) to Independence (population 10,370), to compare and contrast buying patterns across communities. Survey data highlighted five factors that contributed to Kansas consumers' decision making regarding where to shop and accented the relative importance of these factors. The five factors were selection, price, convenience, service, and quality (Darling and Tan). The survey data indicated that consumers want and expect to buy most services and a high proportion of goods locally. They shop locally because it is convenient. They shop out of town to find items unavailable locally, to find a better selection of items than is available locally, and to search for lower prices (Darling and Tan). Darling and Tan stressed "it is important to remember that while dollars flow from rural communities to larger cities, they can also be made to flow from larger cities into small communities."

Holden and Pritchard also used surveys in their study examining the importance of retail concentration and retail variety to a center's performance. A concentration of similar types of retail stores allows customers to comparison shop, while a diverse retail center provides customers the ability to complete multipurpose shopping trips. Because consumer shopping desires lie at the heart of retail center development, economic developers and shopping center managers have much to gain from a better understanding of what attracts a consumer to a retail center. A consumer survey in a rural county in Ohio showed respondents believed an increased variety of stores was a necessary change (Holden and Pritchard). Second, retail business surveys in two urban and two rural

business communities provided additional evidence of the importance of retail variety for shopping centers. When asked to rank merchandising improvements for their business areas, the variety of merchandise ranked first more often than other items (Holden and Pritchard).

In another study, Darling, Rahman, and Pillarisetti presented a conceptual model of the life cycle of a rural community measured by economic activity. "Communities are living entities and go through a normal life cycle. Many grow and develop, then stagnate and decline" (Darling, Rahman, and Pillarisetti). The authors presented and described five phases: growth and birth, development, stagnation, retrenchment, and decision. In addition, they identified 21 variables to monitor economic and demographic activity, as well as their direction of movement at different transition points over the life cycle. These variables fell into the following main categories: demographic indicators, personal economic indicators, private and public investments, other economic variables, and number of new businesses. To demonstrate their method Darling, Rahman, and Pillarisetti used these variables to describe six Kansas communities in different phases of the life cycle. Finally, eight key resources were identified as important to a leadership team guiding revitalization. These resources included human capital, infrastructure capital, financial capital, innovation/technology capital, commitment/capacity capital, business environment, quality of life, and environmental and natural resources.

Deller and McConnon attempted to compare and contrast the relative performance of business activity in the counties of Maine using total retail sales and per capita retail sales during the period 1982-1988. Per capita retail sales were calculated as taxable retail sales in current dollars divided by the population of the county. An active local retail

market indicates several important economic factors: (1) a relatively large inflow of dollars into the community's economy, (2) greater shopping opportunities leading to decreasing possibilities of leakages, and (3) an increase in the circulation of dollars within a community (Deller and McConnon, July 1989).

### Studies with Increased Quantitative Analysis

#### Point of Indifference

In an examination of a retail market area, one is interested in finding the minimum point of indifference, the point where people are indifferent as to which city they prefer to shop in. Calculating this measure provides communities with additional information that can be used to discover the geographic area of influence for the town's retail sector. "Any city exerts an influence on persons and organizations outside of its boundaries. The magnitude of this influence will depend on two things: (1) the size of the city exerting the influence and (2) the distance from such city of the affected persons or organizations. This involves a simple formulation in which the power or influence of the central city is proportional to the city size and varies inversely as the distance over which the influence acts" (Carroll).

#### Trade Area Analysis

Another method providing increasing quantitative detail, trade area analysis, is used in many studies. Deller and McConnon analyzed Maine's retail trading sector. Harris performed a trade area analysis of the seventeen counties in Nevada for 1977 and 1982. Stone and McConnon used this method as part of a study in Iowa. By using data



on taxable retail sales, population, and income, trade area analysis can provide reliable estimates of trade area captured, pulling power, and potential sales for individual areas. These trade areas, or regions, could be a community, a county, or another study unit. In addition, combining the tools of trade area analysis allows one to compare and contrast the performance of retail activity.

The first tool in trade area analysis is trade area capture; trade area capture is defined as the number of full-time customer equivalents being serviced in a particular retail market (Deller and McConnon, Sept. 1989). Trade area capture is determined by dividing the market area's actual retail or service sales by state per capita expenditures, adjusted by the relative per capita income between the study area and state (Harris). In contrast to trade models that assume a market area is solely a function of population and distance, trade area capture explicitly incorporates income and expenditure factors also affecting the trade area. The underlying assumption of trade area capture is that local tastes and preferences, regardless of income differences, are similar to the state's (Harris). If trade area capture is larger than the area population then (1) the trade area is attracting consumers from outside its boundaries or (2) local residents are spending more for these retail items. If the trade area capture is less than the trade area population, then the area is (1) not even capturing the retail/service purchases of its residents or (2) local residents are spending relatively less than the statewide average (Harris).

The second measure of trade area analysis is the pulling power index or pull factor. The pull factor for retail goods and services is the trade area capture estimate divided by the market area's population. Division by population removes the influence of population change within the region and focuses attention on the market's ability to

draw outside customers (Harris). A pull factor greater than one indicates the trade area is attracting customers from the surrounding areas. Conversely, a pull factor less than one indicates the trade area is losing customers to surrounding areas. The final measure in trade area analysis enables those in the study area to estimate the potential sales of its retail market. Potential sales are calculated by multiplying state per capita sales by the area's population and an index of the trade area's buying power (Deller and McConnon, Sept. 1989). If, in a given year, the actual sales of the region are greater than the potential sales of the region, the study area is said to have a surplus in its retail market. If the opposite is true, the region has a leakage.

One use of trade area analysis is to develop a history of these estimates that rural decision-makers and retailers can use to see if their trade area is losing shoppers to outside counties. However, as Harris states, "the major benefit of trade area analysis is that it stimulates regions to examine reasons why they have lost pulling power and assess options available to recapture lost trade."

#### Sales Conversion Index Method

The risk inherent in business location, expansion, or site closing decisions cannot be eliminated but it can be minimized through sound market analysis (Brockway and Mangold). For example, business participants and city leaders could utilize information about the amount of in-shopping or out-shopping occurring in the community.

Inshopping occurs when consumers come from outside the local market area to shop. In this case, opportunities exist for small businesses to capitalize on the flow of shoppers

into the community. Outshopping occurs when the local population goes outside of the community to shop; strategies are needed to encourage consumers to shop at home.

Brockway and Mangold developed the sales conversion index. This method allows small business managers to assess strength of a market area based on its ability to convert income into retail sales. Furthermore, net inshopping or outshopping for the market area can be estimated. This tool differs from others because it is not time consuming or expensive to conduct. In addition, this method compares the subject market with market areas that have similar economic characteristics, such as household incomes and non-retail expenditures; this allows one to control for variations in the study. Variations among markets are especially important to small businesses since they are usually limited to one or a few geographic areas (Brockway and Mangold).

In his study, Chabot used the sales conversion index method to perform a retail leakage study of the state of Ohio. He calculated net retail flows for the individual segments of food and furniture and appliances, as well as for all items. By calculating conversion indices for individual segments, Chabot demonstrated that although a community may be experiencing retail sales leakage overall, the town may have some sectors that are competitive and experience net retail inflows.

### **Development of Market Study Procedures**

A market study combines both qualitative and quantitative information to describe a community. Surveys provide useful information on local opinions. In addition, basic comparisons of types of businesses, demographic data, and population trends can provide initial information to local communities and require little time and effort to construct. In

a more detailed study, one can develop point of indifference measurements, perform trade area analysis, and/or construct sales conversion indices for individual towns or counties. In her publication, Joncas provides a workbook for downtown business development. She gives step-by-step instructions for those wishing to conduct a market study, along with data needed to perform the study. In the analysis, she includes the use of business and property inventories, demographic data, trade area analysis, surveys of business owners and customers, methods for measuring retail sales, projections, and descriptions of market strengths and weaknesses. Alone, the different statistics, data, and measurements cannot tell one the state of the retail market in a community. Together, they provide a more complete picture. In the end, a market analysis is simply a tool for making the best possible decisions about an area's potential sales and for understanding who its most likely customers might be (Joncas). Most importantly, it should serve as a starting point for making decisions about the revitalization programs and activities (Joncas).

Some communities in Oklahoma have performed market studies of their town. Some of these are desiring updates of the market studies; others would like to see one conducted for their town. Many towns use the information gathered to ascertain interest and support for participation in the Oklahoma Main Street Program. Thus far, no one has developed a uniform procedure to use to conduct a market study in Oklahoma. By making a standardized process, one can follow the same steps each time a market study is performed. As a result, the studies will require less time and comparisons between studies will be easier. Procedures, including qualitative data to compare and quantitative methods to use, will be developed based upon data availability and specific goals.

## **Estimating the Impact of Key Variables on Retail Trade**

Estimation of the impact of exogenous variables including the Oklahoma Main Street Program, per capita income, population, demographics and economic base on retail sales growth requires the development of a more complex model. To assist in choosing the type of model and data to use, several articles have been reviewed which utilize a variety of methods. In studies they conducted, Shonkwiler and Harris and Harris, Chakraborty, Xiao, and Narayanan used demand threshold analysis, a commercial sector market analysis tool commonly used to estimate rural commercial sector activity. Demand threshold analysis, rooted in central place theory, exploits area population (and more recently other socioeconomic measures) to proxy the local demand structure for goods and services (Shonkwiler and Harris).

Empirical estimates of market thresholds are numerous. However, many of the past studies used ordinary least squares procedures and truncated data sets, which may provide biased estimates. Harris, Chakraborty, Xiao, and Narayanan examined the use of count data procedures to estimate threshold levels for rural retail establishments. For the analysis, the double log, Poisson, and negative binomial models were employed. Independent variables considered included: population, per capita income, percent of persons below poverty level, population density, unemployment rate, percent of total number of establishments that are small, and a dummy variable for adjacency to metropolitan counties. Due to the inclusion of several socioeconomic variables, market threshold population estimates could be uniquely derived for any given county.

The results of the analysis can be used to determine the minimum demand for a given number of stores. In addition, using the negative binomial procedures, one can estimate the number of retail establishments for a given county. Finally, count data procedures such as the negative binomial can derive the probabilities of a given number of establishments. This would allow economic development professionals to estimate the potential risks in advocating a certain retail development strategy (Harris, Chakraborty, Xiao, and Narayanan).

McGurr and Devaney used the Mann-Whitney procedure to compare median growth rates of several measures of metropolitan and non-metropolitan counties in Indiana between 1972 and 1992. The Mann-Whitney procedure is a nonparametric analogue to a sample t-test and is used when the sample groups are from a population that is not normally distributed (McGurr and DeVaney). The following measures were examined: population, number of retail establishments, retail sales in constant dollars, number of retail employees, sales per store, employees per store, sales per employee, sales per 1,000 population, county retail sales as a percentage of county income, and retail employment as a percentage of population (McGurr and Devaney). Results indicated the number of retail establishments, the total retail sales, and the number of retail employees grew significantly faster in metropolitan counties than in non-metropolitan counties (McGurr and Devaney). As a result, policies aimed at increasing the growth rate of retailing in these counties may reap substantial benefits. In addition, in a more mobile society with an increasing variety of stores, new approaches for promotion, merchandising, and sales growth of non-metropolitan retailers should be considered to reverse the trend toward metropolitan shopping (McGurr and Devaney).

In any research, a key issue is the type of data best suited for the project given constraints such as limited time and money. Thill assessed and compared two of the most common conventional discrete choice models used in shopping destination choice problems. First, the choice model was estimated with all choices of a relevant destination observed during a certain period of time (pooled cross-sectional data). The other approach consisted of an estimation with the choice of the destination where the majority of purchases takes place (cross-sectional data) (Thill). In this research, Thill used the case of pharmacies in a Belgian metropolitan area. No evidence was found that a model estimated with cross-sectional data does not perform as well as a model estimated with pooled cross-sectional data. Both models were found to be similar in their ability to identify the main predictors of store choice, and market-share predictions derived from both models were not statistically different (Thill). Therefore, the findings suggest a need does not exist to collect repeated patronage data over an extended period of time. As a result, time and money can be saved.

Trade area analysis is a tool often used to assess a community's retail activity. Pull factor measures, when calculated over time, help decision makers become more aware of the community's market capture efficiency and inefficiency (Yanagida, et al.). However, although this tool is useful, it does not give information about the impacts of exogenous variables affecting rural retail activity.

In their paper, Yanagida, Johnson, Young, and Lundeen developed and applied an analytical framework for explaining cross-sectional and intertemporal variations in the pull factors for retail sales in Nebraska. They considered the following variables to explain pull factors: per capita Federal adjusted gross income for each county relative to

that for the State, percent of each county's population between the ages of 18 and 64 relative to that for the State, percent of each county's population 65 years of age and older relative to that for the State, distance to nearest trade center (city of at least 10,000 population) from the approximate geographical center of each county, number of retail outlets in each county, percent county's population as a percent of county's peak population, population of largest town in the county, and percent of each county's total labor and proprietary income derived from sales of agricultural products. The researchers estimated the equation for all agriculturally dependent counties and for all counties in Nebraska for the years 1975, 1980, and 1985. They found that for all years the equation was estimated, lower sales leakages may be attributed to counties which are situated farther away from trade centers, have larger Federally adjusted gross incomes, and have experienced lower population decreases (relative to their peak population) (Yanagida, et al.). In addition, results showed that increased agricultural dependency tends to increase retail sales leakages.

Harris and Shonkwiler examined the potential use of a two-limit tobit procedure to incorporate interdependencies between retail sectors and estimate local retail sector expansion potentials. Specific objectives were to review characteristics of the study area, to discuss the trade area activity analysis procedures of trade area capture and pull factors, and to discuss the added information obtained from a resident survey and a two-limit tobit procedure for analysis of local retail sector potential (Harris and Shonkwiler). Harris and Shonkwiler noted "with no knowledge of potential socioeconomic factors contributing to local retail sales leakages, formulating activities to strengthen local



commercial sector activity or targeting commercial sector industries to develop or relocate in the community may be either incorrect or fall short of anticipated goals.”

Harris and Shonkwiler used household surveys to collect information on socioeconomic characteristics and shopping patterns. Specifically, the survey asked questions concerning grocery and general merchandise purchases. Their results suggested rural commercial sector development activities should be broad based rather than focusing on a single retail store type in order to capture retail purchase interdependencies.

Ebai and Harris used tobit estimation procedures for eight retail sectors to determine factors which influence the capture of local and non-local retail demands. The tobit procedure recognizes all pull factors less than one as zero and those equal to or greater than one as their calculated value. The tobit model analyzes first the difference between zero and non-zero values then differentiating on the basis of explanatory values, between varying pull factor values greater than one (Ebai and Harris). One finding was that a large number of retail stores was a positive determinant of pull factors. In addition exogenous variables have different impacts on different retail sectors; this finding should be considered when developing retail sector programs.

When developing a model to estimate the impact on retail sales of key variables such as the Oklahoma Main Street Program, per capita income, population, economic base, and age demographics, one must consider several factors. First, one must determine the type of data available including the cost of obtaining the data, quality of the data, and time-period the data covers. In addition, past studies such as the ones mentioned above

must be analyzed to ascertain the pros and cons of methods used as well as applicability to this specific problem.

## CHAPTER 3

### MARKET STUDY

#### Background Information

In the past several decades, America's central business districts have undergone major economic transitions. Historically, a community's downtown has housed the town's major economic activity. However, lured by the promises of ample customer parking, unified facades and a steady stream of shoppers attracted to a mall's anchor store, some downtown merchants left the traditional business district for the new developments (Joncas). The vacant spaces left behind were joined by new vacancies as other downtown businesses, unable to adapt to sudden changes in the local market, closed their doors for good (Joncas).

Without tenants and the rental income provided, property owners were unable to maintain their buildings. In addition, by the 1960's and 1970's, the unique character of many downtown buildings was hidden in an attempt to copy the modern look of competing malls and discount stores (Leinenkugel). The unique historical assets of many communities were hidden under sheaths of metal siding and fake facades (Leinenkugel). As a result of these combined factors, the downtown's image with customers suffered. Too often, well-meaning downtown leaders, anxious to simply fill vacancies, grabbed any business in sight, giving little thought to what the business could contribute to the

downtown's retail mix or whether its probable sales volume could generate the rent levels necessary to support the building's maintenance and, if needed, its rehabilitation (Joncas).

Today, organizations such as the National Main Street Center attempt to help communities across the nation create economic development programs to rebuild and strengthen their downtown business districts. These opportunities are especially important for the towns where the downtown area is the main retail center. The process of revitalization is complicated, and districts must carefully examine the area's market possibilities and build an economic development strategy based on the most promising options (Joncas). In addition, customers now have different expectations from shopping districts. Accustomed to exciting promotions, convenient hours, ample parking, competitive prices, and diverse, high-quality merchandise offered at malls and outlet centers, customers will need to find comparable benefits in downtown districts to convince them to shop on main street.

Understanding the basics of retail market analysis can help guide the revitalization program in making educated decisions about the types of businesses the commercial district might be able to support, the customers it can probably attract, the ways it should promote the district's assets, and the pace at which the economy might change (Joncas). In addition, by attempting to quantify supply and demand, a market analysis can reveal market niches and oversupply (Lawhead). Any viable business requires an adequate market, adequate space and support facilities, and a sense of local upward momentum; a market study should be available to existing businesses considering leaving a downtown location and to new operations interested in locating there (Lawhead).

When conducting a market analysis, several points should be considered. First, local involvement in the market analysis process is crucial (Joncas). Although outside consultants can provide much of the research needed for a market analysis, community residents provide local insight and an awareness of the town's unique characteristics. In addition, by using community volunteers and staff to complete some of the work, the development organization can save money. Most importantly, local leaders involved in the process will gain greater understanding of the dynamics forces at work in the local market, allowing them to make more informed decisions.

Second, market analysis is an ongoing process (Joncas). The district's market constantly changes and should be measured on an ongoing basis (Joncas). The initial market study should be updated every few years to monitor progress. Towns may need to modify goals and promotional activities as time passes. Finally, the market analysis should be integrated into elements of the neighborhood revitalization program (Joncas). Market analysis can help the commercial revitalization program in various ways, including recruiting new businesses, helping existing businesses expand or add new product lines, improving the effectiveness of advertising, launching successful promotional events and designing incentive programs for building improvements (Joncas).

Market analysis not only involves the use of formulas, but also requires patience, diligence, attention to detail and an understanding of the district being examined (Joncas). In addition, a market study should not be expected to provide precise answers. Rather, it should be used as a starting point in a larger revitalization effort. The market analysis should only be a small part of a larger revitalization program. The conclusions reached

by the revitalization organization during the market analysis process should help shape the promotional program implemented downtown, the scale of financial incentive programs the organization offers, and many other important elements (Joncas).

This chapter outlines some of the basic steps of the retail market analysis process. The objective is to provide standardized procedures for estimating retail sector activity in individual Oklahoma communities. In addition, examples from a market study for Stillwater, Oklahoma, are presented throughout the chapter.

Lawhead states a market study should provide in clear and understandable language:

- A historical understanding of the area, the functions it once served, the nature of its decline, and the reasons why that decline occurred.
- A complete inventory of the existing space and businesses in the target area.
- Data concerning the characteristics of the local consumer population including geographical determination of the primary and secondary market areas, population, age breakdown, number of households, household profile, household income level, number of workers per household, household movement trends (in or out migration), shopping habits, and the preference of current population for the business district or competitive retail centers.
- Inventory of services provided by competitive retail centers.
- Listing of non-retail related functions such as transportation routes, office or housing located in the district, public improvements, and parking.

## **Determining Primary and Secondary Trade Areas**

As a beginning step, the development team needs to determine the primary and secondary trade areas for the market. The primary trade area is the geographical area from which a commercial district draws a majority of its customers. Residents of the primary trade area tend to shop in the district on a regular basis. Most retail markets also have a secondary trade area. The secondary trade area is an additional area of influence beyond the primary trade area. Consumers in the secondary trade area shop in the district less frequently. Each business in a town likely has a different trade area. For example, a car dealership will probably serve a larger area than a drug store. Most business owners will have a general idea of their trade area. However, for general trend analysis, trade areas need to be defined for the market area as a whole.

Joncas notes the trade area issue is an important factor to investigate because:

- demographic information will be presented for the trade area;
- potential new businesses will want to know where most of their potential customers live;
- the business development team needs to be able to describe the demographics of potential markets; and
- promotion committees need to know which media (covering what geographics area) to use for advertising.

Because data are readily available on a city-wide basis, the development group may find it advantageous to define the primary trade area as the city limits. Therefore, Stillwater was chosen as the primary trade area for its market study. The team can gain an understanding of the size of the secondary trade area by calculating points of

indifference between the community and other cities in differing directions. A point of indifference is the point where people are indifferent as to which city they prefer to shop in. The other towns used in calculations should be large enough to have trade areas that would limit the size of the secondary trade area of the city being studied.

Any city exerts an influence on persons and organizations outside its boundaries. The magnitude of this influence will depend on two things: (1) the size of the city exerting the influence and (2) the distance from such city of the effected persons or organizations (Carroll). Calculating the point of indifference involves a simple formulation in which the power or influence of the central city is proportional to the city size and varies inversely as the distance over which the influence acts" (Carroll). The equation used follows:

$$(3-1) \quad D_i = \frac{K_{ij}}{1 + \sqrt{\frac{P_j}{P_i}}}$$

where  $D_i$  denotes point of indifference (miles),  $K_{ij}$  denotes distance from city  $i$  (the central city) to city  $j$ ,  $P_j$  denotes population of city  $j$ , and  $P_i$  denotes population of city  $i$ .

For the Stillwater market study, points of indifference were calculated in all directions from Stillwater. Table 3-1 shows the towns used in calculations, their population, their distance from Stillwater, and the corresponding points of indifference ( $D_i$ ) based on 1996 data..



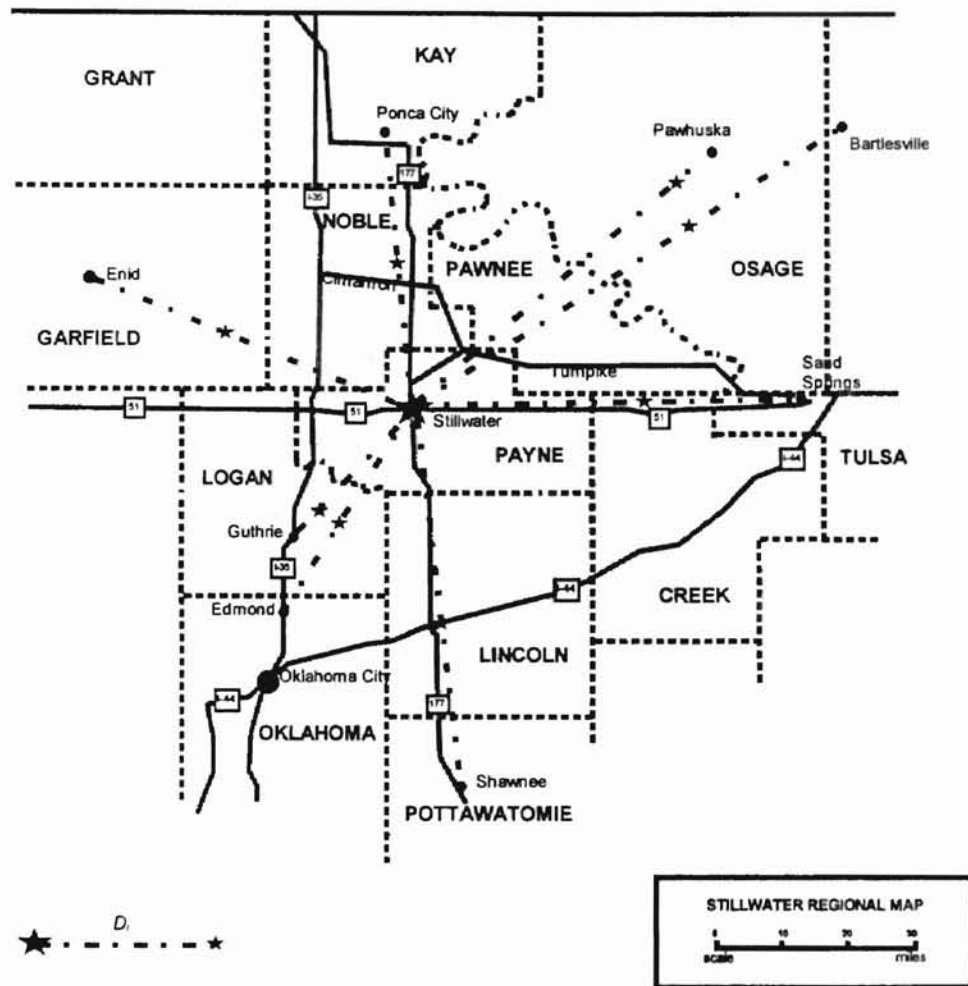
**Table 3-1. Points of Indifference, 1996**

Town	Population	Distance to Stillwater	$D_i$
Stillwater	38,490		
OKC	469,850	65.0	14.46
Edmond	63,480	54.3	23.77
Guthrie	10,540	35.5	23.30
Ponca City	26,180	41.7	22.85
Enid	45,720	64.7	30.96
Perry	5,060	24.4	17.91
Shawnee	26,830	60.0	32.70
Sand Springs	16,770	57.1	34.40
Bartlesville	33,730	97.5	50.36
Pawhuska	3,650	74.6	57.04
Tulsa	378,490	64.6	15.62

Source: Oklahoma Department of Commerce – State Data Center

Figure 3-1 shows the corresponding map.

Figure 3-1. Stillwater Trade Area



“Connecting” these points of indifference will give the team an approximation of the secondary trade area. This map shows the secondary trade area extends into at least a small portion of each of the surrounding counties. The team considered specifying the above area as the secondary trade area. However, data are primarily reported for entire counties and cities. Were the team to define the secondary trade area as above, they would find it difficult to collect and/or estimate information for this area. Therefore, the team chose to designate the secondary trade area as a group of entire counties: Payne, Pawnee and Noble counties. The portions of these counties that may actually shop

elsewhere is assumed to compensate for those portions of Creek, Lincoln, and Logan counties not included. Data for the primary trade area, Stillwater, are included in the figures reported for Payne county.

### **Trade Area Demographics**

Once the primary and secondary trade areas are defined, the development team needs to collect demographic data for the region. Businesses want this information so they can effectively target the buying groups found in the trade area. The group may want to include figures and tables to assist in presenting and understanding the data.

Joncas notes a market analysis will commonly look at two areas of demographics:

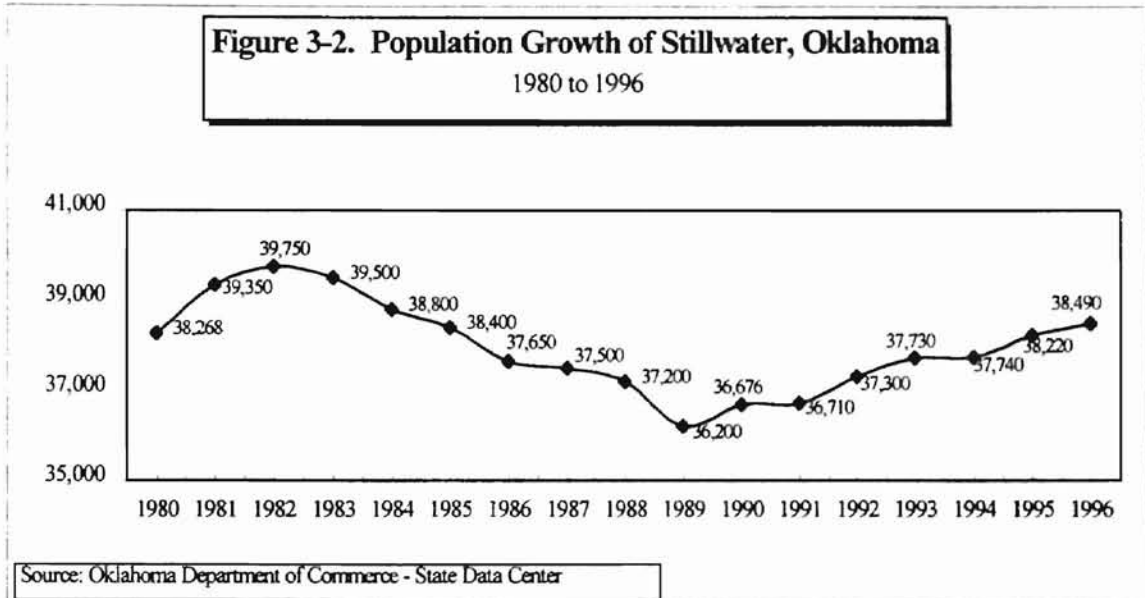
- an analysis of the basic population characteristics, or demographics, such as numbers of people, age and income of the trade area and competing market areas; and
- an analysis of demographics over time (is the population growing or declining, becoming older or younger, richer or poorer?).

As an example, consider the following description of Stillwater's primary and secondary trade areas as presented in the Stillwater Market Analysis.

#### Primary Trade Area

From 1980 to 1996, the population of Stillwater has increased slightly from 38,268 residents in 1980 to 38,490 residents in 1996 (a gain of 0.6%). However, the city's population peaked at 39,750 in 1982 and declined to 36,200 in 1989 (a decline of

8.9%). Since then, the city's population has grown steadily. From 1990 to 1997, Stillwater's population grew by 4.9 percent (Figure 3-2).



Basic population and housing characteristics for Stillwater from the 1990 census is reported in Table 3-2. During this time, the number of persons per household was approximately 2.6 (the same for the state). Median Household and Non-Family Income levels in Stillwater were lower than that of the state, however Median Family income was higher than the state's. Stillwater's per capita income lagged the state by \$1,146.

**Table 3-2. Population and Housing Characteristics for Stillwater and Oklahoma, 1990**

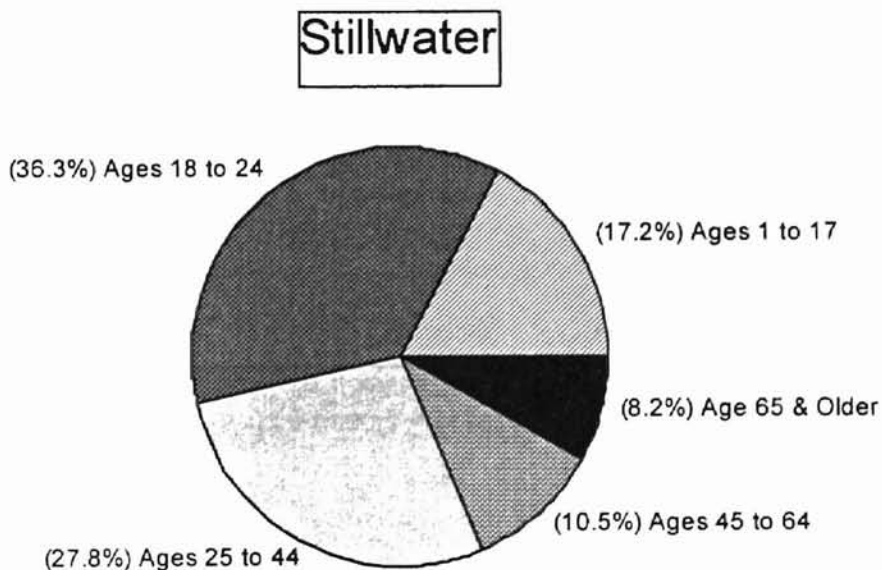
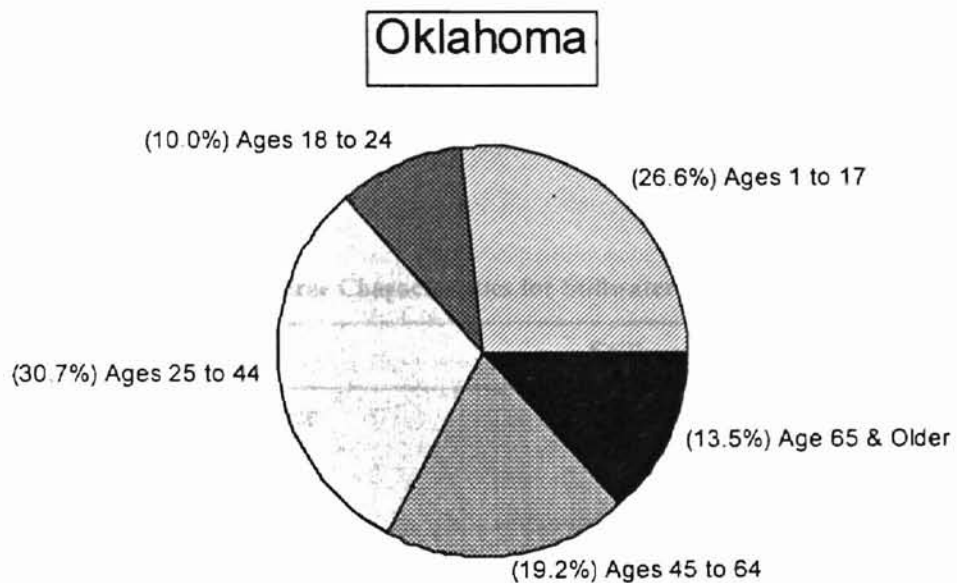
	<b>Stillwater</b>	<b>Oklahoma</b>
Population	36,676	3,145,585
White	32,090	2,587,439
Black	1,330	232,244
American Indian, Eskimo, or Aleut	1,226	252,468
Asian or Pacific Islander	1,708	32,561
Other Race	322	40,873
Number of Households	14,175	1,207,235
Persons per Household	2.6	2.6
Median Household Income	\$18,501	\$23,577
Median Family Income	\$31,197	\$28,554
Median Non-Family Income	\$10,051	\$12,470
Per Capita Income	\$10,747	\$11,893

Source: U.S. Census Bureau

Figure 3-3 compares Stillwater's population by age with that of the state.

Stillwater has a large proportion of residents ages 18 to 24 as would be expected in a town having a major university.

Figure 3-3. Distribution of Population by Age for Stillwater and Oklahoma, 1990



Source: U.S. Census Bureau

Labor force data from the 1990 census for Stillwater is reported in Table 3-3. During this time, Stillwater had a civilian labor force of 18,585, of which 53.9 percent were male. Employment was at 17,425 (54.2% male) resulting in an unemployment rate of 6.2. The state unemployment rate at this time was 6.9. Major employers in Stillwater and their number of employees are listed in Table 3-4.

**Table 3-3. Labor Force Characteristics for Stillwater and Oklahoma, 1990**

	<b>Stillwater</b>	<b>Oklahoma</b>
<b>Civilian Labor Force</b>	<b>18,585</b>	<b>1,470,069</b>
Males	10,011	802,591
Females	8,574	667,478
<b>Employment</b>	<b>17,425</b>	<b>1,369,138</b>
Males	9,439	747,986
Females	7,986	621,152
<b>Unemployment</b>	<b>1,160</b>	<b>100,931</b>
Males	572	54,605
Females	588	46,326
<b>Unemployment Rate</b>	<b>6.24</b>	<b>6.87</b>
Males	5.71	6.80
Females	6.86	6.94

Source: U.S. Census Bureau

**Table 3-4. Major Employers in Stillwater**

<b>Major Employers</b>	<b>Product/Service</b>	<b>Number Employed</b>
Armstrong World Industries	Floor Covering	205
City of Stillwater	Government Services	493
Creative Labs	Computer	350
Department of Vo-Tech	Educational Services	300
Frontier Engineering	Electronic Services	204
Home Call, Inc.	Nursing Home Services	110
Mercruiser	Marine, Engines, & Sterndrives	1,100
Meridian Technology Center	Educational Services	103
Moore Business Forms	Business/Computer Forms	162
National Standard	Wire Products	288
Oklahoma State University	Educational Services	7,158
Stillwater Medical Center	Medical Services	503
Stillwater Designs	Automotive Speakers	100
Stillwater Milling	Livestock Feed	85
Stillwater Publishing Company	Publisher	83
Stillwater Public Schools	Educational Services	666
Stillwater National Bank	Banking	181
TCI Marketing	Telecommunications	187
TMS Sequoyah	Software	120
U.S. Department of Agriculture	Government Services	139
Warren Clinic	Medical Services	102
World Color Press	Magazine Printing	209

Source: Oklahoma Department of Commerce, Research and Planning Division

Every effort should be made to locate and use the most current data when conducting a market study. However, during the latter part of a decade, finding current data for a study may be difficult. Since some city demographic data are only available in the United States Census, 1990 Census data were used in the market study for Stillwater.



Because these data have limitations, the example for Stillwater also included more current demographic data for the counties in the study.

Current secondary data for housing, income, and labor force/total employment at the city level will not be available until the release of the 2000 census, however income by zip code data for 1995 are available. These data are based on income tax returns filed by Oklahomans. The median income level for zip code 74074 is reported to be \$19,900 in 1995 while the median income level in zip code 74075 is \$21,400. The median income level for zip code 74076 is \$23,000. No data is reported for zip code 74077 (Oklahoma State University Residence Halls). This income data includes residents outside the city limits.

Recent secondary data at the county level are available and will be reported in the Secondary Trade Area section. A summary comparison of the above demographic and economic data for Stillwater's primary and secondary trade areas is presented in Table 3-5.

**Table 3-5. Population Characteristics, Employment, and Income for Stillwater Primary and Secondary Trade Areas, 1990**

	Primary Trade Area	Secondary Trade Area*
Population	36,676	88,127
Number of Households	14,175	34,090
Persons Per Household	2.6	2.6
Labor Force	18,585	42,259
Employment	17,425	39,730
Unemployment	1,160	2,529
Unemployment Rate	6.2%	6.0%
Per Capita Income	\$10,747	\$10,828

Source: U.S. Census Bureau

\*Primary Trade Area (Stillwater) numbers are included in Secondary Trade Area numbers.

## Secondary Trade Area

Table 3-6 provides historical and projected data highlighting general population and housing characteristics for Payne, Pawnee, and Noble counties for the years 1980 to 2020. From 1980 to 1996, Payne County's population has increased by 2.6% while Pawnee County had growth of 4.1% and Noble County had a loss of 2.9%. Population growth for the three counties combined grew 2.1% from 1980 to 1996. It is projected that from 1997 to the year 2020, the three counties' combined population will grow by 12.3%. Figures 3-4, 3-5, and 3-6 show these population trends for Payne, Pawnee, and Noble counties respectively.

Examining population trends by age shows that from 1980 to 1996, Payne County has had an increase of 10.1% of residents under age 15 while the number of residents ages 65 and over has increased by 28.1%. This shows that the county is aging while, at the same time, it is maintaining a healthy growth of a youthful resource of future workers. From 1997 to 2020, it is projected that Payne County's growth rate of under age 15 residents will be 15.8% while those age 65 and over will be 37.1%.

From 1980 to 1996, Pawnee County has had an increase of 1.7% of residents under age 15 while the number of residents ages 65 and over has increased by 15.2%. This shows that the county is aging while at the same time, the county is barely maintaining growth of a youthful resource of future workers. From 1997 to 2020, it is projected that Pawnee County will lose residents under age 15 at a rate of 14.1% while the number of those ages 65 and over will grow by 39.2%.

From 1980 to 1996, Noble County had an increase of 0.5% of residents under age 15 while the number of residents ages 65 and over has increased by 6.0%. This shows

that the county is aging while at the same time, the county is barely maintaining growth of a youthful resource of future workers. From 1997 to 2020, it is projected that Noble County will lose residents under age 15 at a rate of 7.4% while the number of those ages 65 and over will grow by 37.9%.

**Table 3-6. Population Characteristics for Payne, Pawnee, and Noble Counties, 1980 to 2020**

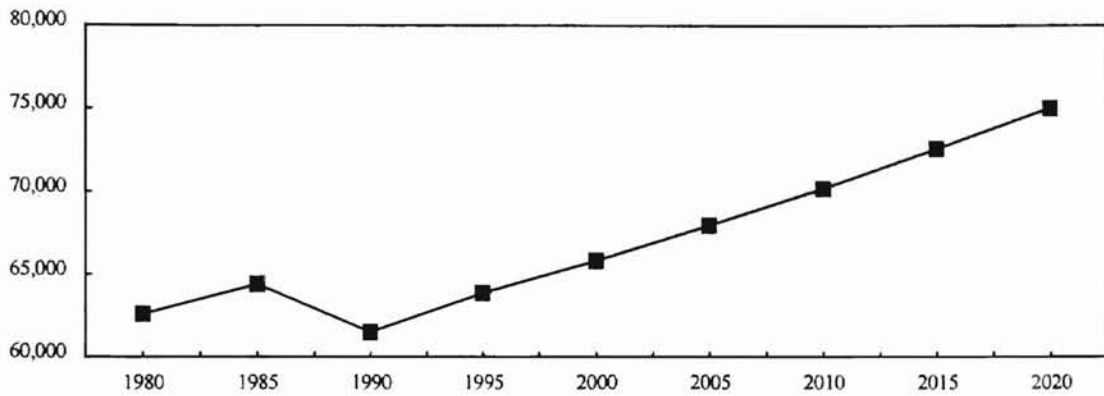
	1980	1990	1995	1996	1997	1998	1999	2000	2020
<b><u>Payne County</u></b>									
Total Population	62,612	61,507	63,840	64,220	64,499	64,963	65,386	65,819	74,984
Under Age 15	10,510	11,142	11,712	11,753	11,719	11,698	11,662	11,572	13,566
15 to 19	8,501	6,574	6,637	6,477	6,595	7,021	7,417	7,575	7,388
20 to 24	14,326	10,983	10,776	10,770	10,564	10,216	9,950	10,063	10,268
25 to 44	16,903	20,062	21,029	21,352	21,367	21,452	21,555	21,583	21,145
45 to 64	8,061	7,893	8,238	8,344	8,683	8,967	9,193	9,424	14,980
65 and Over	4,311	4,853	5,447	5,524	5,571	5,609	5,609	5,602	7,637
Median Age	23.79	26.80	27.63	27.91	28.19	28.37	28.46	28.51	31.70
Number of Households	22,291	23,857	24,705	24,930	25,144	25,349	25,547	25,740	28,974
Persons Per Household	2.81	2.58	2.58	2.58	2.57	2.56	2.56	2.56	2.59
Mean Household Income	\$17,554	\$31,400	\$39,470	\$41,232	\$43,121	\$45,094	\$47,192	\$49,402	\$131,131
Per Capita Income	\$7,097	\$13,174	\$16,464	\$17,227	\$18,044	\$18,890	\$19,801	\$20,756	\$54,785
<b><u>Pawnee County</u></b>									
Total Population	15,403	15,575	15,900	16,040	15,938	15,943	15,945	15,948	16,144
Under Age 15	3,519	3,506	3,582	3,578	3,532	3,517	3,490	3,451	3,034
15 to 19	1,222	1,122	1,117	1,170	1,189	1,196	1,202	1,206	1,062
20 to 24	1,051	743	668	640	637	643	682	723	710
25 to 44	4,745	5,337	5,507	5,544	5,410	5,342	5,244	5,146	3,984
45 to 64	3,207	3,124	3,147	3,197	3,278	3,335	3,409	3,488	4,720
65 and Over	1,659	1,743	1,879	1,911	1,892	1,910	1,918	1,934	2,634
Median Age	33.73	36.15	37.57	37.95	38.30	38.64	39.07	39.46	45.49
Number of Households	5,790	6,012	6,103	6,117	6,129	6,140	6,150	6,159	6,201
Persons Per Household	2.66	2.59	2.61	2.62	2.60	2.60	2.59	2.59	2.60
Mean Household Income	\$23,411	\$33,613	\$40,840	\$42,441	\$44,173	\$45,973	\$47,898	\$49,926	\$130,472
Per Capita Income	\$8,841	\$13,062	\$15,749	\$16,392	\$17,087	\$17,812	\$18,586	\$19,401	\$50,538

**Table 3-6: Population Characteristics for Payne, Pawnee, and Noble Counties, 1980 to 2020 (cont.)**

	1980	1990	1995	1996	1997	1998	1999	2000	2020
	<b>Noble County</b>								
Total Population	11,572	11,045	11,280	11,240	11,397	11,421	11,437	11,452	11,972
Under Age 15	2,580	2,545	2,618	2,592	2,608	2,594	2,562	2,540	2,415
15 to 19	995	704	706	747	802	831	877	881	787
20 to 24	902	592	533	490	509	517	550	583	626
25 to 44	3,488	3,801	3,899	3,867	3,838	3,790	3,730	3,686	3,417
45 to 64	2,257	2,081	2,109	2,114	2,187	2,223	2,256	2,297	2,738
65 and Over	1,350	1,322	1,414	1,431	1,453	1,466	1,462	1,465	1,989
Median Age	33.02	35.11	36.65	36.93	37.06	37.29	37.45	37.71	39.58
Number of Households	4,382	4,229	4,315	4,331	4,346	4,360	4,373	4,386	4,530
Persons Per Household	2.64	2.61	2.61	2.60	2.62	2.62	2.62	2.61	2.64
Mean Household Income	\$23,183	\$36,371	\$45,560	\$47,666	\$49,916	\$52,291	\$54,824	\$57,486	\$156,841
Per Capita Income	\$8,955	\$14,239	\$17,704	\$18,541	\$19,435	\$20,388	\$21,416	\$22,502	\$61,081

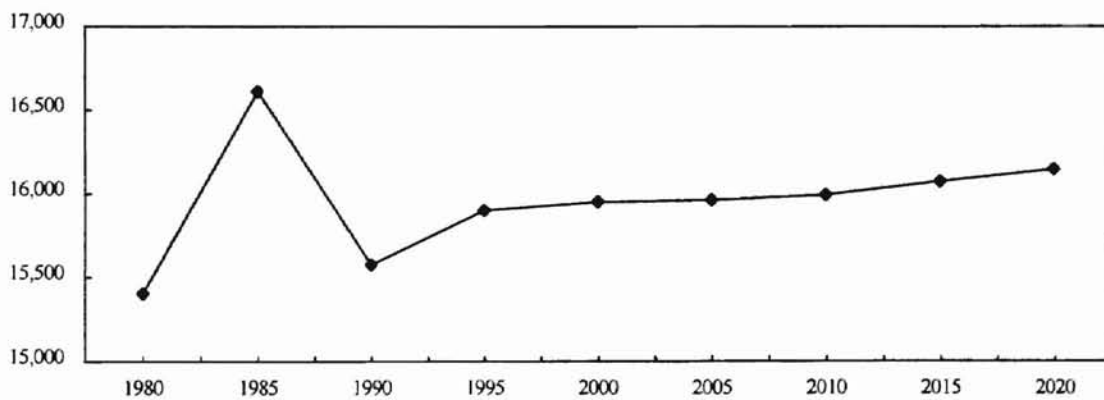
Source: Woods & Poole Economics, Inc.

**Figure 3-4. Population Trends & Projections, 1980 to 2020**  
Payne County

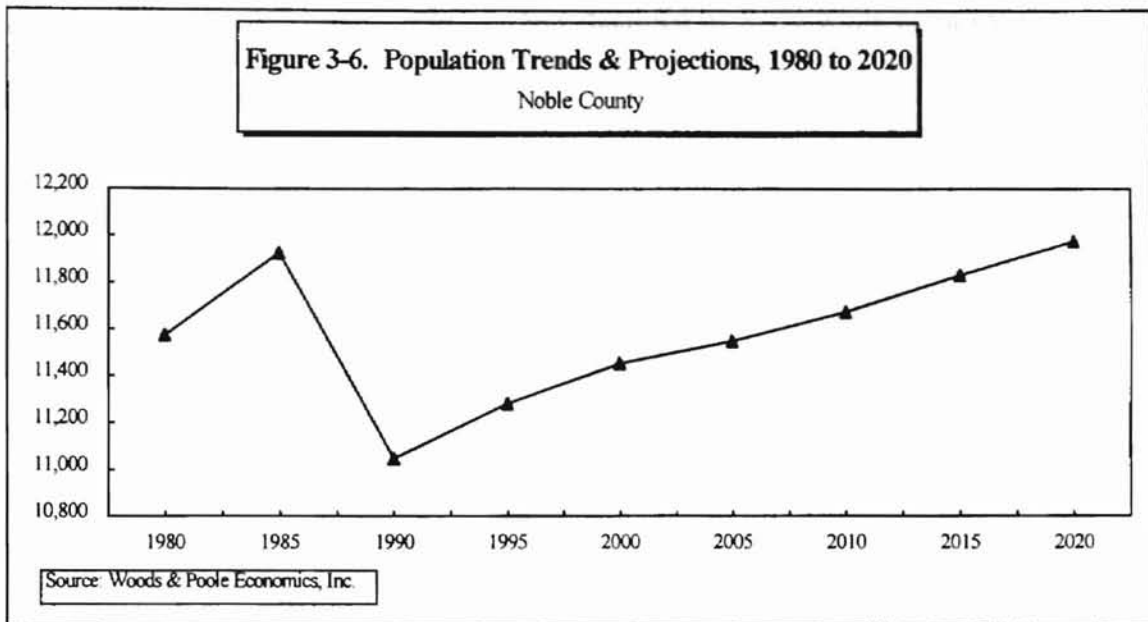


Source: Woods & Poole Economics, Inc.

**Figure 3-5. Population Trends & Projections, 1980 to 2020**  
Pawnee County



Source: Woods & Poole Economics, Inc.



Mean (average) household income and per capita income levels have grown steadily in all three counties of the secondary trade area. From 1980 to 1996, average household income in Payne County increased by 134.9% while Pawnee and Noble counties experienced average household income growth of 81.3% and 105.6%, respectively. During this same time period, per capita income grew by 142.7% in Payne County, 85.4% in Pawnee County, and 107.0% in Noble County.

Projections show that from 1997 to 2020, average household income will grow by 204.1% in Payne County, 195.4% in Pawnee County, and 214.2% in Noble County. During the same time period, per capita income growth for the three counties will be 203.6%, 195.8%, and 214.3%, respectively.

Table 3-7 reports employment trends for Payne, Pawnee, and Noble counties for the years 1990 to 1997. During this time, Payne County's labor force grew by 17.0% while employment grew by 21.4%. The unemployment rate went from 5.2% in 1990 to

1.6% in 1997. Pawnee County's labor force declined by 8.4% while employment declined by 12.4%. The unemployment rate went from 6.0% in 1990 to 9.0% in 1997. Noble County's labor force grew by 6.1% while employment grew by 7.2%. The unemployment rate went from 4.1% in 1990 to 3.1% in 1997.

**Table 3-7. Employment Trends for Payne, Pawnee, and Noble Counties, 1990 to 1997**

	1990	1991	1992	1993	1994	1995	1996	1997
<b><u>Payne County</u></b>								
Labor Force	30,650	29,880	32,820	33,120	33,690	34,370	35,090	35,853
Employment	29,060	28,380	31,890	32,140	32,630	33,600	34,430	35,275
Unemployment	1,590	1,510	930	980	1,060	770	660	578
Unemployment Rate	5.2%	5.0%	2.8%	3.0%	3.2%	2.2%	1.9%	1.6%
<b><u>Pawnee County</u></b>								
Labor Force	7,400	6,670	6,810	6,850	6,800	6,570	6,740	6,780
Employment	6,960	6,040	6,190	6,110	6,050	6,050	6,320	6,168
Unemployment	450	630	620	740	750	520	420	613
Unemployment Rate	6.0%	9.5%	9.1%	10.8%	11.0%	7.9%	6.2%	9.0%
<b><u>Noble County</u></b>								
Labor Force	5,360	5,330	5,210	5,280	5,670	5,590	5,560	5,687
Employment	5,140	5,090	5,000	5,050	5,470	5,380	5,380	5,509
Unemployment	220	250	210	230	200	210	190	178
Unemployment Rate	4.1%	4.6%	4.0%	4.4%	3.5%	3.7%	3.3%	3.1%

Source: ORIGINS (Oklahoma Resources Integrated General Information Network Systems)



## **Retail Trade Flow Analysis**

The existence of a population with the ability to purchase goods and services does not guarantee the economic health of a retail trade area; the population's income must be converted into retail sales if trade is to flourish (Brockway and Mangold). Another important aspect of a market study is determining the market strength of the trade areas. This will assist the development team in creating outreach programs to capitalize on the area's strengths and target the area's weaknesses. A strong retail sector usually indicates that a phenomenon known as "inshopping" is occurring in which consumers come from outside the local market area to shop (Brockway and Mangold). In this case, business owners have the opportunity to capitalize on the flow of shoppers into the community. Conversely, a weak retail sector indicates "outshopping", where the local population is shopping outside the community. Thus, strategies are needed to encourage consumers to shop locally (Brockway and Mangold). Different methods exist to examine the strength of an area's retail sector. In this section, some of these methods are examined, including discussion of the strengths and weaknesses of each.

Sales within the primary trade area include routine and big ticket items. Because consumers commonly exhibit a search behavior when purchasing items highly valued either personally or monetarily, one expects the sales of some non-routine, big ticket, and specialty items to be lost to larger metropolitan trade centers such as Tulsa or Oklahoma City. When considering the secondary trade area in the example, though, Stillwater would be the larger town in which some will search for higher priced and specialty items not available in the smaller communities.

Different combinations of available data are used to conduct a retail sales analysis. Joncas reports four major sources of information about local retail sales:

- *Sales tax reports.* In states that collect sales tax, reports of sales by types of businesses are often available locally on a regular basis.
- *Census of Retail Trade* and the *Census of Service Industries*, both published by the U.S. government, Department of Commerce.
- *Retailers.* A few communities have been able to work with retailers to anonymously report their sales to a local accounting firm, who then produced periodic reports that enabled the downtown association to track sales trends.
- *Estimates by national companies.* Companies like *Sales and Marketing Management* and a number of large data firms publish annual estimates of retail sales for metropolitan areas.

### Retail Sales Per Household

One clue to the retail sales performance of the trade area and the spending habits of customers is to compare the sales per household for the trade area to the sales per household for the state (Joncas). The Census of Retail Trade lists the total retail sales by retail categories for the state, counties, and cities of 2,500 inhabitants or more. The trade area can be a city, a county, or multiple cities and/or counties. To obtain the sales per household statewide, divide the amount of state retail sales in each category by the number of households in the state. To obtain the sales per household for the trade area, divide the amount of trade area retail sales in each category by the number of households in the trade area.

The development team can compare the sales per household of the trade area with the sales per household of the state. The trade area may have lower sales per household in some areas and greater sales per household in other areas. The figures can provide a starting point for analysis by showing sectors where the trade area can improve. However, more detailed analysis is needed to provide a clearer picture of the trade area's situation. For example, the households in the trade area may spend less on average than households in the state. A more important question is the following: does the trade area capture all of the sales of its residents?

### Sales Conversion Index

Brockway and Mangold present a method that allows small business managers to assess the strength of a market area based on its ability to convert income into retail sales. The sales conversion index, created to enable business managers to analyze a market area in relation to a benchmark area with similar income and non-retail expenditure characteristics, develops an estimate of the net inshopping or outshopping that takes place in the market area (Brockway and Mangold).

Brockway and Mangold note the following data, found in *Sales in Marketing Management's* annual "Survey of Buying Power," are required:

- (1) Total retail sales for the retail trade area(s) being examined. *Sales and Marketing Management* provides this information for metropolitan areas and for each city and county in the metropolitan area. For rural areas, the information is provided by county.
- (2) Retail sales for an appropriate "benchmark" unit.
- (3) Retail sales for the subject and benchmark areas in each of the product categories delineated in *Sales and Marketing Management's* "Survey of Buying Power."

- (4) Effective buying income (EBI) for the subject and benchmark areas being examined. Effective buying income is defined as “personal income less personal tax and nontax payments” (Brockway and Mangold).

Brockway and Mangold explain the sales conversion index is calculated in five steps:

- (1) Determine the retail area to be examined.
- (2) Establish an appropriate benchmark trade area. The benchmark should be similar to the subject area in terms of median effective buying income, income distribution, and percentage of effective buying income spent in such non-retail categories as home mortgages, service establishments, sales taxes, carrying charges for credit, interest, utilities, and savings. The benchmark is usually the state in which the business is located, the metropolitan areas within that state, or non-metropolitan areas within the state (Brockway and Mangold).
- (3) Retail sales must be divided by effective buying income for both the trade area examined and the benchmark area. The resulting percentages are referred to as conversion factors and indicate the relative amount of buying income that is being converted into retail sales.
- (4) The subject area’s conversion factor is divided by the benchmark area’s conversion factor. The resulting figure is the sales conversion index (SCI). The sales conversion index is a relative measure of a trade area’s ability to convert buying income into retail sales as compared to a benchmark area. The equation for SCI follows:

$$SCI = \frac{\text{A market area's retail sales expressed as a percent of its total EBI}}{\text{The benchmark area's retail sales expressed as a percent of its total EBI}}$$

- (5) Calculate sales conversion indexes for each of the retail categories delineated in the “*Survey of Buying Power*.” A high sales conversion index for a given retail category indicates a high degree of economic health relative to the benchmark. A low sales conversion index indicates a relatively low degree of economic health. A sales conversion index of more than 100 indicates that the subject area is benefitting from net inshopping relative to the benchmark. A sales conversion index of less than 100 indicates that the subject area suffers from net outshopping (Brockway and Mangold).

The sales conversion index has some positive qualities that make it appealing to use. First, it allows managers to focus on local markets in relation to markets with similar income and non-retail expenditure characteristics. This makes the index useful to small businesses in the retailing sector, whose markets are usually limited to small geographical areas. In addition, the sales conversion index is easily calculated with readily available data. Therefore, the process does not require a large commitment of time or money. Other advantages of the sales conversion index include: (1) its accuracy does not depend on respondents' ability to recall the dollar amount or percentage of budget spent on outshopping; and (2) it enables the small business manager to select a benchmark area that is comparable to the subject area (Brockway and Mangold).

Just as the sales conversion index has some positive qualities, it also has some limitations. First, firms whose markets span large regions may find the sales conversion index less useful. Secondly, although the index may show the market area is healthy in comparison to its benchmark, it may be significantly less healthy than market areas not included in the benchmark (Brockway and Mangold). In addition, care must be taken to select a benchmark area comparable to the subject area in terms of median income, income distribution, and money spent in non-retail categories (Brockway and Mangold). Also, *Sales and Marketing Management* provides data by state, county, metropolitan area, and cities within a metropolitan area. Therefore, data for towns in non-metropolitan areas are not available, and the sales conversion index must be calculated on a county level in non-metro areas. Finally, the six retail categories delineated in *Sales and Marketing Management's* "Survey of Buying Power" does not encompass all retail categories.

## Trade Area Capture and Pull Factor

Two trade area analysis procedures commonly used are trade area capture and pull factor. Trade area capture is based on the assumption that after accounting for income differences, local tastes and preferences are similar to that of the state or reference area.

$$(3-2) \quad TAC_{ij} = \frac{RS_{ij}}{\frac{RS_{is}}{POP_s} * \frac{PCI_j}{PCI_s}},$$

where:

$TAC_{ij}$  is the trade area capture estimate for merchandise type  $i$  in area  $j$ ,

$RS_{ij}$  is total sales of merchandise type  $i$  in area  $j$ ,

$RS_{is}$  is total sales of merchandise  $i$  in state  $s$ ,

$POP_s$  is population in state  $s$ ,

$PCI_j$  is per capita income in area  $j$ , and

$PCI_s$  is per capita income in state  $s$ .

Trade area capture measures purchases of both residents and nonresidents. Therefore, it is difficult to make comparisons with regions of different sizes and for assessing trends over time. In these cases, the pull factor is useful. The pull factor calculates the proportion of consumers that a county draws from outside its boundaries.

The pull factor is defined as the following:

$$(3-3) \quad PF_{ij} = \frac{TAC_{ij}}{POP_j},$$

where:

$PF_{ij}$  is the pull factor for merchandise  $i$  in area  $j$ ,

$TAC_{ij}$  is the trade area capture estimate for merchandise type  $i$  in area  $j$ , and

$POP_j$  is population in area  $j$ .

A pull factor greater than one may be interpreted to mean that the area is attracting a larger number of customer equivalents than would normally be drawn from the local population. Conversely, a pull factor less than one implies that the retail purchases of local residents are not being captured by the local commercial sector.

Trade area capture and pull factor analysis have both advantages and disadvantages. The calculations involved are easily understood and the data are readily available. In addition, these procedures have been used by many different researchers and in many different projects. Therefore, these procedures would be recognized by many. However, data for the same time period for each variable may be difficult to find, and the data may only be found at the county level when considering non-metropolitan areas. In addition, the assumptions used in interpretation may not hold.

#### Trade Area Potential Sales

To calculate potential retail sales, one assumes that local consumers have similar spending habits to those of the entire state. Actual retail sales by SIC categories are obtained from the 1992 Census of Retail Trade. Using population data from the U.S.

Census, state per capita retail sales are calculated for each SIC category. Potential Retail Sales are calculated by multiplying state per capita sales by the primary and secondary trade area populations. Potential retail sales can be compared with actual retail sales to determine whether a sales surplus or sales leakage exists. The major advantage of this method is ease of calculation. Also, it is easy to understand. However, local consumers may not have similar spending habits to those of the entire state.

### Choosing a Method

All of the above mentioned methods have advantages and disadvantages. The development team must choose methods that will best utilize their time, monetary, and educational resources. In addition, the development team must examine the sources of data available to them. For the Stillwater Market Study, trade area capture and pull factor and potential retail sales were used to analyze the trade area. The team had the data available to use these methods. In addition, these methods were used in a previous market study of Stillwater. This allowed for an easy comparison over time. The examples from the Stillwater study follows.

In this analysis, the area is either the primary or secondary trade area. Table 5-8 shows trade area capture estimates for the primary and secondary trade areas for 1992. The estimates were calculated using data from the Census of Retail Trade (1992) and the U.S. Census Bureau. Estimates are calculated for eight different Standard Industrial Classifications for retail sales: (52) Building Materials and Garden Supplies; (53) General Merchandise; (54) Food Stores; (55) Automotive Dealers; (56) Apparel and Accessory; (57) Furniture and Home Furnishings; (58) Eating and Drinking Places; and



(59) Miscellaneous Retail. Category 55, Automotive Dealers, only captures the sales of auto parts. This section does not include automobile sales because autos are subject to an excise tax, not a sales tax.

For an example calculation, consider trade area capture for food stores (54) for the primary trade area:

$$TAC_{54,PT} = \frac{\$54,890,000}{\frac{\$4,183,679,000}{3,207,000} * \frac{\$10,747}{\$11,893}} = \$46,563$$

Continuing with the example above, the pull factor for food stores (54) for the primary trade area follows:

$$PF_{54,PT} = \frac{\$46,563}{37,300} = 1.248$$

**Table 3-8  
Trade Area Capture and Pull Factor Estimates, 1992**

	Population, 1992	Per Capita Income, 1990	
State:	3,207,000	11,893	Primary Trade Area: Stillwater
Primary:	37,300	10,747	Secondary Trade Area: Payne, Pawnee, and Noble Counties
Secondary:	89,190	10,828	

SIC Code	Retail Categories	<u>Actual Retail Sales, 1992</u>			<u>Trade Area Capture</u>		<u>Pull Factor</u>	
		<u>Oklahoma</u>	<u>Primary Trade Area</u>	<u>Secondary Trade Area</u>	<u>Primary Trade Area</u>	<u>Secondary Trade Area</u>	<u>Primary Trade Area</u>	<u>Secondary Trade Area</u>
52	Building Materials & Garden Supplies	\$909,892,000	\$18,187,000	D	70,937	D	1.902	D
53	General Merchandise	\$3,295,271,000	D	D	D	D	D	D
54	Food Stores	\$4,183,679,000	\$54,890,000	\$112,652,000	46,563	94,847	1.248	1.063
55	Automotive Dealers	\$5,262,209,000	\$52,174,000	\$80,067,000	35,188	53,595	0.943	0.601
56	Apparel & Accessories	\$935,505,000	\$21,067,000	D	79,921	D	2.143	D
57	Furniture & Home Furnishings	\$841,020,000	\$13,040,000	D	55,027	D	1.475	D
58	Eating & Drinking Places	\$2,166,239,000	\$33,502,000	\$53,725,000	54,887	87,360	1.471	0.979
59	Misc. Retail	\$1,358,902,000	D	D	D	D	D	D

Source: Census of Retail Trade, 1992  
D-Not Reported Due to Disclosure Rules

This value implies that for food stores, the primary trade area, Stillwater, is attracting a larger number of customer equivalents than would normally be drawn from the local population. The primary trade area has pull factors greater than one in apparel and accessory (2.143), building materials and garden supplies (1.902), furniture and home furnishings (1.475), eating and drinking places (1.471), and food stores (1.248). The pull factor for automotive dealers is slightly less than one. These results indicate the primary trade area is doing well in most categories. Automotive dealers may have the greatest need to capture more sales locally.

Some categories cannot be calculated due to disclosure laws. Federal law prohibits the publication of data that would disclose the operations of an individual business. For example, if a category is comprised of only one or two businesses, the amount of retail sales in that category is not reported due to disclosure laws. The data are included in broader kind-of-business totals.

The secondary trade area has the largest pull factors in the categories gasoline service stations (1.432) and food stores (1.063). These numbers are not surprising since items in these categories tend to be routinely purchased goods that people are more likely to buy locally. The remaining categories have pull factors either less than one or which cannot be calculated due to disclosure laws.

Table 3-9 presents fiscal year 1997 trade area capture and pull factor estimates for the primary trade area that were calculated using Oklahoma Tax Commission data. By using this data source, more recent estimates can be calculated. In addition, data for every category are available. Fiscal year 1997 sales tax collections were obtained from the Oklahoma Tax Commission. Using the data and Stillwater's city sales tax rate,

approximate taxable sales were calculated. For most years, per capita income is only available on a county level. Therefore, when calculating trade area capture and pull factor estimates for Table 3-9, Payne County per capita income was used for Stillwater's per capita income.

**Table 3-9**  
**Trade Area Capture and Pull Factor Estimates for Primary Trade Area, FY 1997**

<u>Population, 1996</u>		<u>Per Capita Income, 1996</u>	
State:	3,300,900	City Sales Tax Rate:	3.00%
Primary:	38,490	Oklahoma:	\$19,219
		Payne Co.:	\$17,227

<u>SIC Code</u>	<u>Retail Categories</u>	<u>Collections</u>	<u>Approximate Taxable Sales</u>	<u>Trade Area Capture</u>	<u>Pull Factor</u>
52	Building Materials & Garden Supplies	\$814,961.19	\$27,165,373.00	61,194.13	1.590
53	General Merchandise	\$2,664,050.71	\$88,801,690.33	71,977.78	1.870
54	Food Stores	\$1,480,961.52	\$49,365,384.00	43,441.17	1.129
55	Automotive Dealers	\$253,124.68	\$8,437,489.33	30,429.30	0.791
56	Apparel & Accessories	\$460,765.21	\$15,358,840.33	73,280.48	1.904
57	Furniture & Home Furnishings	\$505,938.94	\$16,864,631.33	36,237.37	0.941
58	Eating & Drinking Places	\$1,375,664.15	\$45,855,471.67	66,404.62	1.725
59	Misc. Retail	\$949,451.45	\$31,648,381.67	54,610.18	1.419

Source: Oklahoma Tax Commission

Automotive Dealers (55) and Furniture and Home Furnishings (57) are the only categories that have pull factor values less than one. Comparing table 3-8 and table 3-9, all values are lower in table 3-9 with the exception of Eating and Drinking places (58).

Care must be taken, though, when comparing the two tables because different data sources were used.

Table 3-10 shows the potential and actual sales for the primary and secondary trade areas. To calculate potential retail sales, one assumes that local consumers have similar spending habits to those of the entire state. Actual retail sales for the state of Oklahoma by SIC categories are obtained from the 1992 Census of Retail Trade. Using population data from the U.S. Census, state per capita retail sales are calculated for each SIC category. Potential Retail Sales are calculated by multiplying state per capita sales by the primary and secondary trade area populations. For example consider the category of food stores (54):

$$\text{Per Capita Sales} = \frac{\$4,183,679,000}{3,207,000} = \$1,304.46,$$

$$\text{Stillwater Potential Sales} = \$1,304.46 * 37,300 = \$48,656,531,$$

$$\text{Secondary Trade Area Potential Sales} = \$1,304.46 * 89,190 = \$112,652,000$$

If actual sales are higher than potential sales, the area is either attracting consumers from outside of the trade area, or the local population is spending more on average than other consumers in the state. If actual sales are less than potential sales, consumers in the area are either shopping outside of the trade area or are spending less on average than other consumers in the state.

The primary trade area is doing well in most SIC categories. The only category shown to have higher potential sales than actual sales is Automotive Dealers (SIC 55). This may be a category the primary trade area will want to focus on improving. Results

for the General Merchandise and Miscellaneous Retail sectors could not be calculated because the data were not reported due to disclosure laws.

For all categories that could be calculated for the secondary trade area, the secondary trade area had lower actual sales than potential sales. Businesses in the trade area may need to focus on attracting consumers from the local area.

**Table 3-10**  
**Potential and Actual Sales by SIC Categories, 1992**

<u>SIC Code</u>	<u>Retail Categories</u>	<u>Actual Sales, Oklahoma</u>	<u>Per Capita Sales</u>	<u>Primary Trade Area Potential</u>	<u>Primary Trade Area Actual</u>	<u>Secondary Trade Area Potential</u>	<u>Secondary Trade Area Actual</u>
52	Building Materials & Garden Supplies	\$909,892,000	\$283.72	\$10,582,779	\$18,187,000	\$25,305,041	D
53	General Merchandise	\$3,295,271,000	\$1,027.52	\$38,326,663	D	\$91,644,908	D
54	Food Stores	\$4,183,679,000	\$1,304.55	\$48,659,566	\$54,890,000	\$116,352,457	\$112,652,000
55	Automotive Dealers	\$5,262,209,000	\$1,640.85	\$61,203,740	\$52,174,000	\$146,347,496	\$80,067,000
56	Apparel & Accessories	\$935,505,000	\$291.71	\$10,880,679	\$21,067,000	\$26,017,365	D
57	Furniture & Home Furnishings	\$841,020,000	\$262.25	\$9,781,742	\$13,040,000	\$23,389,639	D
58	Eating & Drinking Places	\$2,166,239,000	\$675.47	\$25,195,109	\$33,502,000	\$60,245,356	\$53,725,000
59	Misc. Retail	\$1,358,902,000	\$423.73	\$15,805,128	D	\$37,792,476	D

Source: Census of Retail Trade, 1992  
D-Not Reported Due to Disclosure Rules

This table is a summary of the data in the Census of Retail Trade, 1992. It is not intended to be used for statistical purposes. The data are subject to revision.

According to Joncas, if the retail sales in the trade area total more than the retail sales of the community, it could mean that customers in the trade area are probably buying (sales surplus), it could mean:

- that people from outside the trade area (tourists) are coming to the community to shop;
- that the community is a regional center, drawing from a larger area than first estimated; or
- that people in the trade area spend more than the average household.

Conversely, Joncas states, if the retail sales in the trade area are less than the retail sales of the community, it could mean that consumers in the trade area are probably buying (sales leakage), it could mean:

- that the downtown and the trade area are losing sales to other shopping centers;
- that the trade area is smaller than originally estimated; or
- that the trade area households spend less than the average household.

If retail sales in the trade area are approximately what local consumers are expected to buy, it does not mean the area is capturing all of its potential local sales. For example, it could mean the sales lost to neighboring cities are being replaced with sales to tourists (Joncas). The development team must remember the retail trade flow analysis is not an exact science and only provides a starting point for further analysis. Joncas notes accuracy problems often result from the fact that the numbers used in calculation are:

- from different years;
- not completely comparable – for example, various sources of data categorize retail types in different ways;



- based on the spending patterns of an “average” household and the local trade “average” and/or;
- estimates themselves, making the answers estimates of estimates.

The information obtained in a retail sales analysis requires careful interpretation. The development team should examine results in light of what is known about the retail mix, competition, and customer preferences (Joncas). Whatever the limitations of retail trade flow analysis, the methods can identify and confirm market opportunities.

### **Trade Area Surveys**

Entrepreneurs know it is easier to get existing customers to buy more goods than it is to attract new customers (Joncas). Therefore, customers who are already patronizing stores are the best targets for new businesses and for expanded lines of goods and services in existing businesses (Joncas). For this reason, the development team needs to discover the needs of these consumers, as well as their perceptions of the market area. Surveys provide some of the best opportunities to find this information.

Different types of surveys exist that supply various types of information. Conducting a business owner survey will show whom businesses perceive their customers are. In addition, business owners will give their perceptions of the market area. A customer survey will allow the team to find out the opinions of the customers. This will give them insight into the perceptions of the customers, their needs and preferences, and their ideas for change. Customer surveys can be conducted in various ways including mailing the survey, intercepting customers on the street, and surveying

residents over the phone. In addition the team can go to specific target groups to find out their preferences and perceptions.

The business owner survey should be given to every business in the area. The owners should be comfortable with those conducting the survey and will want to know who will have access to the information and how it will be used. The most practical method to get a complete response may be to mail the survey to businesses and have volunteers follow up and interview the business owners who don't mail the survey back (Joncas). Subjects the development team may want to include in the survey follow: profile of the business's primary customer; business operations (hour of operations, best sales volume time of day, week, or year, most effective media, number of employees, etc.); perceptions of market area characteristics (parking, cleanliness, traffic, shopping hours, promotions, cost of goods, types of businesses, selections, service, etc.); and other businesses needed in area.

The information sought in a customer survey is similar to that of the business owner survey. Subjects the development team may want to include in the survey follow: profile of the customer (sex, age, household size, household income, place of residence, occupation, etc.); shopping preferences (how often they visit the market area, purpose for the trip, where they shop, media used for shopping information, time when they are most likely to shop, etc.); perception of the shopping area (parking, cleanliness, traffic, shopping hours, promotions, cost of goods, types of businesses, selections, service, etc.); and other businesses needed in the market area.

Before conducting a survey, the team may want to seek the help of a professional who is knowledgeable in creating and administering surveys. Surveying is a technical

skill, and the team might easily make a mistake that results in incorrect or unusable data. Technique and skill of the interviewer and question design are important to getting quality results (Joncas).

### **Summary and Conclusions**

In this chapter, a model approach for conducting a market analysis was explained. Examples were included to demonstrate possible ways to present data. In the example, 1990 Census data were used to describe the demographics of Stillwater. More current data were available to describe the counties comprising the secondary trade area. Every effort should be made to use the most current data available.

As a final step to the market analysis, the development team needs to summarize the findings and expand on the implications of the study. This provides a quick reference for existing and prospective businesses to use when making business decisions. For example, consider the summary and implications of the market study of Stillwater, Oklahoma.

#### Example for Stillwater, Oklahoma

The primary trade area for this market study was considered to be the city of Stillwater. The secondary trade area was defined as Payne, Pawnee, and Noble counties. The development team, comprised of local businessmen and women, recognized that this is not the exact area of the trade region. However, although census tract data can be used to estimate the population, other demographic statistics are not available for a trade area comprised of partial counties. The development team assumed that the consumers in

Pawnee and Noble counties that may actually shop elsewhere would compensate for those consumers in Creek, Lincoln, and Logan counties that are not included in the study. In addition, a previous market analysis of Stillwater defined the secondary trade area Payne, Pawnee, and Noble counties. Using the same definition in both studies makes comparisons easier.

### Demographic Information

Since 1989, the population of Stillwater, the primary trade area, has grown steadily. This growth is projected to continue. This indicates a stable and growing market base in the primary trade area. In 1990, median household and non-family income levels in Stillwater were lower than that of the state, however, median family income was higher than that of the state's. Therefore, businesses may want to target families in their advertising and offer goods and services a typical family would buy (such as toys, games, children's movies, children's clothing, etc.). Also, in comparing Stillwater's distribution of population by age with that of the state, Stillwater has a larger proportion of residents ages 18 to 24. One would expect this statistic in a town having a major university. Stillwater needs businesses providing goods and services to this age group (fast food restaurants, trendy clothing stores, movie theaters, music stores, etc.).

From 1980 to 1996, population in the secondary trade area grew 2.1%.

Population in these three counties is projected to continue increasing, providing a growing market population for businesses.

All three counties in the secondary trade area have shown an increase in the number of residents ages 65 and over. This segment has increased in Payne, Pawnee, and Noble counties by 28.1%, 15.2%, and 6.0% respectively. Projections indicate this group

will increase over 37% from 1997 to 2020 in all three counties. These statistics show an aging secondary trade area with a favorable prospective market for business providing goods and services to this older group. In addition, the population of those under age 15 is projected to increase in the secondary trade area from 1997 to 2020, indicating a youthful resource of future workers.

#### Retail Trade Flow Analysis

When using Oklahoma Tax Commission data to calculate pull factors for Stillwater for 1997, only two categories has pull factor values less than one: Automotive Dealers and Furniture and Home Furnishings. These results indicate the primary trade area is doing well in most categories. Automotive dealers and furniture and home furnishing stores may have the greatest opportunity to capture more sales locally. The categories Apparel and Accessories, General Merchandise, and Food Stores have the highest pull factors with values of 1.904, 1.870, and 1.725 respectively.

The secondary trade area has the largest pull factors in the categories gasoline service stations (1.432) and food stores (1.063). These numbers are not surprising since items in these categories tend to be routinely purchased goods that people are more likely to buy locally. These figures indicate businesses in the other categories have an opportunity to attract more consumers from the secondary trade area.

## CHAPTER 4

### METHOD OF ANALYSIS

#### Approach

Successful outreach programs focus on improving the capture of local retail demands. To develop such a strategy, information from an analysis of local retail sales potential and its capture is required. Sales retention is an indirect measure of locally available goods and services assuming local people would buy locally if the product or service were available and competitively priced (Ebai and Harris).

Trade area analysis, rooted in central place theory, is one approach to measure potential retail sales. Central place theory predicts that a hierarchy of communities exists where the number of retail functions performed at a community increases as the size or order of a community increases (King). The varieties of retail goods offered by a community depend upon demand and supply conditions locally as well as the distance a consumer would normally travel to obtain a particular good (Ebai and Harris). Two trade area analysis procedures commonly used are trade area capture and pull factor.

Trade area capture is based on the assumption that after accounting for income differences, local tastes and preferences are similar to that of the state or reference area.

$$(4-1) \quad TAC_{ij} = \frac{RS_{ij}}{\frac{RS_{is} * PCI_j}{POP_{is} * PCI_s}}$$

where:

$TAC_{ij}$  is the trade area capture estimate for merchandise type  $i$  in county (or city)  $j$ ,

$RS_{ij}$  is total sales of merchandise type  $i$  in county (or city)  $j$ ,

$RS_{is}$  is total sales of merchandise type  $i$  in state  $s$ ,

$POP_s$  is population in state  $s$ ,

$PCI_j$  is per capita income in county (or city)  $j$ , and

$PCI_s$  is per capita income in state  $s$ .

Ebai and Harris, however, reference previous studies that excluded the relative per capita income calculation,  $\frac{PCI_j}{PCI_s}$ , from the estimate of  $TAC_{ij}$ . Thus  $TAC_{ij}$  is derived using the following modified equation:

$$(4-2) \quad TAC_{ij} = \frac{RS_{ij}}{\frac{RS_{is}}{POP_s}}$$

The modified equation is useful when trade area capture or pull factor estimates are the dependent variable in a model containing per capita income as an independent variable.

Trade area capture measures purchases of both residents and nonresidents. Therefore, making comparisons with regions of different sizes and for assessing trends over time is difficult. In these cases, the pull factor is useful. The pull factor calculates the proportion of consumers that a county draws from outside its boundaries.

$$(4-3) \quad PF_{ij} = \frac{TAC_{ij}}{POP_j}$$

where:

$PF_{ij}$  is the pull factor for merchandise  $i$  in county (or city)  $j$ ,

$TAC_{ij}$  is the trade area capture estimate for merchandise  $i$  in county (or city)  $j$ , and  
 $POP_j$  is the population in county (or city)  $j$ .

A pull factor greater than one may be interpreted to mean that the county is attracting a larger number of customer equivalents than would normally be drawn from the local population, assuming their level of purchases were similar to the statewide average. Conversely, a pull factor less than one implies the retail purchases of local residents are not being captured by the local commercial sector.

Trade area analysis, although a useful tool, does not give information about the impact of exogenous variables affecting rural retail activity. In their paper, Ebai and Harris used Tobit estimation procedures for eight retail sectors to determine factors that influence the capture of local and non-local retail demands. A Tobit model is used to correct for censored data estimation problems. The Tobit procedure recognizes all pull factors less than one as zero and those equal to or greater than one as their calculated value. The Tobit model analyzes first the differences between zero and non-zero values then, differentiating on the basis of explanatory values, between varying pull factor values greater than one (Ebai and Harris).

The variables used in this study are similar to those used by Ebai and Harris. Originally, the possibility of using a Tobit model was explored. However, the values for the dependent variable, pull factors for a sample of Oklahoma cities, were not censored around one. Rather, they ranged in magnitude from zero to above five as shown in Table 4-1. Also, the mean value for six of the categories was less than one. In using the Tobit procedure, pull factor values less than one would be recognized as zero. In this data set over fifty percent of the pull factor values in seven of the eight retail categories would be



recognized as zero; in the furniture and home furnishings category, over ninety percent of the pull factor values were less than one. This indicates a Tobit model would not utilize the available data in the best way. Another procedure might better estimate the model. Therefore, Ordinary Least Squares (OLS) was used to estimate a linear model.

**Table 4-1. Dependent Variable Statistics**

	Mean	Standard Deviation	Min.	Max.	% with Pull Factor Less Than One
Pull Factor for SIC 52 Building, Gardening & Merchandising	0.782	0.58829	0.025	2.901	72.39
Pull Factor for SIC 53 General Merchandise	0.859	1.0487	0.001	5.573	63.19
Pull Factor for SIC 54 Food Stores	1.424	0.68124	0.094	3.615	27.61
Pull Factor for SIC 55 Auto Dealers and Gasoline Stations	1.013	0.73106	0.003	3.713	53.37
Pull Factor for SIC 56 Apparel and Accessory Stores	0.551	1.6957	0.000	2.774	85.89
Pull Factor for SIC 57 Furniture and Home Furnishings	0.462	0.51573	0.001	3.550	90.18
Pull Factor for SIC 58 Eating and Drinking Places	0.878	0.63133	0.000	4.043	60.74
Pull Factor for SIC 59 Miscellaneous Retail	0.632	0.45482	0.000	3.018	84.66

The equation used to determine the effect of exogenous variables such as the Oklahoma Main Street Program on retail activity is given as the following:

$$PF = f(PCI, AGE1, AGE2, POP, DMSA, EB, MS, CS)$$

where:

PF is the pull factor value for a given retail sector of an Oklahoma town;

PCI is the per capita income for the county the city is located in. It is assumed the city's per capita income equals the county per capita income;

AGE1 is percent of each city's population between the ages of 18 and 64 relative to the state;

AGE2 is percent of each city's population 65 years and older relative to the state;

DMSA is distance to the central city in the nearest metropolitan statistical area;

EB is a set of dummy variables representing the economic base for the county the city is located in. Counties are first designated by the United States Department of Agriculture as either metropolitan or non-metropolitan. The non-metropolitan counties are then classified as one of the following: farming-dependent, mining-dependent, manufacturing-dependent, government-dependent, services-dependent, and non-specialized. Table 4-2 contains the definitions for the non-metropolitan classifications.

MS is a dummy variable where a value of one represents cities participating in the Oklahoma Main Street Program and zero otherwise;

CS is a dummy variable where a value of one represents cities that are county seats and zero otherwise;

Eight broad Standard Industrial Classification (SIC) categories exist for retail sales: (52) Building Materials and Garden Supplies; (53) General Merchandise; (54) Food Stores; (55) Automobile Dealers and Gasoline Stations; (56) Apparel and Accessory Stores; (57) Furniture and Home Furnishings; (58) Eating and Drinking Places; and (59) Miscellaneous Retail. The above model is run separately for each of these SIC categories for 1996. It is expected that different exogenous variables may have

different effects on the pull factors depending on the sector being analyzed. SHAZAM, an econometrics computer program, is used to perform these Ordinary Least Squares regressions.

Table 4-2. Definitions of USDA Non-metropolitan County Designations

Classification	Definition
Farming-dependent	Farming contributed a weighted annual average of 20 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989.
Mining-dependent	Mining-dependent--Mining contributed a weighted annual average of 15 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989.
Manufacturing-dependent	Manufacturing contributed a weighted annual average of 30 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989.
Government-dependent	Government contributed a weighted annual average of 25 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989.
Services-dependent	Service activities (private and personal services, agricultural services, wholesale and retail trade, finance and insurance, transportation and public utilities) contributed a weighted annual average of 50 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989.
Non-specialized	Counties not classified as a specialized economic type over the 3 years from 1987 to 1989.

Source: Cook and Mizer

### Hypotheses

The different dependent variables are hypothesized to affect pull factors in varying ways. An increase in per capita income is expected to increase the demand for

certain types of retail goods while not affecting or even decreasing the demand for other types of goods. For example, demand for a luxury good, such as jewelry, should increase with an increase in per capita income. On the other hand, people will demand food products regardless of their income level. Thus, an increase in per capita income may have no effect on the food store sector.

Percent of county's population between 18 and 64 relative to the state should incorporate the mobility of the younger or working age population, as well as the demands of families with more than two members (Ebai and Harris). The effect of this variable may differ in magnitude depending on the SIC category being analyzed. For example, most people, regardless of age, generally buy routine, low cost items near home. Thus, pull factors for food stores (SIC 54) may not be adversely affected by a more mobile population. However, categories consisting of non-routine, high cost items such as furniture (SIC 57) may be negatively affected by a mobile population that can search out the best prices.

Assuming the retired population (Age 65+) is less mobile and mainly consists of only one or two members of the household, its impact on local retail demand may differ from that of the working age population (Ebai and Harris). For example, a town consisting of a larger population of retirees may have higher pull factors because this less mobile population is expected to do more shopping within their own town.

Population is hypothesized to positively affect pull factors. Higher order centers, described in central place theory, are more complex, offer a greater range of goods and services, have more retail establishments, and serve a larger area than lower order centers; lower order centers supply a lesser range of goods and services to a smaller area.

(Flood and Schreiner). Therefore, higher order towns with larger populations are expected to have a large variety of retail establishments for people to buy from. These communities should capture retail purchases from their own residents, as well as attract customers from outside the area. Thus, pull factors are hypothesized to increase as population increases. Distance to a metropolitan statistical area (MSA) is hypothesized to increase pull factors. Incorporating the disutility of transportation, the further away from a metropolitan area, the greater the propensity for higher relative trade area activity (Ebai and Harris).

The economic base dummy variables are not expected to all affect the pull factor positively or negatively; some may increase pull factors while others may decrease pull factors. Metropolitan areas are generally hypothesized to have higher pull factors. However, if a smaller town is located in a metropolitan county, it will likely have lower pull factors due to its proximity to the central city in the metropolitan area. In addition, some of these variables may have large effects on some retail categories while having little or no effect on other categories. To avoid perfect multicollinearity, one of the dummy variables in this group was omitted. The manufacturing-dependent variable was omitted because this classification contained the fewest counties. The effect of this variable will be shown by the constant.

The Main Street variable is expected to increase pull factors. The Oklahoma Main Street Program helps a community create an organized plan of action for the town. In addition, the program assists communities in finding resources to complete these goals. Therefore, with the assistance of this program, communities work towards improving retail sales in the town. The county seat variable is also hypothesized to increase pull

factors. Since most of the government functions of a county are based in the county seat town, one would expect a larger inflow of people into this town as opposed to other communities in the county. Businesses in county seat towns will try to profit from this inflow of potential customers. Therefore, county seat towns are expected to develop as a county trade center.

### **Data Sources**

Data were collected for 163 Oklahoma communities. The towns included in the study were those that fell into a certain population range and for which the Oklahoma Tax Commission kept sales tax collection data. The towns in the study ranged in population from 1,000 to 45,720. This population range included most towns involved in the Main Street Program. Towns under 1,000 have few retail establishments and, thus, were assumed to have small or no measurable pull factors. Only seven Oklahoma cities have a population greater than 45,720. Because of their large population, these cities were considered outliers that did not belong in the study.

The data for the model came from a multitude of sources. Population estimates for 1996 were acquired from the U.S. Census Bureau. Raw sales tax data were obtained from the Oklahoma Tax Commission for fiscal year 1997 for the towns in the study and for the state of Oklahoma. Using sales tax rates, these figures were converted into an estimate of retail sales.

Per capita income figures for individual towns are available in the 1990 Census. More recent numbers are available for counties. For this study, county figures for 1996 were obtained from Woods & Poole Economics, Inc., an independent corporation. Per

capita income for the individual towns in the study is assumed to be equal to the per capita income of the county the town is located in. Distribution of population by age was acquired from the U.S. Census Bureau for 1996.

Distances from towns to the central city of the nearest MSA were calculated using *Microsoft Automap Trip Planner*. The economic base classifications of Oklahoma counties were obtained from the USDA Economic Research Service. The list of towns participating in the Oklahoma Main Street Program was acquired from the Oklahoma Department of Commerce. Twenty-four of the towns in the sample are involved in the Main Street Program. Finally, county seat towns were identified on an Oklahoma map. Sixty-two of the towns in the sample are county seats. Table 4-3 shows sample characteristics for the independent variables employed in this analysis.

**Table 4-3. Statistics for Independent Variables**

	Mean	Standard Deviation	Minimum	Maximum
Per Capita Income	17,646	2,745.8	12,645	27,564
% of Population 18-64 Relative to the State	0.93397	0.08449	0.66375	1.2466
% of Population 65+ Relative to the State	1.3853	0.51138	0.26710	2.6233
Population	6,596	8,318.9	1,000	45,720
Distance to MSA	47.160	28.765	3.90	165.20
Metropolitan	0.34356	0.47636	0.0	1.0
Farming-Dependent	0.12883	0.33605	0.0	1.0
Mining-Dependent	0.05522	0.22910	0.0	1.0
Manufacturing-Dependent	0.06749	0.25163	0.0	1.0
Government-Dependent	0.07976	0.27175	0.0	1.0
Services-Dependent	0.07362	0.26196	0.0	1.0
Non-specialized	0.25153	0.43523	0.0	1.0
Main Street	0.14724	0.35544	0.0	1.0
County Seat	0.38037	0.48697	0.0	1.0



## **CHAPTER 5**

### **RESULTS OF ANALYSIS**

#### **Estimation of Equations**

Equations for the eight retail sectors were estimated using Ordinary Least Squares (OLS). After estimation, the equations were tested for heteroscedasticity using the Harvey Test Statistic produced by the DIAGNOS / HET command in SHAZAM. At the ninety-five percent level and with fifteen degrees of freedom, a Chi-Square ( $\chi^2$ ) value above 25.00 indicated the model violated the null hypothesis of homoscedasticity. If heteroscedasticity was detected, a weighted least squares procedure was used to correct the understatement of standard errors. Six of the eight equations indicated violation of the null hypothesis: General Merchandise, Food Stores, Automotive Dealers, Apparel and Accessory, Furniture and Home Furnishings, and Miscellaneous Retail. In addition, correlation between the variables was examined by looking at the correlation matrix of variables produced by SHAZAM. No noteworthy correlation between any two variables was found.

#### **Results for Building Materials and Garden Supplies, SIC 52**

Parameter estimates, t-scores, and the r-square value for the Building Materials and Garden Supply Stores sector (SIC 52), are shown in Table 5-1. Five of the variables

are statistically significant from zero at the ninety-five percent level: per capita income, population ages 18 to 64, government-dependent, services-dependent, and county seat.

**Table 5-1. Parameter Estimates, T-scores, and R-square Value for SIC 52, Building Materials and Garden Supplies**

Variable	Parameter Estimate	t-score for Ho:
Intercept	0.58194	0.9106
Per Capita Income	0.000073248	3.848*
Population 18-64	-1.3454	-2.399*
Population 65+	-0.072021	-0.6737
Population	0.0000066946	1.038
Distance to MSA	-0.0008767	-0.4522
Metropolitan	0.0002238	0.001235
Farming-Dependent	-0.13604	-0.6790
Mining-Dependent	0.23683	1.028
Government-Dependent	0.55418	2.548*
Services-Dependent	0.44206	2.039*
Non-specialized	0.15529	0.8889
Main Street	0.061678	0.4813
County Seat	0.29261	2.873*
R-square	0.3472	

\*Significant at the ninety-five percent level

A positive and significant coefficient for per capita income supports the hypothesis that as the per capita income of the county the city is located in increases, the pull factor will increase. This is to be expected since those with higher incomes will have more excess money to spend on goods other than necessity items. In addition, those with

higher incomes are likely to own a house and would purchase building materials and garden supplies more frequently than those who do not own a home.

A negative and significant coefficient for population ages 18 to 64 indicates as a city's proportion of those between the ages of 18 to 64 relative to the state increases, the pull factor will decrease. This age group is expected to contain those supporting a family with more than two people. Therefore, this group may be spending a larger proportion of their income on other items such as clothes, food, college expenses, etc. Towns located in counties classified as government-dependent or services-dependent are shown to have higher pull factors than the towns located in other counties. Hamrick presented projections by the U.S. Bureau of Labor that showed growth in employment in the next ten years is more likely to occur in service and retail industries. Thus, services-dependent and even government-dependent counties may be experiencing economic growth in general as opposed to counties in the other classifications.

The economic base variables were tested as a group with the following hypotheses:

$$H_0: \text{MET} = \text{FARM} = \text{MIN} = \text{GOV} = \text{SER} = \text{NON} = 0$$

$$H_a: \text{MET} = \text{FARM} = \text{MIN} = \text{GOV} = \text{SER} = \text{NON} = 0.$$

When tested, the F-value was large enough to reject the null hypothesis. For this retail sector, the county classification dummy variables are important in the equation.

The fifth variable that is significant is the county seat dummy variable. Towns that are county seats have higher pull factors than those that are not. This is expected since county seat towns are often regional trade centers. The r-square value for the model is 0.3472.

## Results for General Merchandise, SIC 53

Table 5-2 shows parameter estimates, t-scores, and the r-square value for the General Merchandise sector (SIC 53). The intercept and three of the variables are statistically significant from zero at the ninety-five percent level: per capita income, population, and county seat.

**Table 5-2. Parameter Estimates, T-scores, and R-square Value for SIC 53, General Merchandise**

Variable	Parameter Estimate	t-score for Ho:
Intercept	1.5547	2.349*
Per Capita Income	-0.000049537	-2.722*
Population 18-64	-0.90950	-1.746
Population 65+	0.10571	1.039
Population	0.000084334	7.485*
Distance to MSA	0.0031591	1.516
Metropolitan	-0.038348	-0.1820
Farming-Dependent	-0.25880	-1.174
Mining-Dependent	0.31754	1.108
Government-Dependent	-0.30635	-1.074
Services-Dependent	0.49464	1.187
Non-specialized	-0.10544	-0.5070
Main Street	-0.20542	-1.168
County Seat	0.55292	4.217*
R-square	0.4958	

\*Significant at the ninety-five percent level

The results show if per capita income increases in the county the town is located in, the pull factor value is negatively impacted. Those with higher per capita incomes may desire to shop in more specialized retail outlets as opposed to a general merchandising store. In addition, as population increases, the pull factor value will increase. As towns increase in size, they are expected to become trade centers with a large variety of stores. These trade centers attract local customers, as well as customers from outside the city. The other significant exogenous variable is the county seat dummy variable. Again, county seats are likely regional trade centers, and as such, will have larger pull factors relative to towns that are not county seats. The r-square value for this sector is 0.4958.

#### **Results for Food Stores, SIC 54**

Table 5-3 shows parameter estimates, t-scores, and the r-square value for the Food Stores sector (SIC 54). The intercept and five of the variables are statistically significant from zero at the ninety-five percent level: population ages 18 to 64, population, metropolitan, farming-dependent, and county seat.

A negative and significant coefficient for population ages 18 to 64 indicates as a city's proportion of those in the age range of 18 to 64 relative to the state increases, the pull factor will decrease. This age group contains the working age population. They are generally more mobile than the retired population and may shop outside of their town. In addition, if they work in a different community, they may shop in the community they work in rather than the community they live in. In addition, members of this age group may eat away from home often.

**Table 5-3. Parameter Estimates, T-scores, and R-square Value for SIC 54, Food Stores**

Variable	Parameter Estimate	t-score for Ho:
Intercept	2.9044	4.972*
Per Capita Income	0.000019202	1.053
Population 18-64	-1.5755	-3.472*
Population 65+	-0.096125	-0.8501
Population	-0.000012002	-2.725*
Distance to MSA	-0.00020535	-0.1291
Metropolitan	-0.36828	-2.588*
Farming-Dependent	-0.56332	-4.333*
Mining-Dependent	-0.35018	-1.194
Government-Dependent	-0.16861	-1.066
Services-Dependent	0.036090	0.1908
Non-specialized	-0.21593	-1.594
Main Street	-0.10505	-0.9406
County Seat	0.44204	5.302*
R-square	0.4389	

\*Significant at the ninety-five percent level

A significant, negative coefficient for population is an unexpected result and may require further research to explain. Towns located in metropolitan or farming-dependent counties are shown to have lower pull factors than towns that are not. Small to medium-sized cities, such as those in the data set, that are located in a metropolitan county are likely to have lower pull factors due to the proximity to the central city in the metropolitan area. Many farming-dependent counties are declining in population, and the general economic health of these counties may be weakening because of the decline in agriculture. Businesses in these communities may have shrinking markets that result in

lower pull factors. When tested as a group, the county classification dummy variables were not found to be significant.

The county seat dummy variable was also significant in this sector. The positive parameter estimate indicates county seat towns will have larger pull factors than other towns. The r-square value for this model is 0.4389.

### **Results for Automotive Dealers, SIC 55**

Parameter estimates, t-scores, and the r-square value for the Automotive Dealers sector (SIC 55), are shown in Table 5-4. Three of the variables are statistically significant from zero at the ninety-five percent level: per capita income, farming-dependent, and county seat.

As per capita income of the county increases, the pull factor of the town is positively influenced. Those with higher incomes are more likely to own one or more vehicles than those with a lower income. Therefore, they may have a higher demand for the products offered by this sector. Towns located in farming-dependent counties are shown to have lower pull factors in this sector than other towns. Individuals in these counties do not have as high a demand for the services of this sector. This may be due to the fact that many individuals involved in farm work tend to repair their vehicles themselves. County seat towns are again shown to have higher pull factors than towns that are not county seats. The r-square value for the equation is 0.4211.

**Table 5-4. Parameter Estimates, T-scores, and R-square Value for SIC 55, for SIC 55, Automotive Dealers**

Variable	Parameter Estimate	t-score for Ho:
Intercept	0.32313	0.4759
Per Capita Income	0.000048251	1.999*
Population 18-64	-0.27145	-0.4927
Population 65+	0.10589	0.9036
Population	-0.0000015434	-0.3797
Distance to MSA	0.0025588	1.443
Metropolitan	-0.38197	-1.521
Farming-Dependent	-0.85308	-3.267*
Mining-Dependent	-0.43084	-0.9462
Government-Dependent	-0.44694	-1.623
Services-Dependent	0.022346	0.09036
Non-specialized	-0.39860	-1.602
Main Street	-0.0075455	-0.07872
County Seat	0.48079	5.367*
R-square	0.4211	

\*Significant at the ninety-five percent level

### **Results for Apparel and Accessory, SIC 56**

Table 5-5 shows parameter estimates, t-scores, and the r-square value for the Apparel and Accessory Stores sector (SIC 56). Eight of the variables are statistically significant from zero at the ninety-five percent level: population, distance to the nearest MSA, metropolitan, farming-dependent, mining-dependent, government-dependent, non-specialized, and county seat.



A positive and significant coefficient for population supports the hypothesis that as population increases, the pull factor will increase. Higher order towns, as described in central place theory, with larger populations are expected to have a large variety of retail establishments for people to buy from. These communities should capture retail purchases from its own residents as well as attract customers from outside the area. In addition, as distance to the nearest metropolitan statistical area increases, the pull factor is positively influenced. The residents in these towns would need to travel greater distances to shop in larger cities and would likely support local stores to avoid a long trip.

Towns located in counties classified as metropolitan, farming-dependent, mining-dependent, government-dependent, or non-specialized are shown to have decreased pull factors. If a city is located in a county other than manufacturing-dependent or services-dependent, the city's pull factors will be negatively affected by the county classification variable. Services dependent counties are generally in a stage of economic growth. Therefore, cities located in these counties would not be negatively affected by this classification. The fact that the large cities in the metropolitan counties have been omitted from this study may be why the metropolitan-dependent variable has a negative parameter estimate. In addition, non-metropolitan counties may not be able to support apparel and accessory stores. Given the variety of these types of stores located in large cities and the lower prices these stores can offer, people may always prefer to shop in the large metropolitan areas. Furthermore, the accessibility of mail order catalogs may contribute to the lower pull factors in non-metropolitan counties. When tested as a group, county classification dummy variables were found to be significant determinants of pull

factor values. Also, county seat towns have increased pull factors. The model for this sector has an r-square value of 0.4757.

**Table 5-5. Parameter Estimates, T-scores, and R-square Value ,  
for SIC 56, Apparel and Accessory**

Variable	Parameter Estimate	t-score for Ho:
Intercept	0.26403	0.8141
Per Capita Income	-0.0000031945	-0.4741
Population 18-64	0.13403	0.5828
Population 65+	0.072559	1.824
Population	0.000024771	6.035*
Distance to MSA	0.0026646	2.745*
Metropolitan	-0.50877	-2.530*
Farming-Dependent	-0.57594	-2.802*
Mining-Dependent	-0.45239	-2.147*
Government-Dependent	-0.48072	-2.196*
Services-Dependent	-0.26598	-0.8950
Non-specialized	-0.47842	-2.386*
Main Street	0.021661	0.2360
County Seat	0.19502	3.390*
R-square	0.4757	

\*Significant at the ninety-five percent level

### **Results for Furniture and Home Furnishings, SIC 57**

Table 5-6 contains parameter estimates, t-scores, and the r-square value for the Furniture and Home Furnishings Stores sector (SIC 57). For this sector, population, distance to the nearest MSA and county seat were found to be significant at the ninety-

five percent level. The results indicate as population and distance to the nearest metropolitan statistical area increase, the pull factor value will increase. In addition, pull factor values are higher for county seat towns. These towns are often regional trade centers. The r-square value for the equation is 0.5607.

**Table 5-6. Parameter Estimates, T-scores, and R-square Value , for SIC 57, Furniture and Home Furnishings**

Variable	Parameter Estimate	t-score for Ho:
Intercept	-0.32488	-1.070
Per Capita Income	0.000014145	1.356
Population 18-64	-0.011219	-0.04871
Population 65+	0.056672	1.295
Population	0.000015403	4.266*
Distance to MSA	0.0038268	4.177*
Metropolitan	0.079365	0.8390
Farming-Dependent	-0.14593	-1.482
Mining-Dependent	0.235	1.841
Government-Dependent	-0.041731	-0.4048
Services-Dependent	0.16518	1.296
Non-specialized	0.083571	0.9024
Main Street	-0.10421	-1.927
County Seat	0.20557	4.543*
R-square	0.5067	

\*Significant at the ninety-five percent level

### **Results for Eating and Drinking Places, SIC 58**

Parameter estimates, t-scores, and the r-square value for the Eating and Drinking Places sector (SIC 58) are shown in Table 5-7. The intercept and four variables are

statistically significant from zero at the ninety-five percent level: population ages 18 to 64, population, farming-dependent, and county seat.

**Table 5-7. Parameter Estimates, T-scores, and R-square Value ,  
for SIC 58. Eating and Drinking Places**

Variable	Parameter Estimate	t-score for Ho:
Intercept	2.2862	3.776*
Per Capita Income	0.0000045651	0.2532
Population 18-64	-1.5935	-3.00*
Population 65+	-0.18222	-1.799
Population	0.000018904	3.095*
Distance to MSA	0.0014530	0.7911
Metropolitan	-0.23053	-1.343
Farming-Dependent	-0.39496	-2.081*
Mining-Dependent	-0.025656	-0.1176
Government-Dependent	-0.095571	-0.4639
Services-Dependent	0.16805	0.8181
Non-specialized	-0.20317	-1.228
Main Street	0.060659	0.4996
County Seat	0.41148	4.265*
R-square	0.4913	

\*Significant at the ninety-five percent level

A negative and significant parameter estimate for population ages 18 to 64 indicates as a city's proportion of those ages 18 to 64 relative to the state increases, the pull factor will decrease. This age group is mobile and can travel out of the area to visit establishments outside of the local area. In addition, those in this age group who have families with more than two people may not eat out often. Increasing population is

shown to result in increasing pull factors, as hypothesized. In addition, the county seat dummy variable has a positive effect on pull factors in this sector. Towns located in farming-dependent counties have lower pull factors than towns located in other counties. However, when testing the county classification dummy variables as a group, they were shown to be statistically insignificant in the Eating and Drinking Places sector. The model of this sector has an r-square value of 0.4913.

### **Results for Miscellaneous Retail, SIC 59**

Parameter estimates, t-score values and the r-square value for the Miscellaneous Retail sector are located in Table 5-8. For this sector, population ages 65 and over, population, services-dependent, and the county seat variable were found to be significant at the ninety-five percent level. The parameter estimate for all of these significant variables was positive. As the city's proportion of those individuals ages 65 and over in a city relative to the state increases, the pull factor value will increase. This less mobile age group is more likely to shop locally. The positive parameter estimates for the population and county seat variables were expected for the same reasons explained previously. Towns located in services-dependent counties were shown to have higher pull factors than those towns located in other counties. The r-square value is 0.5646

**Table 5-8. Parameter Estimates, T-scores, and R-square Value ,  
for SIC 59, Miscellaneous Retail**

Variable	Parameter Estimate	t-score for Ho:
Intercept	-0.22871	-0.7529
Per Capita Income	0.0000065163	0.7986
Population 18-64	0.25245	1.060
Population 65+	-0.11404	2.555*
Population	0.000018771	4.884*
Distance to MSA	0.0010661	1.485
Metropolitan	0.0052191	0.05155
Farming-Dependent	-0.18111	-1.857
Mining-Dependent	0.13953	1.210
Government-Dependent	0.21783	1.749
Services-Dependent	0.36391	2.584*
Non-specialized	0.028364	0.2915
Main Street	0.012010	0.2448
County Seat	0.21257	4.613*
R-square	0.5646	

\*Significant at the ninety-five percent level

### Summary and Conclusions

Each retail sector has a different set of significant variables. Only the county seat dummy variable was found to be significant at the ninety-five percent level for every sector. Central place theory predicts that a hierarchy of communities exists where the number of retail functions performed at a community increases as the size or order of a community increases (King). Higher order centers are more complex, offer a greater range of goods and services, have more retail establishments, and serve a larger area than

lower order centers; lower order centers supply a lesser range of goods and services to a smaller area (Flood and Schreiner). In higher order centers, agglomeration economies, external economies arising from the concentration of economic activities in a given area, occur. Businesses locate near each other to achieve lower costs. This gives customers more choices and opportunities to shop, resulting in increased pull factors for these trade areas. The results of this study indicate county seat towns emerge as local trade centers. As trade centers for the region, a variety of businesses locate in the county seat. The county seat variable in this study is assumed to have much of the same effect as the variable “number of retail outlets” used in a study by Ebai and Harris. In their study, Ebai and Harris found this variable was an important determinant in higher pull factors. Areas with a large number of retail outlets are more likely to be trade centers and experience the positive effects of agglomeration economies.

The Main Street dummy variable was not significant at the ninety-five percent level in any of the sectors. This result, however, does not mean the Main Street Program is not significant in influencing retail trade. This outcome merely indicates the benefits of the program may not be quantifiable. In addition, the Main Street Program may not be old enough to have produced quantifiable results. Furthermore, towns involved in the program may be prone for success regardless of their membership in the program. Therefore, the success of the towns involved in the Main Street Program is attributed to other variables. Whatever the reason, further research needs to be conducted to analyze the effectiveness of the Oklahoma Main Street Program.

The remaining variables were significant in only some of the sectors. This finding is similar to the study conducted by Ebai and Harris. The exogenous factors may

have different impacts on different retail sectors that should be considered in development programs (Ebai and Harris). For example, per capita income, population, proportion of population ages 18 to 64, proportion of population ages 65 and over, and distance to the nearest metropolitan statistical area were all significant variables in both studies, but none were significant for all categories in either study. In both studies, per capita income, distance to the nearest metropolitan statistical area, population, and proportion of population ages 65 and over were found to be positive determinants of pull factors in one or more categories. However, they were not always significant for the same sectors in both studies. For example, while distance to an MSA was a positive influence for SIC 56 and 57 in this study, it was a positive influence for SIC 53 and 56 in the study conducted by Ebai and Harris.

Another difference between the studies is that while some variables affected pull factors positively in one study, these same variables affected pull factors negatively in the other study. For example, in the Ebai and Harris study, the greater the area's proportionate share of population ages 18 to 64 relative to the state, the higher the pull factor. In this study, however, the greater the area's proportionate share of population ages 18 to 64 relative to the state, the lower the pull factor. This difference may be because the population range of this variable is so large. The distribution of population in this range may differ between the two studies. For example, one study may have a large proportion of people in the younger end of the range while the other study may have a large proportion in the older end of the range. The shopping patterns of the younger age group in this population range may differ from the shopping patterns of the older age group. In addition, the distances in Utah and Nevada may be so large that less people



commute to work outside of their county. People who work and live in the same county may be more likely to shop locally in their home county.

These differences between the studies may result because the unit of observation differs in each study. Ebai and Harris examined counties while this study looked at cities. In addition, two different regions were studied. The study area used by Ebai and Harris was Nevada and Utah. This study looked at communities in Oklahoma. These areas have different demographics and population densities. Also, consumers may have different shopping patterns depending on the area where they reside. Given these differences, one expects the results to differ somewhat.

## CHAPTER 6

### SUMMARY AND CONCLUSIONS

#### Summary

A community retail market's ability to attract and retain customers is vital to the economic strength of a community. Retail sales produce sales tax dollars which support municipal services. A loss in retail sales lowers tax revenue available to provide desired services. Studying retail trade trends assists in identifying problem issues and possible areas for improvement.

As communities discover the importance of retail trade to a town, many request a market study of their retail sector. Such a study examines the business activity in the town and identifies areas for improvement. Understanding the basics of retail market analysis can help guide the development teams in making educated decisions about the types of businesses the commercial district might be able to support, the customers it can probably attract, the ways it should promote the district's assets, and the pace at which the economy might change (Joncas).

Procedures for conducting a market study were outlined. In addition, examples from a market study of Stillwater, Oklahoma were provided. The topics of discussion included: determining the primary and secondary trade areas; outlining trade area demographics (population, age, and income characteristics in the trade area and

competing market areas); retail trade flow analysis and the different methods available to measure this; and trade area surveys.

A linear model was used to explore the determinants of retail trade. The model tested the effects on pull factor values of several exogenous variables: per capita income, the percent of each city's population between the ages of 18 and 64 relative to the state; the percent of each city's population 65 years and older relative to the state, distance to the central city in the nearest metropolitan statistical area, a group of dummy variables representing the economic base of the county, a dummy variable representing participation in the Oklahoma Main Street Program, and a dummy variable representing county seats.

Equations for the eight retail sectors, as defined by the Standard Industrial Classification Code, were estimated using Ordinary Least Squares (OLS). The results of the analysis, presented in chapter five, showed each retail sector had a different set of significant variables. Only the county seat dummy variable was found to be significant at the ninety-five percent level for every sector, indicating county seat towns emerge as local trade centers. As trade centers for the region, a variety of businesses locate in the county seat. This gives customers more choices and opportunities to shop, resulting in increased pull factors for these trade areas.

The Main Street dummy variable was not significant at the ninety-five percent level in any of the sectors. This result, however, does not mean the Main Street Program is not significant in influencing retail trade. This outcome merely indicates the benefits of the program may not be quantifiable. For example, the program assists downtown regions in unifying local leaders and business owners to create an organized plan of

action for the region. By creating common goals and pooling resources more can be achieved than if individuals worked alone. Benefits such as these can not be described by a regression equation. In addition, the Main Street Program may not be old enough to have produced quantifiable results. In the future, a model incorporating time series data may better estimate the impact of the Main Street Program on retail sales. Furthermore, towns involved in the program may be prone for success regardless of their membership in the program. Therefore, the success of the towns involved in the Main Street Program is attributed to other variables. Whatever the reason, further research needs to be conducted to analyze the effectiveness of the Oklahoma Main Street Program. This study provides only a starting point for future research and does not suggest that participants in the program are not achieving benefits as a result of the program.

The remaining variables were significant in only some of the sectors. This finding is similar to the study conducted by Ebai and Harris. For example, per capita income, population, proportion of population ages 18 to 64, proportion of population ages 65 and over, and distance to the nearest metropolitan statistical area were all significant variables in both studies, but none were significant for all categories in either study.

The apparel and accessory store segment had the largest number of significant variables. Eight of the variables were statistically significant from zero at the ninety-five percent level: population, distance to the nearest MSA, metropolitan, farming-dependent, mining-dependent, government-dependent, non-specialized, and county seat. Positive coefficients for population and distance to the central city of the nearest MSA indicate as population increases and as the distance to an MSA increases, the pull factor value will

increase. In addition, county seat towns are shown to have higher pull factors than those towns that are not county seats.

Five of the county classification dummy variables (metropolitan, farming-dependent, mining-dependent, government-dependent, and non-specialized) were found to be significant and have a negative parameter estimate. If a city is located in a county other than manufacturing-dependent or services dependent, the city's pull factors will be negatively affected by the county classification variable. Services-dependent counties are generally in a stage of economic growth. Therefore, cities located in these counties would not be negatively affected by this classification. The fact that the large cities in the metropolitan counties have been omitted from this study may be why the metropolitan-dependent variable has a negative parameter estimate. Also, non-metropolitan counties may not be able to support apparel and accessory stores. Given the variety of these types of stores located in large cities and the lower prices these stores can offer, people may always prefer to shop in the large metropolitan areas. Furthermore, the accessibility of mail order catalogs may contribute to the lower pull factors in non-metropolitan counties. When tested as a group, county classification dummy variables were found to be significant determinants of pull factor values.

The automotive dealers sector and the furniture and home furnishings sector had the least number of significant variables with only three variables significant at the ninety-five percent level. The per capita income variable and county seat variable were positive influences on the pull factors in the automotive dealers sector. As per capita income increases, pull factor values increase. County seat towns were shown to have higher pull factors than other towns. Farming-dependent counties were found to have

lower pull factors in this sector. An increase in population and an increase in the distance to the central city in the nearest MSA were shown to increase pull factors in the furniture and home furnishings sector. Again, county seat towns are expected to have higher pull factor values in this retail segment.

### **Conclusions**

Market analysis is an important tool for retail development teams to use. The process of revitalization is complicated, and districts must carefully examine the area's market possibilities and build an economic development strategy based on the most promising options.

When conducting a market analysis, several points should be considered. First, local involvement in the market analysis process is crucial (Joncas). Although outside consultants can provide much of the research needed for a market analysis, community residents provide local insight and an awareness of the town's unique characteristics. In addition, by using community volunteers and staff to complete some of the work, the development organization can save money. Most importantly, local leaders involved in the process will gain greater understanding of the dynamics forces at work in the local market, allowing them to make more informed decisions.

Furthermore, market analysis is an ongoing process (Joncas). The district's market constantly changes and should be measured on an ongoing basis (Joncas). The initial market study should be updated every few years to monitor progress. Towns may need to modify goals and promotional activities as time passes. Finally, the market analysis should be integrated into elements of the neighborhood revitalization program

(Joncas). Market analysis can help the commercial revitalization program in various ways, including recruiting new businesses, helping existing businesses expand or add new product lines, improving the effectiveness of advertising, launching successful promotional events and designing incentive programs for building improvements (Joncas).

Market analysis requires patience, diligence, attention to detail and an understanding of the district being examined, as well as the use of equations to process data (Joncas). In addition, a market study should not be expected to provide precise answers. Rather, it should be used as a starting point in a larger revitalization effort. The market analysis should only be a small part of a larger revitalization program. The conclusions reached by the revitalization organization during the market analysis process should help shape the promotional program implemented downtown, the scale of financial incentive programs the organization offers, and many other important elements (Joncas).

The equations produced by the ordinary least squares procedure yielded valuable information. They indicated important exogenous variables for each sector. The differences between the equations showed that each sector has a unique set of significant variables. Strategies used to attract businesses in some sectors may not be successful in attracting other types of businesses.

Further research needs to be conducted in the area of retail trade analysis. This study used a cross-sectional data set. A study that incorporates time series data would be useful. The use of time series data might incorporate the effects of the Oklahoma Main Street Program more accurately. Also, since current per capita income data are only

available at the county and state level, this study assumed a city's per capita income was equal to county per capita income. A better option might be to proxy city per capita income relative to the county level. In addition, Ebai and Harris examined some variables that were not incorporated in this study. These included number of retail outlets and retail sales per establishment. Ebai and Harris found both of these variables to be significant determinants of pull factors. In future studies, variables such as these may need to be examined further. Furthermore, other USDA county classification variables such as commuting counties or poverty counties may yield more information than the county classifications used in this study. Also, although communities realize the importance of retail trade, they have limited resources to spend on revitalization programs. Further research on the effectiveness of outreach programs would yield valuable information for communities to use when deciding how to best utilize their limited resources.

The data provided by the Oklahoma Tax Commission are valuable. This data could be obtained yearly. By building a data set of annual taxable retail sales, comparisons could be made between years, as well as, between different towns. For example, a town could compare its taxable retail sales with the sales of towns of like size or with similar characteristics. Towns could be described, for instance, as metro versus non-metro or as towns involved in the Oklahoma Main Street Program versus those that are not. Descriptive analysis of the data could be as valuable as using the data in a statistical model.



## BIBLIOGRAPHY

- Brockway, Gary and W. Glynn Mangold. "The Sales Conversion Index: A Method for Analyzing Small Business Opportunities." *Journal of Small Business Management*. 26:2(April 1988):38-48.
- Carroll, J. Douglas, Jr. "Spatial Interaction and the Urban-Metropolitan Regional Description." *Papers and Proceedings of the Regional Science Association*. Vol. 1, D-1-D-14, 1955.
- Chabot, Robert J. "Net Retail Leakage: A Case Study of Ohio and the Surrounding Areas at the County Level." *Small Town*. 27(Jan.-Feb. 1997):24-29.
- City of Stillwater, Community Development Department, John Wesley, "Small Business Retention, Expansion, and Recruitment for Downtown Stillwater – Market Analysis," March 1989.
- Darling, David L., Md. Habibur Rahman, and Janaki Ram Pillarisett. "Measuring and Monitoring Change with a Community Life Cycle Model." *Journal of the Community Development Society*. 25(1994):62-79.
- Darling, David and Jin-Song Tan. "Retail Trade Patterns of Rural Kansas." *Kansas Business Review*. 12:3(1989).
- Deller, Steven C. and James C. McConnon. "Maine County Retail Trade Patterns." *The Maine Business Research Report*. 1(July 1989).
- Deller, Steven C. and James C. McConnon. "Trade Area Analysis of Maine." *The Maine Business Research Report*. 1(Sept. 1989).
- Ebai, George and Thomas R. Harris. "Factors Influencing Trade Area Activity in the Great Basin Area." *The Review of Regional Studies*. 27(1997): 251-275.
- Flood, J. David, and Dean F. Schreiner. "Availability of Retail and Business Services to Rural Populations." Research Application in Rural Development and Planning. *Research Report P-655*, Oklahoma State University. pp 164-177. 1972.

- Ghelfi, Linda M., Douglas E. Bowers, and Lindsay Mann, eds. "Retail Industry Adds 98,000 Nonmetro Jobs Annually During 1988-93." *Rural Conditions and Trends*. 7(July 1996):39-42.
- Hamrick, Karen S. "Ag and Rural Employment in the Next Decade." *Agricultural Outlook*. June 1996:2-3.
- Harris, Thomas R. "Commercial Sector Development in Rural Communities: Trade Area Analysis." *Western Regional Extension Publication*. 90(Sept. 1985).
- Harris, Thomas R., Kalyan Chakraborty, Lijuan Xiao, and Rangesan Narayanan. "Application of Count Data Procedures to Estimate Thresholds for Rural Commercial Sectors." *The Review of Regional Studies*. 26(Summer 1996):75-88.
- Harris, Thomas R. and J. S. Shonkwiler. "Application of Maximum Likelihood to a Bivariate Two-Limit Tobit Model for Estimation of Rural Retail Sales Potential." *The Review of Regional Studies*. 24(1994):143-160.
- Holden, John P. and Tim Pritchard. "The Importance of Variety to Retail Centers: Evidence in Ohio." *The Journal of Regional Analysis and Policy*. 26(1996):17-28.
- Johnson, Jerry and Carlos Moore. 1988. "Main Street, A Concept that Spells Success for Small Town Businesses." *Baylor Business Review*. Winter 1988 : 22-27.
- Joncas, Kate. *Step-By-Step Market Analysis*. Liveable Oregon, Inc.: National Main Street Center/National Trust for Historic Preservation, 1995.
- King, Leslie J. *Central Place Theory*. London: SAGE Publications, 1984.
- Kurt, Kelly. "Main Street Program Revives Dying Downtowns." *Stillwater News Press*. February 23, 1997: A10.
- Lawhead, Terry. "A Comprehensive Strategy for Rural Downtowns." *Economic Development Review*. 13:2(Spring 1995):75-81.
- Leinenkuge., Jake. "Urban Revitalization: It's Not Just for Large Cities." *Executive Speeches*. 9:4(Feb./Mar. 1995):12-16.
- McGurr, Paul T. and Sharon A. DeVaney. "Patterns of Retail Change: A Comparison of Metropolitan and Nonmetropolitan Counties in Indiana 1972 to 1992." *The Journal of Regional Analysis and Policy*. 26(1996):35-47.
- Oklahoma Employment Security Commission. Labor Force Benchmark Data. Issues for 1990 to 1994. 1995 to 1997 data provided electronically via Email, May 1998.

- Oklahoma Tax Commission. Sales Subject to Sales Tax – Oklahoma Cities, 1986 to 1997. ORIGINS Database – <http://origins.ou.edu/databases/SST/City/> (June 22, 1998).
- Oklahoma Tax Commission. Sales Subject to Sales Tax – Oklahoma Counties, 1986 to 1997. ORIGINS Database – <http://origins.ou.edu/databases/SST/County/> (June 22, 1998).
- Rushing, Robert. “Central Business District Revitalization Efforts in Oklahoma.” Thesis. Oklahoma State University, May 1994.
- Shonkwiler, J. S. and T. R. Harris. “A Non-Gaussian Time Series Analysis of Rural Retail Business Counts.” *Journal of Regional Science*. 33(Feb. 1993):37-47.
- Stone, Kenneth E. and James C. McConnon. “A Guide to Using Sales Tax Data to Assess Business Risks in Community Development Extension Programs.” Paper presented at CDS meetings, Morgantown, WV, 1987.
- Thill, J.C. “Modeling Store Choices with Cross-Sectional and Pooled Cross-Sectional Data: A Comparison.” *Environment and Planning A*. 27(1995):1303-1315.
- U.S. Bureau of the Census, Population Estimates Branch. 1996 Estimates of the Resident Population by City. – <http://www-nt.ou.edu/bulletins/CENSUS/CEN014.txt> (March 1998).
- U.S. Department of Commerce, Bureau of Economic Analysis. Personal Income and Employment Estimates. Regional Economic Information System, 1969-95. CD-Rom, August 1997.
- U.S. Department of Commerce, Economics and Statistics Administration. 1992 Census of Retail Trade, Oklahoma. <http://www.census.gov/prod/1/bus/retail/92area/rca37.pdf>
- Woods & Poole Economics, Inc. 1998 State Profile, Oklahoma. Woods & Poole Economics, Inc., Washington D.C., January 1998.
- Yanagida, John F., Bruce B. Johnson, Joel Young, and Michael Lundeen. “An Analysis of Economic and Non-economic Factors Affecting Retail Sales Leakages.” *The Review of Regional Studies*. 21(1991):53-64.

VITA

Kimberly Michelle McCroskey

Candidate for the Degree of

Master of Science

Thesis: DOWNTOWN REVITALIZATION AND MARKETING EFFORTS FOR  
OKLAHOMA COMMUNITIES

Major Field: Agricultural Economics

Biographical:

Personal Data: Born in Austin, Texas, On May 14, 1975, the daughter of Larry and Joyce McCroskey.

Education: Graduated from Stillwater, High School, Stillwater, Oklahoma in May 1993; received Bachelor of Science degree in Agricultural Economics from Oklahoma State University, Stillwater, Oklahoma in December 1996. Completed the requirements for the Master of Science degree with a major in Agricultural Economics in May 1999.

Experience: Employed part-time by Oklahoma State University, Department of Agronomy; employed part-time by Oklahoma State University, Department of Agricultural Economics as a student paraprofessional; employed by Oklahoma State University, Department of Agricultural Economics as a graduate research assistant, January 1997 to present.