

THE IMPACT OF A PUBLIC MARINA
ON EMPLOYMENT IN A SMALL
COMMUNITY IN MICHIGAN

Thesis for the Degree of M. S.
MICHIGAN STATE UNIVERSITY
WILLIAM GEORGE HAGDORN
1970

115516

二五

1005-00
OC 67 97 /



Q-10716
W-254

AUG 10 2002

ABSTRACT

THE IMPACT OF A PUBLIC MARINA ON EMPLOYMENT IN A SMALL COMMUNITY IN MICHIGAN

By

William George Hagdorn

The purpose of this thesis is to examine the impact a public marina has on the employment patterns in a small community. In the past, state and local governing agencies, have not felt the need to determine the impact their financially supported public projects were having on community development. However, administrative policies now frequently require evidence that publically financed projects are beneficial and do in fact contribute to the economical development of such communities.

The importance of publically financed recreational projects on economic development is becoming a greater concern to all governing agencies. Evidence supporting the impact these projects have on community development is in critical need. Many economically depressed areas which have a potential for recreational development can benefit greatly when presenting evidence to the federal governmental agencies that recreational projects, public financed, will

generate new employment in the community and will stimulate the local economy. Such evidence has not been available to these local units.

A community in northern Michigan was examined under a multiple time series design to trace the effects the public marina has had on past employment in the community. Modifications of this design was necessary because of the lack of a compatible controlled site. This modification involved using the same site but dividing the year into two seasons. The winter season extended from December the preceding year through May while the summer season included the months from June through November. This was done because the marina was only operational during the summer months and its impact on employment occurred at that time.

A method was developed to measure the indirect employment stimulated by the construction and operation of the public marina. The direct employment is easily measured because it is readily seen. Positions such as a harbormaster or a new mechanic at a repair facility are examples of direct employment positions. The increase of employee hours at a grocery store or a restaurant are examples of indirect employment and this is what was of primary concern.

The findings illustrate that the public marina, after five years of operation, was responsible for the creation of five equivalent full-time employment positions during the summer season; after eight years of operation

William George Hagdorn

the marina was responsible for generating twelve equivalent full-time employment positions. These twelve positions were created by a public marina with only twenty boating slips available to the boating recreationist. These values were calculated by subtracting certain aspects of the employment patterns in the community leaving a residual amount of employment that was attributed to the public marina.

THE IMPACT OF A PUBLIC MARINA ON EMPLOYMENT
IN A SMALL COMMUNITY IN MICHIGAN

By

William George Hagdorn

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Department of Resource Development

1970

ACKNOWLEDGMENTS

I wish to express my appreciation to those people who have helped in the development and completion of this thesis. I especially would like to thank Dr. Michael Chubb, my major professor and thesis advisor, who has helped in the development of my project and who was extremely helpful in constructively reviewing the thesis throughout the various stages leading to its completion.

I also wish to express my thanks to Mr. Keith Wilson, Director of the Michigan Waterways Commission without whose assistance, both financial and technical, this thesis would not have evolved.

I would also like to thank Dr. Eugene Dice and Dr. William Kimball of the Department of Resource Development for providing background information concerning the area where the study took place.

My appreciation goes to many others who supplied information relative to this thesis: Dr. Milton Steinmueller and Dr. Daniel Chappelle, of the Department of Resource Development; Mr. Michael Freed and Mr. Donald Kelly of the Michigan Waterways Commission; Mr. William Colburn, Department of Natural Resources; Mr. Donald

Goosetree, Economic Development Administration; Dr. Thomas Burton, Department of Parks and Recreation Resources; Dr. Robert Marty, Department of Forestry; Mr. Paul Schneider, Department of Resource Development; and Mr. Stanley Ball, County Agent, United States Department of Agriculture.

A great deal of gratitude is extended to Mr. Ronald Hodgson, project leader of the study from which this thesis evolved and Miss Sharron Brown and Miss Shirley Cook, re-research aides, whose assistance were invaluable during the data gathering stage of this thesis.

I also wish to acknowledge the secretarial staff of the Department of Parks and Recreation Resources, especially Miss Connie Phillips, for assistance in the preparation of this thesis. I further wish to thank my fellow graduate students whose constructive criticism was most helpful.

I wish to acknowledge the helpfulness of my committee members, Mr. Louis Twardzik, Chairman of the Department of Parks and Recreation Resources and Dr. Victor Rudolph, Department of Forestry.

I wish to express my appreciation to Dr. Raleigh Barlowe, Chairman of the Department of Resource Development, and many others for the opportunity they made possible.

Last, but not least, I wish to thank my wife, Sandra, who encouraged me throughout the many months of work on this thesis and whose assistance I could not have done without.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES.	viii
Chapter	
I. INTRODUCTION	1
Background Information	1
Statement of the Problem.	4
Significance of the Problem.	5
Approaches to the Problem	6
Site Selection	8
Review of Literature	9
II. THE STUDY AREA.	17
Location	17
Geography	18
Climate.	18
Soil Type and Fertility	18
Land Ownership	19
History	19
Regional	19
Local Development	22
III. METHODOLOGICAL APPROACH.	28
Study Design.	28
Multiple Time Series Approach	28
Modification of the Time Series	
Design	34

Chapter	Page
Survey Area	35
Population.	36
Income	38
Industry and Business	38
Employment and Unemployment	42
Procedure.	42
Limitations	46
IV. ASSEMBLED DATA.	50
Gross Sales of Selected Retail Outlets	51
Cherry Production and the Migrant Labor Force	57
The Seasonal Resident.	60
Tourist and Recreation Impact	63
Overnight Tourist	64
Transient Tourist	68
Effects of Harbor	69
Employment Patterns of the Community.	73
Non-Relevant Sector.	77
Relevant Sector	79
V. RESULTS AND CONCLUSIONS.	90
Summary	90
Interpretation of Results	92
Conclusions	98
Recommendations for Future Investigations	100
BIBLIOGRAPHY.	104
APPENDICES	
Appendix	
A. Profile Scope of Public Works Project	106
B. Total Employment for Canned Fruit and Vegetable Industry in Lakeshore	109
C. Log Summary for Lakeshore Marina.	110
D. Wage/Time Equivalent Conversion Table	111

Chapter	Page
---------	------

Appendix

E. Employment: Man Hours for Relevant Sector as Coded According to SIC Code, Winter and Summer	112
F. Employment: Man Hours for Non-Relevant Sector as Coded According to SIC Code, Winter and Summer.	113

LIST OF TABLES

Table	Page
1. Total Gross Sales for Selected Retail Outlets in Lakeshore, January 1955-December 1968 . .	53
2. Number of Overnight Guests at Five Establish- ments in the Lakeshore Area, 1955 Through 1968	65
3. Probable Number of Equivalent Full-Time Seasonal Employment Positions Attributable to the Lakeshore Marina.	101
C-1. Log Summary for Lakeshore Marina	110
D-1. Wage/Time Equivalent Conversion Table.	111
E-1. Employment: Man Hours for Relevant Sector as Coded According to SIC Code, Winter and Summer	112
F-1. Employment: Man Hours for Non-Relevant Sector as Coded According to SIC Code, Winter and Summer.	113

LIST OF FIGURES

Figure	Page
1. Basic Experimental Design Showing Periods for Observations (0) and Treatment (X) of Significant Variable	29
2. Diagram of Observed Change in Employment After Treatment (X) Imposed on Experimental Site	29
3. Past and Projected Population Patterns for Lakeshore, the Township and the County . .	37
4. Per Capita Buying Income for Scenic County, State of Michigan, and the United States and Per Household Buying Income for Scenic County.	39
5. Breakdown of Industry and Retail Business in the Community of Lakeshore According to the <u>Standard Industrial Classification</u> Code, U.S. Bureau of Budget, 1963 . . .	41
6. Gross Sales for Selected Retail Outlets in the Community of Lakeshore	54
7. Red Tart Cherry Production for Michigan and Great Lakes Region.	56
8. Overnight Visitor Stays for Resort Accommodation Outlets in the Lakeshore Area. . .	66
9. Total Number of People and Boats Served by the Lakeshore Public Marina.	71
10. Total Boating Man Days for the Lakeshore Public Marina as Extracted from Harbor-master's Log Entries	74

Figure	Page
11. Total Employment for the Village of Lakeshore for the Period 1955 Through 1968	76
12. Total Employment in the Non-relevant Sector for the Community of Lakeshore. . . .	78
13. Total Employment in the Non-relevant Sector for Winter and Summer Each Year, for the Community of Lakeshore	80
14. Total Employment in the Relevant Sector for Each Year in the Community of Lakeshore. .	81
15. Total Summer and Winter Employment for the Relevant Sector in the Community of Lake- shore	82
16. Relevant Sector Employment, Summer Minus Winter for Each Year, for the Community of Lakeshore.	84
17. Amount of Dollars Spent on Tourism in State of Michigan	88
18. A Comparison of Significant Community Events and County Accommodation Use Tax Receipts with Relevant Season Employment for the Community of Lakeshore. . . .	94
19. Relevant Seasonal Employment for the Com- munity of Lakeshore Without the Effects of the Private Marina and Retail Bakery. . .	96
20. Relevant Seasonal Employment for the Com- munity of Lakeshore Without the Effects of the Employment of County Hospital. . .	97
B-1. Total Employment for Canned Fruits and Vegetables Industry in Lakeshore	109

CHAPTER I

INTRODUCTION

Background Information

Since its creation in 1945, the Division of Waterways (Waterways Commission) of the Michigan Department of Natural Resources (DNR) has provided recreational boating facilities for Michigan boaters. The Division was created to participate with the federal government in the construction of fifteen recreational harbors of refuge authorized by Congress in 1945.¹ The objective was to provide safe boating on the Great Lakes by providing harbors every thirty miles along Michigan's shoreline.²

After the completion of these harbors, the Waterways Division was faced with the demand for more facilities. This was due to the rapid increase of the recreational

¹Harbor of refuge is a single purpose harbor designed exclusively for refuge from adverse weather conditions. A harbor is an area of water naturally or artificially protected to a degree of providing safe mooring for small crafts during conditions of adverse sea or swell.

²Operation Cooperation--Report of the Steering Committee on Cooperative Programs Between the Michigan Department of Conservation and Michigan State University, Charles D. Harris and Howard A. Tanner, co-chairmen (Lansing-East Lansing: Michigan Department of Natural Resources and Michigan State University, 1968), p. 38.

boating fleet in Michigan. Another nine refuge harbors have been completed, with the cooperation of the federal government, and fifteen more are currently being planned.³

As the need for harbors was being satisfied, a demand arose from boaters and local communities for the construction of berthing facilities within these harbors and also at the future harbors being planned.⁴ Therefore, in order to meet this demand, the Commission instituted a program by which state funds would be made available to the local communities for the construction of such facilities. The local community would then own and operate the facility guided by policies set forth by the Commission.

As the construction of the additional nine harbors neared completion, the Commission became interested in the effects its harbor construction program was having on the economy of the local communities. Information regarding the effects of the construction and presence of a harbor on the economy of a small community has long been sought by various public agencies throughout the country. If such information were available, and the such harbors proved to be of direct economical benefit to the communities concerned, then additional funding of projects could be sought under present federal programs.

³Ibid.

⁴Berthing describes a form of wet boat storage in which the craft is docked in a "U" shaped slip.

Although participating state funds have been relied on to finance the marina program, the Commission desires to make as much use of federal grants as possible and also to have the communities assist in financing the project. The Economic Development Administration (EDA) is one of the federal agencies which has provided funds for the Commission's harbor program.

This agency was created under the Public Works and Economic Development Act of 1965 and was authorized to provide financial assistance to underdeveloped areas of the country. Through this agency, communities can request financial assistance to build public projects which will stimulate the economic growth of the community. A requirement which must be met before EDA will provide assistance, is that the project must create employment opportunities and decrease unemployment in the area where the project is located.

In the past, the communities have been able to satisfy this requirement by providing letters from local businessmen in the community stating what effects such a project would have on the future employment patterns of their businesses. Now, due to more requests for EDA grants and tighter monetary control measures at the federal level, EDA is demanding greater accuracy in the estimation of new employment positions which would be created by a proposed project.

Statement of the Problem

In 1968, the Waterways Commission requested that the Recreation Research and Planning Unit, Department of Park and Recreation Resources, Michigan State University undertake a long-term study to determine the impact its harbors are having on the economic development of the communities. The overall project has been divided into several phases.

The first phase of the study is concerned with the impact the harbors have on employment patterns within the local communities. This phase was undertaken first because such information could be of immediate use to the Commission in requesting financial assistance for the projects and also because it could be completed within both the financial and time constraints set for the first phase. The principal objective of this study is to demonstrate that the Waterways Commission's harbors are economically beneficial to communities and that they do create new employment. This latter point is of extreme importance to the Commission because it is one of the requirements needed to be met for EDA funds before awarding a grant for projects at local levels.

Under the provisions set forth by the Economic Development Administration (EDA), United States Department of Commerce, state and local governments may apply for matching funds to finance community projects. One of the

criteria used by EDA in evaluating requests for grants is the effect the project will have on creation of new employment positions, directly or indirectly (Appendix A) as a result of the project.

In the past, it has been speculated that the harbors have contributed to community economic development and as such have qualified for EDA monies. However, satisfying the new, more stringent requirements by showing that a significant number of new jobs will be created by such a project has become more difficult for the grant applicant. It is also easier to show the direct impact of employment, such as a new harbormaster and two assistants or a new mechanic at a service repair garage, than it is to show the indirect impact created by the harbor. The indirect impact such as increasing the total number of hours per week or day in retail stores, the hiring of a new waitress at a restaurant to handle the extra service because of increase in business, or the hiring of another sales clerk in a gift shop which has extended business hours to accommodate the boater are examples of significant effects the harbor may have on the employment base of the community.

Significance of the Problem

At the present time, there exists very little information about the effects of public supported recreation projects on local, regional, or state wide levels. The actual results and impacts of many state and local programs

are still unknown and many programs are undertaken using speculative data to justify them.

The Waterways Commission believes that a method needs to be developed which will accurately measure the effects public projects have on the employment base of communities. They feel that such a method would be of great assistance to all agencies interested in determining the effects of their supported projects.

It is expected that this project will be of assistance to the sponsoring agency, Waterways Commission, and to Michigan's smaller political subdivisions who seek to find ways to support public projects and improve their economic stability. It is also believed that the results of this study may suggest new methods by which to measure the secondary benefits of marine construction and operation to the local economy. Lastly, it is hoped that the results of this study will show the necessity for further investigation into economic impact of public recreational projects and their effects on the economic development of the communities and suggest useful approaches for such investigation.

Approaches to the Problem

During the early phase of this project, a study design was sought which would enable the author to approach the problem in such a manner that would minimize costs, expedite the collection of data and utilize the manpower

available in the most efficient manner. Another limiting constraint which affected the choice of a study design was that of time. Results were to be obtained by the end of the second year of the contract.

In a review of available literature, discussed later in this chapter, several study designs were found which could be used to solve the problem. The designs centered upon: (1) Leontief's input-output model, (2) the value added approach as an impact measure,⁵ and (3) multiple time series design.

After considerable analysis and discussions of the advantages and disadvantages of the approaches listed above, the author decided not to use either the Leontief input-output model or the value added approach. Several reasons for excluding these approaches were:

1. The costs involved in conducting either of these two study designs was considerably higher than funds allotted for the study.
2. The variables involved were not easily controlled for the accuracy demanded by these two designs.

⁵The value added approach would also include the traditional data on boater expenditures. It was later found that this could not have been done because the marina had closed during the summer, 1969, when field work had begun.

3. The time allotted for the study was not of sufficient length for these designs to be accomplished.
4. The use of either of these two approaches would create an unreasonable burden to the business establishments in the community during data collection phase since the majority of the establishments depended on the short vacation season for business and therefore would be too busy to provide assistance to the research team.

The multiple time series approach was chosen because it was compatible with the existing business situation in the community, it was within the resources available to conduct the study, and could be applied satisfactorily in solving the problem. However, with a larger budget and more time to conduct the study, the value added approach would have been included and would have added additional support to the time series design.

Site Selection

The site selected for the study was chosen on its ability to satisfy the following criteria:

1. The site must be relatively remove from the economic influences of the larger urban areas.
2. The site must be small enough to easily obtain data and control variables.

Because of the need for the site to be small in order to control and measure the variables, it became evident that the collection of data might infringe on the privacy of certain business establishments in the community. In order for the research team to have access to certain records, it was necessary to guarantee that the information would be confidential and that the individual rights would be protected. To insure the protection of these rights, the actual name of the site will not be used in this thesis. However, it is believed that the use of a pseudonym will be more effective than the use of such designation as "site A." Therefore the pseudonym of "Lakeshore" will be used throughout this thesis when referring to the specific site studied and the pseudonym of "Scenic" will be used for the county in which the site is located.

Review of Literature

The field of recreation research is in its infancy in the research community. The need to provide recreation facilities was recognized by the early Puritan settlers in New England when they established the first city park in 1634, the Boston Common.⁶ As America grew, other cities recognized the need for providing areas where its inhabitants could go to relax and recreate. Later in 1872, the

⁶Reynold E. Carlson, Theodore R. Deppe, and Janet R. Maclean, Recreation in American Life (Belmont: Wadsworth Publishing Co., Inc., 1967), p. 30.

federal government recognized the need for preserving the natural beauty of the American continent for the enjoyment of present and future generations and thereby establishing our National Parks System.⁷

It was not until the late 1930's that members of Congress recognized the growing problems of the lack of outdoor recreation facilities in the United States. Up until now, America had been neglecting its heritage of the outdoors. Federal funds were allotted for building of recreation facilities, state parks, etc. WPA and CCC programs aided in construction of facilities and the rehabilitation of the country.⁸

The next major action concerning outdoor recreation needs was in June 28, 1958, when Congress established the Outdoor Recreation Resources Review Commission (ORRRC) under Public Law 85-470. The Commission's purpose was to determine America's recreation needs, present resources available and needed in the future, and determine policies and programs to meet these needs.⁹

Although the study was basically fact finding in nature, it was the first major attempt to bring research

⁷Ibid., p. 32.

⁸Ibid., pp. 45-46.

⁹For a detailed description of the Commission's purpose and its findings see Outdoor Recreation Resources Review Commission, Outdoor Recreation for America (Washington: Government Printing Office, 1962), pp. 1-10.

into the field of recreation. One of the chief recommendations of ORRRC was that "a systematic and continuing program of research is needed to provide the basis for wise decisions and sound management" and "one of the most urgent research needs is for more knowledge about direct benefit that individuals derive from outdoor recreation."¹⁰

ORRRC Study Report No. 24, Economic Studies of Outdoor Recreation¹¹ was one of several reports the Commission published on economics in recreation. The report, a group of essays, concerned itself with various economic aspects of outdoor recreation. Such aspects discussed are investment, pricing, timing, benefit-cost evaluation, public-private relationships, and economic impact. This study is only one of twenty-seven studies ORRRC has undertaken in the field of recreation. However this report was one of the first of its kind to deal with recreation economics.

One of the early advocates of more research in economics and recreation was Marion Clawson of Resources for the Future, Inc. Dr. Clawson has contributed greatly to the research needs in recreation. In Economics of Outdoor Recreation, he brings together aspects of land use, management, and economics. Details of economic impact on

¹⁰Ibid., pp. 182-84.

¹¹Outdoor Recreation Resources Review Commission, Economic Studies of Outdoor Recreation, ORRRC Study Report 24 (Washington: Government Printing Office, 1962).

local areas associated with recreation is well presented.

Regarding economic impact Clawson states that:

. . . economic impact on the economy of local areas cannot be measured by total expenditures. But income, the number of jobs or employment, sales and value added (which is gross expenditures made in the area less the costs of the goods and services purchased by the firm making the sales to the recreationist) are all units which might be appropriate for one purpose or another. A saving fact is that these measures of the local economy tend to move together. That is, as sales rise, value added and employment generated also tend to rise.¹²

Clawson further goes on to point out that these measures do not always move in the same direction and may move in opposite directions. Although these problems may exist, it is still possible to use these methods to assess changes in the economy that are likely to occur with the development of recreation facilities.¹³

In 1959, Alexander H. Morrison conducted a study on the impact of industry in a small rural area in Virginia. Using a time series design, Morrison was interested in the changes in growth in manufacturing, commerce, employment patterns in major occupations, size and distribution of income, and the nature of the labor force. He found that when the industry moved into an area of agricultural base, significant changes took place. Changes were brought about

¹²Marion Clawson and Jack L. Knetsch, Economics of Outdoor Recreation (Baltimore: The Johns Hopkins Press, 1966), p. 239.

¹³Ibid., p. 240.

in the income distribution functions of retail and whole-sale trade and the market places showed an increasing specialization in certain functions with growth and population.¹⁴

Herbert J. Funk in studying the effects of a manufacturing plant on businesses in an Iowa community found that when a new industry is brought into a new community, it contributes greatly to the growth of that community. He found that the industry had a direct effect on sales increases as well as population growth. Not only did sales increase but employment and wages also increased.¹⁵

In 1965, Littlefield and Andrews produced a study entitled The Economic Impact of Recreation for the State of Wisconsin.¹⁶ Utilizing personal survey questionnaires to determine the contribution Wisconsin recreationists made on the economy of several counties, Littlefield and Andrews found that recreationists were responsible for 1,098

¹⁴Alexander H. Morrison, "The Impact of Industry on a Rural Area in Northern Virginia: A Case Study of Development in Warren and Surrounding Counties, 1930-1954" (unpublished Ph.D. dissertation, University of Virginia, 1959).

¹⁵Herbert J. Funk, "Effects of a New Manufacturing Plant on Business Firms in an Eastern Iowa Community" (unpublished Ph.D. dissertation, Iowa State University, 1964), pp. 198-200.

¹⁶James E. Littlefield and Richard D. Andrews, The Economic Impact of Recreation, Wisconsin Development Series (Madison: State of Wisconsin, Department of Resource Development, 1965).

full-time equivalent employment positions in three Wisconsin counties. This number when projected for the State of Wisconsin showed that recreationists were responsible for 61,240 full-time equivalent employment positions in 1963.¹⁷

The economic impact of Louisiana deer hunters on local communities was investigated by Paul H. Phillips in 1965.¹⁸ Phillips utilized a questionnaire survey of 2,059 hunters hunting in the Chicago Mills Management Area during the 1964 five-day deer hunting season. It was determined, from a 60.8 per cent response, that "foreign" hunters, (non-residents of the immediate surrounding counties), contributed \$45.59 per individual hunting effort while local hunters contributed \$13.55 per individual hunting effort. The economic impact of hunters in this area was over one-quarter of a million dollars of which three-fifths was contributed by "foreign" hunters.¹⁹ Phillips concluded that the game management area was a great economic asset to the surrounding communities.

An unpublished Ph.D. dissertation by Robert J. Kalter investigated the possibility of developing a model by which economic effects of state and federal based

¹⁷Ibid., p. 29.

¹⁸Paul H. Phillips, The Economic Impact of the Louisiana Deer Hunter on the Communities Surrounding the Chicago Mills Game Management Area (Baton Rouge: Louisiana Wildlife and Fisheries Commission, 1965).

¹⁹Ibid., p. 21.

recreation projects on the economics of local political subdivisions can be measured.²⁰ He developed a model by which impacts could be measured using a modification of the Leontief input-output technique.

Another study which probed into the field of economic impact of recreation was done by Rajender, Harmston, and Blood in 1967.²¹ The study is concerned with the existence of two economic markets within Teton County, Wyoming. These markets were classified as the local and the export markets. The researchers sought to determine the effects recreationists (the export market) had on the local market. It was found that with greater increase in the year around tourist trade, the greater was the influence on the local economy and also on the decrease in the unemployment rate as the tourist season lengthened.²²

Several private agencies have also become interested and have produced studies on recreation impact. In 1968, one of the agencies, the Chilton Research Services produced a study entitled The Economic Impact of Recreation-Tourism in the Connecticut River Basin. Chilton determined

²⁰Robert J. Kalter, "A Model to Estimate the Economic Effects of Water-based Recreation Projects on Local Political Subdivisions" (unpublished Ph.D. dissertation, University of Wisconsin, 1966).

²¹G. R. Rajender, Floyd K. Harmston, and Dwight M. Blood, A Study of the Resources, People and Economy of Teton County (Laramie: University of Wyoming Press, 1967).

²²Ibid., p. 65.

that the Connecticut River Basin, since its establishment by the United States Army Corps of Engineers, was responsible for 5,200 full-time job equivalents, of which 900 were from resident expenditures, 2,500 from non-resident tourist expenditures, and 1,800 from vacation home occupants.²³

These equivalent job figures were obtained by dividing appropriate income originating figures by average 1966 wages and salaries in services and retail establishments serving the recreator population for each of the six geographical components making up the Connecticut River Basin.²⁴

In the past, the State of Michigan's natural resource agencies have not conducted recreation impact studies. Several of these agencies are now either conducting or planning to undertake impact studies. The Research and Development Division of DNR and the Department of Park and Recreation Resources, Michigan State University are jointly conducting a study on the coho fishing impact in northern Michigan. The results of the study will be published in 1970. It is hoped that other state agencies will recognize the need for conducting recreation impact research and utilize the results of these studies in planning of future projects throughout the state.

²³Chilton Research Services, The Economic Impact of Recreation-Tourism in the Connecticut River Basin (Philadelphia: Chilton Research Services, 1968), p. 71.

²⁴Ibid.

CHAPTER II

THE STUDY AREA

Before discussing the methodology used in this study, it is felt that a general description of the community selected for investigation will present the reader with a better understanding of the physical resources of the area and its potential to meet future recreation needs.

Location

The county of Scenic in which the community of Lakeshore is located lies on the coast of Michigan with a major part of its boundary bordered by one of the Great Lakes.¹ The county is predominantly marginal agricultural land with very little industry. Because of this lack of industry and its location on the lake, the county is one of the most scenic and popular resort areas in the state. Lakeshore lies within 300 miles of the major population centers in Michigan and many in adjacent states. It is accessible via major interstate highway routes and

¹The pseudonyms "Scenic" and "Lakeshore" have been chosen by the author to represent the county and community respectively in which the study was undertaken. These names will be used throughout the study.

secondary roads. The countryside is rich in scenery and provides all varieties of recreational activity for both young and old.

One of the most prosperous communities in the county is the Village of Lakeshore. Lakeshore is located in a sheltered area on the "Great Lake" and provides a major access site for recreation boating activities on it.

Geography

The surrounding countryside is characterized by rolling hills. Because of the topography, soil type (sandy loam), and location on the Great Lakes, the area is suitable only for the production of fruit with cherries being the primary crop. The forested areas are predominantly coniferous along the sandy coast line with maple-beech forests characterizing the morainal plains.

Climate

Because of Lakeshore's proximity to the Great Lake, the community enjoys mild winters and cool summers. The average rainfall throughout the year is 32.51 inches and the average temperatures are 24.4°F in winter and 67.9°F in summer.

Soil Type and Fertility

The soil cover in the area is predominantly sandy to sandy loam. Because of this, the area is generally unsuitable for the production of grain crops. The primary

agricultural crops produced in the area are cherries, apples, asparagus, and strawberries. Cherries are the major crop.

Land Ownership

Most of the land within the community and in the surrounding countryside is privately owned. The village owns several parcels of land which are used for parking lots, dumps, and also recreation. The latter is lake front property and is used for swimming by local residents and tourists. Adjacent to the swimming beach is the public marina which is owned and operated by the village.

The land ownership within a ten-mile radius of the community is primarily in private ownership. There are, however, three parcels of land owned by the public. These include an undeveloped lake front state park and two lake front township parks. One of the township parks offers picnicking and rustic primitive camping while the other park is a popular scenic picnic park. The state park is not accessible via public roads and therefore is generally not used.

History

Regional

Starting in the 18th century and until recent times, the development of the area was characterized by three major stages. These stages influenced the growth and development

of the area and contributed greatly to the growth of the state. The three stages were fur trading, lumbering, and fruit growing. Today there is a fourth stage developing which will have a marked effect on the economic development patterns in the future, this stage is tourism.

Fur trading.--During the 19th century fur trappers and traders, of French and English origin, were attracted to this region of the state in quest of the highly prized pelts of beaver. The beaver pelts were cherished by the European noble classes and were used as the stylish dress of the day. Because of this status, the beaver became the standard of exchange between the French, English, and colonial Americans in the New World. With the reduction of beaver in the region, other fur bearers were sought. However, as with the beaver, the population of these animals soon dwindled and became uneconomical to pursue.

Although the fur trading industry was primarily responsible for the reduction of fur animals, another growing industry soon developed and changed the habitat of the fur bearing animals. This was the lumber industry.

Lumber industry.--Logging started in southern Michigan about 1830 and spread northward as southern areas became depleted of marketable timber. Early sawmills sprang up along stream courses and outlets and boom towns evolved. Many of the towns that evolved with the lumber industry became major seaports on the Great Lakes and

exported lumber to the major industrial areas of the country--Chicago, Detroit, Erie, etc. Michigan became the leading state for lumber production during the Civil War and held this position until the 1890's.²

With the decline of lumbering in Michigan, many of the boom towns died and their inhabitants moved on Westward or to the industrial centers of the country. Those who remained behind began farming the area but for the most part were unsuccessful.

Fruit growing industry.--Although the area was a failure for the production of grains, it was soon noted that the area was very adaptable for the production of fruits. Thus with the closing of the 19th century, the reduction of lumbering was followed by the emergence of the fruit industry. In the early 1900's, cherry orchards sprang up across the countryside and cherries became the primary economic industry in the region. However, the industry could not compete with the industrial centers of the state and country for the labor forces. As the industrial economy progressed, more farmers and workers in the region left to seek a "better life" in the cities to the south. As this continued, the area suffered labor and economic losses and the prosperity of the region soon declined.

²A. E. Wackerman, W. D. Hagenstein, and A. S. Michell, Harvesting Timber Crops (New York: McGraw-Hill Inc., 1966), p. 21.

Tourist industry.--With the coming of the industrial and technical revolution, new prosperity developed in the urban areas of the state. Collective bargaining by unions aided this development by providing more leisure time and greater disposable income for its members. The industrial sector, with its mass production techniques, produced a motorized vehicle which replaced the horse and buggy and opened the door for the emerging tourist.

Thus, with greater mobility and more leisure time, the tourist sought to escape the complexities of city life and find solace along quiet streams and lake shores. This region, whose population once left for greater economic opportunity in the cities, returned to enjoy the natural wealth of undeveloped and unblemished lands. Thus, the natural areas in the sparsely settled areas of the region became assets to the local communities.

Local Development

The community of Lakeshore had its beginnings back in the 18th century. Its first inhabitants, the Chippewa Indians, used the sheltered area for one of their camps while hunting, fishing, trapping, and later as a fur trading center with French, English, and American traders.

As the boating traffic increased on the Great Lakes, the use of the Lakeshore area increased and an early settlement developed. Because of its locale, Lakeshore soon became a major destination point for merchants.

With the growth of lumbering in northern Michigan, Lakeshore became a seaport for the shipment of logs and lumber to the industrial centers of the Midwest. Enjoying economic growth, Lakeshore began to develop physically. A major aspect which accounted for Lakeshore's growth was the presence of the railroad in the community. With the coming of the railroad, other businesses followed bringing greater economic growth to the community. A car ferry service also began and provided ferry service across the Great Lake to other seaports. This service was later abandoned.

It was during this time of development, 1863, that Lakeshore became the first county seat for Scenic County and remained so for twenty years. The first school house in the county was erected in Lakeshore in 1850.

As the lumbering industry began to decline, residents in the region, including Lakeshore, moved to other areas of the state and country in search of better opportunities. Those who remained began to farm. It soon became evident that fruits would become the major crop in the county and fruit processing plants developed. Lakeshore was one of the few communities which had a processing plant. Fruit, primarily cherries, was processed and shipped from the plant by steamer ships and the railroad.

As other forms of transportation came into their own, shipment via steamers ceased and Lakeshore became just another coastal community. Despite the presence of a small industry, cherry processing, Lakeshore was dying. The

bigger industrial centers to the south had been successful in competing for the labor force of the region and the community thus causing a decline in the population. Lakeshore's once glorious expectations for growth and development were no more. However, two factors, the scenic countryside and the development of tourism helped save the community.

The Lakeshore area became recognized as a resort area in the late 1800's when businessmen from Chicago came via steamer to Lakeshore. These businessmen recognized the serenity of the area and a resort soon developed on one of the peninsulas in the area. Motor launch service became available to transport tourists from Lakeshore to the resorts. This service remained in existence from 1890 to the 1920's at which time other forms of transportation became available.

As tourism grew, Lakeshore also grew and other industries evolved. Commercial fishing for trout, smelt and perch and the sport fishing of the famed lake trout based itself in Lakeshore. The community became known far and wide in sporting circles for the catches of lake trout in the fishing grounds off its coast. This lasted until the 1940's when the sea lamprey appeared in the Great Lakes and the sport fishing for this species declined.

The region also became known for its pleasant and relaxful atmosphere. With its strategic location on the

lake and its beautiful rolling countryside, the region became one of the most popular resort areas in the state.

As the boating demand grew, facilities developed to meet this demand. Marina retail and service outlets flourished to satisfy the needs of Michigan's mobile tourists.

Today the Village of Lakeshore is growing once again. The economy of the community is based on both small industry and consumer tourism. However, there is a growing demand for winter recreational activities and facilities in the state and this will also have a positive effect on community growth in the future.

Marina facilities.--As the demand for boating facilities increased in the area, Lakeshore recognized the need to provide facilities for this class of recreationist. In the early 1950's, plans for a marina in Lakeshore began.³ In May 1958, the Michigan Waterways Commission approved the engineering plans for a marina. Construction of the facility began in 1959 and was open for business in summer of 1960.

It was soon evident that the twenty slips in the marina were not adequate to serve the needs of the expanding boating class. New plans emerged to expand the marina

³A marina refers to a complete recreational harbor which includes the protective works, boating facilities and shore developments such as restaurants, hotels, boat services, etc. Marinas are considered to be a form of multi-purpose harbor and not a special installation.

from twenty slips to seventy-eight slips. This, however, would also require extending the breakwater further out into the bay.

Approval for this expansion was granted by the Waterways Commission in 1968. The Village of Lakeshore applied for matching funds under the Public Works and Economic Development Act of 1965. A grant of 50 per cent of the cost of marina construction was approved by the Economic Development Administration (EDA). Other funding for this expansion came from the Waterways Commission, 40 per cent; and the remaining 10 per cent of the costs would come from revenue bonds sold by the Village of Lakeshore. Actual construction began in June 1969.

Since the early 1800's, Lakeshore has adapted to the transitional stages of development. Its establishment as a fur trading center in the 1800's made it one of the earliest economic centers in northern Michigan. Throughout its development, it survived the transition between fur trading, lumbering, and fruit production. Several times the community was threatened with extinction but through the determination of its inhabitants it survived.

Although it is still classed as a small community today, Lakeshore has become well-known, not just for its fruit production but for its other natural resources which makes it a popular resort area for both young and old alike. Its harbor is only one of its assets, but it is

the one receiving the greatest demand for expansion to cope with the increasing amount of boating traffic in the harbor and on the lake.

Although it is assumed that the harbor has had an impact on the community, it remains the task of the author to develop a method to measure this impact.

CHAPTER III

METHODOLOGICAL APPROACH

Study Design

Multiple Time Series Approach

In order to study the effects the marina had on the local community, a multiple time series design was chosen to trace the growth of the community from 1955 to the present. This design provided a framework for the data collection and analysis.¹

This approach normally requires at least two sites, one controlled and one experimental. Observations are made in both sites for a period of time before the experimental treatment is applied to one site and then continued for some time as shown in Figure 1. From the observed data, trends are established for each site and the effects of

¹The design described here is not a true experiment. The experimenter does not exercise control over events occurring in the experiment and cannot assure random assignment of subjects to the control and experimental groups. The experimenter's efforts must be directed towards identification and control of plausible alternative hypotheses. This type of approach has been referred to as "quasi-experimental." See Donald T. Campbell, Experimental and Quasi-Experimental Design for Research (Chicago: Rand McNally and Co., 1963).

Time	1	2	3	4	5	6	7	8	etc.
Site #1	0	0	0	OX	0	0	0	0	
Site #2	0	0	0	0	0	0	0	0	

Figure 1. Basic Experimental Design Showing Periods for Observations (0) and Treatment (X) of Significant Variable.

other variables of interest are noted. Data are plotted and deflections in trends indicated by changes in slope and intercept are noted (see Figure 2). Net deflection unexplained by the alternate hypothesis or by the control site are assumed to have resulted from the effects of the treatment variable.

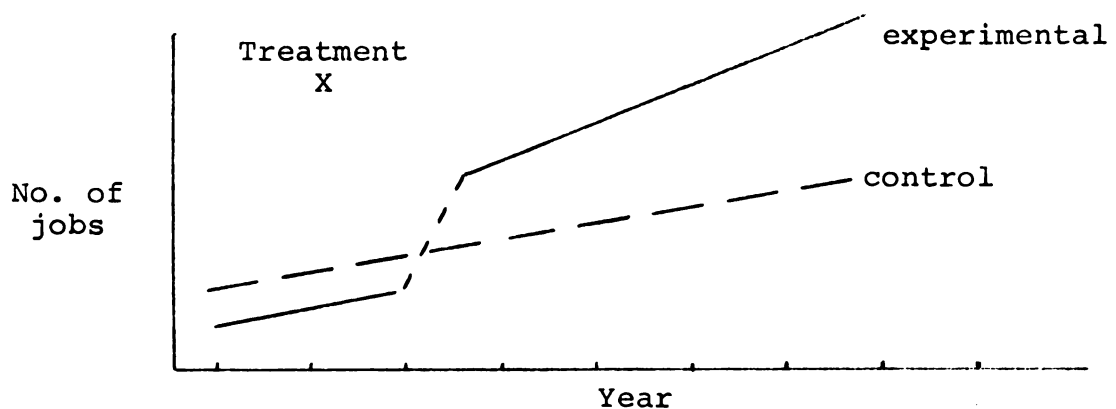


Figure 2. Diagram of Observed Change in Employment After Treatment (X) Imposed on Experimental Site.

The multiple time series design possesses certain strengths and weaknesses which are as follows.

Validity.--The validity of a technique is the degree to which it measures that which it is intended to measure. In the present case, it is the degree to which the method isolates the effect of the construction and operation of the marina on employment from the effects of other associated variables. A second aspect of validity is the degree to which results can be generalized to situations other than the specific one studied. The following factors jeopardize the validity of an experimental design.

History.--The set of events, other than the experimental variable, occurring between the time of the initial observation and the second may make it difficult to identify the experimental variable's effects. In the matter of employment, the construction of a new industrial plant, a general recession, or a period of easy credit may affect employment levels. In this type of design, the effects of historical events other than those being tested can be determined by observation of the control site to the extent that the event is pertinent to both sites. Obviously, a certain amount of history remains "uncontrolled." In the case of those events peculiar to one site. they can only be observed and recorded with a note of the likely effects.

Recurring events such as the variation in the price and quantity of the fruit crop are controlled by the series

of observations preceding the experimental treatment for all those other variables that are observed concurrently with the variation in employment.

Maturation.--Maturation is the process of organic change in the subjects under study. The employers may grow older or become less healthy and consequently less able to manage their business without help. Such an event may be of importance to the other communities in the area for the area suffers from a net out-migration made up primarily of the young.

The design controls for maturation with a series of observations preceding the experiment treatment. A trend is established from which the treatment must be accompanied by a deflection in order to demonstrate probable effect.

Testing.--Testing influences behavior to the extent that the subject is aware of it. For a number of reasons those taking the test or being observed are likely to perform differently than they would ordinarily. In the case of the present study, these effects are partially controlled by the use of a control site and partially by the generally non-reactive nature of the observations.

Selection-maturation interaction.--The selection-maturation interaction occurs when one of the two groups, control or experimental, may be suspected of a maturation rate different from that of the other. In such a case, the

maturation of a group may be misinterpreted as the experimental effect or it may obscure the experimental effect. In the cases used here, the time series tends to demonstrate any such differences and to permit them to be considered in the interpretation of the results.

Selection of subjects.--The selection of subjects for assignment to experimental and control groups can introduce error if care is not taken to minimize that possibility, preferably through random assignment. In the present study, the assignment is fixed and was originally self selection. By using a time series design, however, it should be possible to discover the magnitude of differences thus introduced and to take them into account. This is especially true since it is the deflection and not the magnitude of differences that will demonstrate the effects of the experimental variable.

External validity.--The external validity is the degree to which the findings of the experiment can be generalized to populations other than the sampled one. In a logical sense, such generalizations cannot be defended, however, the persistent recurrence of an association over a range of varying conditions suggests some degree of universality and it may be useful to accept the validity of the generalization. There are several effects that limit the generalization of the experiment and these are the

reactive effect of testing, the reactive effects of selection and the experimental variable, and multiple treatments.

The reactive effect of testing occurs when the pre-test or observation sensitizes or desensitizes the subjects to the experimental variable causing them to react differently than would an unpretested population. Such an effect is not controlled in this experimental design.

The reactive effects of selection and the experimental variable occur when the population chosen for the study is different and related to the experimental variable than is the wider population. In the present study case, it was desirable to find two similar communities subject to the same general influences, one of which received the marina while the other did not. Restraints such as this limits the choice of sites and makes it difficult if not impossible to control for reactive effects of selection. It remains only to demonstrate any effects discovered in a sufficient number of diverse settings that their universality becomes plausible.

Multiple treatments where the same group of subjects are subjected to more than one experimental treatment opens the door to synergistic and antagonistic effects. That is, the effect of the treatment with another treatment may result in gains greater or less than the sum of gains expected when each treatment is applied independently. Unless recognized, the effects of a given treatment

may be incorrectly diagnosed. In the design discussed here, multiple treatments are not a factor.

Archives.--Archives both public and private, will be the source of the largest part of data used in this study. Both sources are subject to shortcomings. The major shortcomings affecting the data are the possible systematic recording of incorrect information in the archives, failure in the recording of pertinent data, the manner in which information is recorded may change over time; and the preservation of such data may vary depending on the need for reference back to the records and the statutes of the state.²

Modification of the Time Series Design

During the early design of this study, an effort was made to survey several sites in Michigan's lower peninsula to find the area best suited to conduct this study. Several field trips were made by the research team to find the best area which would provide two compatible sites and still remain largely uninfluenced by the commerce of larger metropolitan centers. It was determined that, for one reason or another, there existed no two compatible sites for

²For a more detailed explanation of the above factors affecting internal and external validity see Donald T. Campbell, Experimental and Quasi-Experimental Design for Research (Chicago: Rand McNally and Co., 1963), pp. 5, 6, 39-42.

the criteria established. Therefore, a single site was chosen to conduct the study.

Because of the lack of suitable compatible sites to apply the multiple time series design, the community of Lakeshore was chosen to serve as both the control and experimental site. The period from June through November was selected as the experimental period since the harbor is only operational at that time and the period from December through May was chosen as the control period since the harbor is not in use and has no effect on business activity. Another reason for this approach is that the effects of the initial treatment, 1958, should clearly show changes in activity in subsequent years for the period June through November while the activity for the period December through May should remain unchanged. However, the effects of normal growth in the community would be observed.

Survey Area

To determine the impact the marina had on the community, it was first necessary to restrict the boundaries of the area to include the major business section of the community. The present physical boundaries of the incorporated Village of Lakeshore served as the boundary for the study. Characteristics of the survey area regarding

location, population, income, industry, and employment are described in the following sections.

Population

The county in which Lakeshore is located has had a rising trend in population growth since 1930 while the community of Lakeshore has shown a decline in population from 1940 to 1960 (see Figure 3).³ Data regarding population for Lakeshore prior to 1940 and that projected from 1960 on was not available in records reviewed. This decline in population for Lakeshore may have been due to the second World War, which brought the younger men into the armed services or to the larger industrial areas to work and support the war effort. Those men who went into the services may have chosen to take jobs in the industrial areas rather than return to their rural home town.

It is expected that the population decline for Lakeshore will cease during the 1960's and change to a rising trend from 1970 to year 2000 as it has done for the projected township population (see Figure 3). The United States Bureau of Census served as the source for population data for the Village of Lakeshore. Because population census is held every ten years, no data was available for period after 1960. The next census will occur in 1970.

³U.S., Department of Commerce, Bureau of Census, Census of Population (Washington: Government Printing Office, 1900-1960).

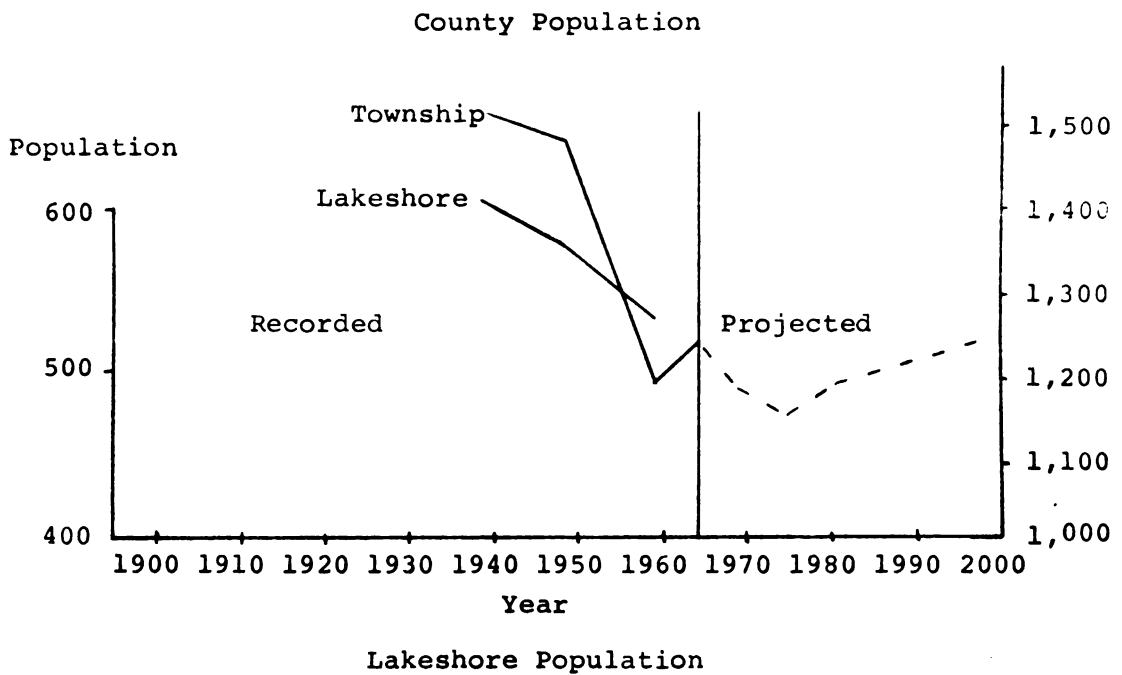
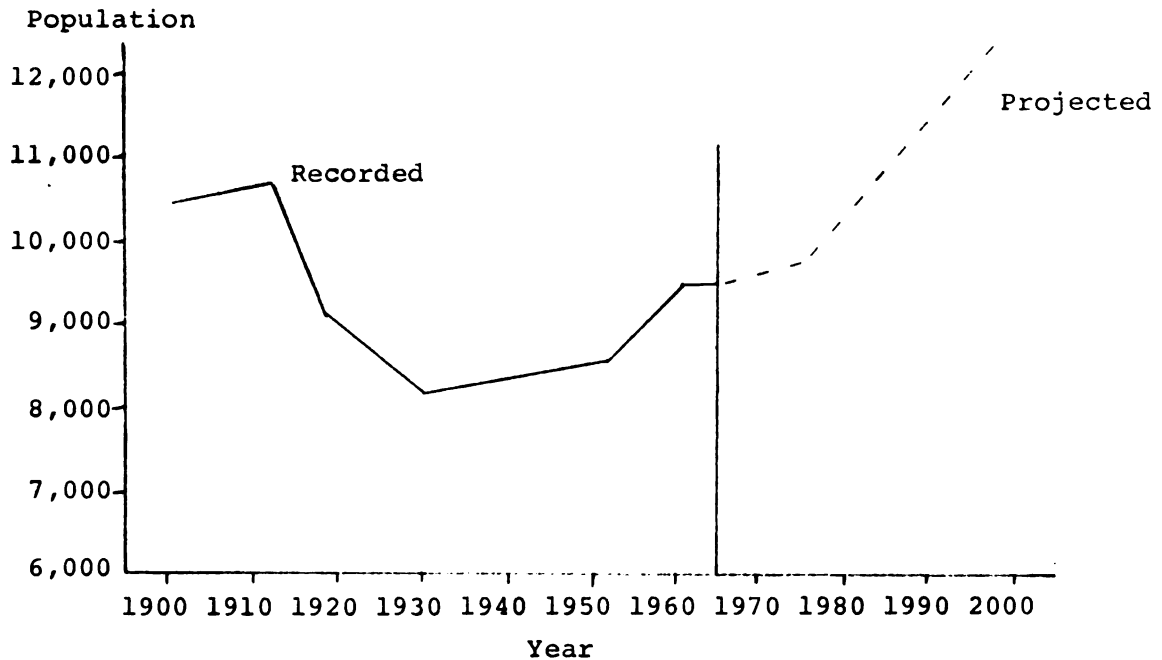


Figure 3. Past and Projected Population Patterns for Lakeshore, the Township and the County. [Township data from Preliminary Population Projections for Small Areas in Michigan, by State Resource Planning Division, Michigan Department of Commerce Working Paper No. 9, November 1966.]

Income

The average per capita and household buying income for the Village of Lakeshore is unavailable, however, for the county the data is presented in Figure 4 showing the comparison over the years from 1954 to 1965.⁴

Industry and Business

The Village of Lakeshore is composed predominantly of small retail businesses which depend on the summer season for the greatest part of its trade. Most of the business activity takes place from June through September and sometimes into November. The latter trend has developed only recently as a result of the coho fishing boom in Michigan.

Most of the summer patrons for these businesses are summer residents, tourists, and migrant farm workers. With the advent of extensive mechanization in fruit harvesting, the migrant population has decreased, not necessarily in total numbers but in the length of time they spend in the area during harvesting. The businesses, however, have felt this decline in trade only slightly since the increase and promotion of tourism in the area has replaced the migrant farm laborers, to an extent, in the consumer market.

The industrial sector of the community is composed of a fruit and vegetable cannery, a textile mill product industry, a chemical research plant, and a boat builder.

⁴Data extracted from Michigan Statistical Abstracts for respective years.

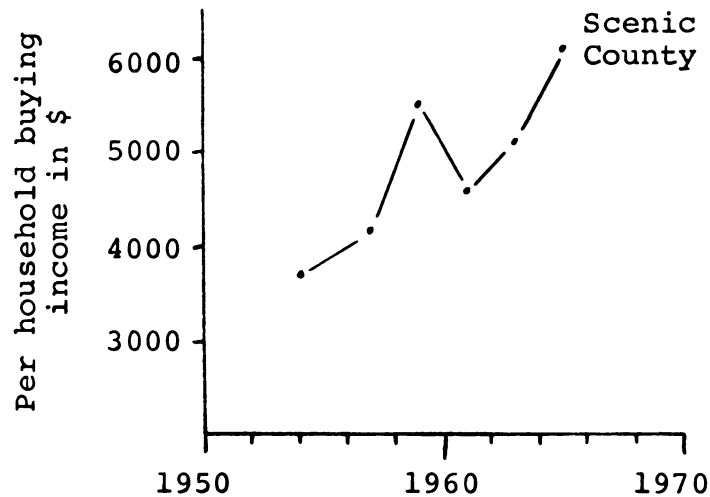
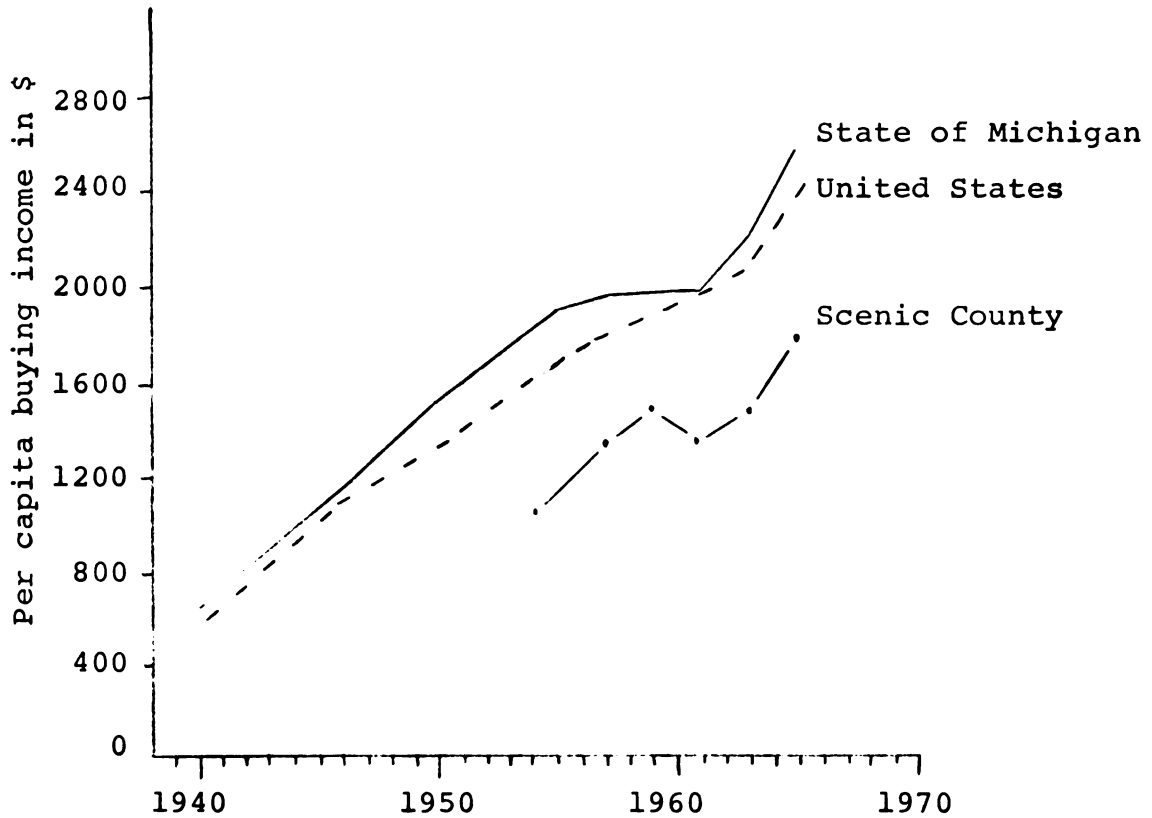


Figure 4. Per Capita Buying Income for Scenic County, State of Michigan, and the United States and Per Household Buying Income for Scenic County. [Source: Michigan Statistical Abstract, respective years.]

The cannery is the largest in operation and contributes greatly to the economy of the community. However, it is affected directly by the success or failure of the fruit production in the area.

Perhaps the most significant single influence in the community's economy is the presence of a resort trailer court on the southern end of town. Although this resort complex is new--it opened in 1967--it has had a major impact on the local business community. The court has expanded from 108 to 210 units in 1967 to some 343 units in 1968, and to 415 units in 1969. These units have been 98 per cent occupied during the summer months. The average length of stay for the trailer camper unit was seven days in 1967 with 4.98 members per unit and eight days with 5.2 members per unit in 1968.⁵ The overall breakdown of industry and businesses in Lakeshore is seen in Figure 5 as coded in accordance with the Standard Industrial Classification code book published by the United States Bureau of Budget, 1963. The total numbers of such businesses are listed for years 1953 through 1968 to indicate growth and change in the community.⁶

⁵Data extracted from personal business records and statistical summary for each year's business of the trailer court owner and manager.

⁶There were approximately five retail outlets in Lakeshore for which records were unavailable. The records for several of the outlets were destroyed after the outlets went out of business. There were also several outlets which would not provide information to the research team.

SIC Code	Group	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
0912	Fin Fisheries	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1511	General Building Construction	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2033	Canned Fruits & Vegetables	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2399	Textile Mill Products n.c.c.			1	1	1	1	1	1	1	1	1	1	1	1	1	1
2810	Chemical & Allied Products								1	1	1	1	1	1	1	1	1
3732	Boat Building & Repairing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5210	Building Materials Dealer														1	1	1
5231	Paint, Glass, & Wallpaper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5392	Dry Goods & General Merchandise	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5411	Grocery Store	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
5463	Retail Bakeries														1	1	1
5540	Oil Products (home)			2	2	2	2	2	2	2	2	2	2	2	2	2	2
5541	Gasoline Service Stations	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
5599	Marina-Boatyards	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
5641	Children & Infants Wear	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5722	Household Appliances	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5732	Radio & Television Store			1	1	1	1	1	1	1	1	1	1	1	1	1	1
5812	Eating Establishments			2	2	2	2	3	3	3	3	2	2	2	2	2	2
5813	Drinking Establishments	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5912	Drug Store	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5930	Antique & Secondhand Dealers	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5992	Florists								1	1	1	1	1	1	1	1	1
5997	Gift & Souvenir Shops	1	1	1	1	1	2	3	3	3	3	4	4	5	5	5	5
6020	Commercial Savings Bank					1	1	1	1	1	1	1	1	1	1	1	1
6411	Insurance Agents, Brokers, & Service			1	1	1	1	1	1	1	1	1	1	1	1	1	1
7013	Tourist Courts and Motels	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4
7031	Trailer Parks														1	1	1
7032	Recreation Camp	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7231	Beauty Shop				1	1	1	1	1	1	1	1	1	1	1	1	1
7241	Barber Shops	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
7535	Paint Shop	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8011	Physicians			2	2	2	2	2	2	2	2	2	2	2	3	3	3
8021	Dentists					1	1	1	1	1	1	1	1	1	1	1	1
8031	Osteopaths														1	1	1
8060	General Medical Facilities						1	1	1	1	1	1	1	1	1	1	1
8061	Hospitals					1	1	1	1	1	1	1	1	1	1	1	1
8211	Elementary & Secondary Schools	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8231	Libraries	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8661	Churches	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
9190	Personal Services	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9300	City Government (General)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9379	Marina (Public Operation)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 5. Breakdown of Industry and Retail Business in the Community of Lakeshore According to the Standard Industrial Classification Code, U.S. Bureau of Budget, 1963.

Employment and Unemployment

Because of the nature of the retail business patterns, seasonality, a large portion of the summer work force is part-time, working up to thirty hours per week, and overtime for regular full-time employees including owners. During winter months, much of the work is done by the business owners and several employees which may be full- or part-time. A large portion of the part-time labor force has been regarded as underemployed by the Office of Economic Opportunity, which if jobs were available would be full-time employees.

It must be pointed out that some of the underemployed members of the community, capable of being fully employed have chosen to be part-time employees. A major part of this group is composed of the resident Indian population of Lakeshore as well as other residents.⁷ Because of this composition, the data collected and recorded will be in the form of total man hours worked monthly for the years 1955 through 1968.

Procedure

The necessary field work began on June 10, 1969 and lasted until September 10, 1969. During this time, data were collected via personal interview with business owners and managers, and the viewing of personal business

⁷Personal interviews with members of this group.

records to obtain statistical figures for total monthly employment (man hours), gross sales, and attendance.

For each of the businesses directly affected by harbor users, both gross sales and employment were obtained where possible. Establishments which did not appear to be affected by the marina furnished just employment data. These establishments were identified by interviewing each retail outlet to determine if their business catered to or depended upon boaters. It was assumed that certain outlets such as the fruit processing plant and textile plant and post office, etc., would not be affected by boaters therefore only employment data was necessary. Trailer courts, resort camps, and the public harbor provided attendance statistics for their respective businesses.

During the collection of employment figures, the use of a wage/time (dollar/hour) equivalent table was developed to extract man hours from wages paid per worker for the month (Appendix D). This table was developed because many businesses did not record total hours each employee worked, only the salary or wage paid at the end of the pay period. However, it should be noted that where a straight salary was paid, the employee hours were set but overtime was not recorded. This occurred in several cases, however, the employer usually stated the time criteria for which the salary was based.

Employers paying wages for part-time help usually based this on the minimum wage as set by the government.

These wages were pretty much standard for the retail establishments. If an employee is a recurring employee, returning every summer, his hourly wage was generally an increment, e.g., \$.05, higher than a new employee just starting. The Michigan Employment Security Commission (MESC) was another source of data regarding wages paid by employers when such information could not be obtained from the employer himself.

Gross sales figures were recorded quarterly from reports maintained, in accordance with state law, by businessmen or their book accountant. Only those establishments directly affected by marina users were recorded, such as grocery and drug stores, etc.

To determine the effects the migrant population has on the business employment, it was necessary to obtain a list from the county agent of fruit growers in the area, who hired migrant laborers. Interviews were undertaken, to obtain the numbers of laborers the fruit growers hired each year back to 1955. It was found that the growers generally hired the same number of farm laborers every season but laid them off at different times depending on the success or failure of the fruit crop and also corresponding with the closing date for acceptance of fruit by the local fruit processing plant.

Additional migrant labor statistics were sought from the area farm labor office. The branch offices are set up along key entrance routes into the area to keep

track of the number of laborers seeking employment and also to provide information to the migrant laborer as to who is hiring.

The tourist industry plays a major role in the economy of the community. The attendance records of motels and resorts in the area was chosen as one means of recording the number of overnight tourists coming into the area. Since this method of data collection could not control the transient tourist, camper or relatives/friends visiting residents for a period of time, it was determined that traffic counting records maintained by the Highway Department could provide data which would show the changes in traffic into the area.

In seeking to determine the difference in summer and winter resident population, several sources were consulted. The local post office which rented boxes and handled general delivery mail was interviewed to obtain data regarding changes in box rentals during the year. The local school records in the community were reviewed to obtain the number of permanent residents in Lakeshore year round.

Additional supporting statistics were sought from the utility companies servicing the area. However, because of the company's reduced rates for limited use hookups, data for summer resident population from this source was unavailable. Also their method of recording customers did

not provide for the segregation of statistical data for a specific locale.

The Waterways Commission and the Harbormaster of the Lakeshore marina were the sources for data involving marina attendance. These were the primary sources of direct marina impact. Due to the casual recording of data in the early years of operation, figures may show an under estimate of the actual attendance or use of the new marina.

Limitations

The methods employed in data gathering during the time period were affected by certain uncontrollable circumstances. Because of man's social development, control over certain actions or fears that are not easy to achieve. Becoming accepted by all members of the community and obtaining their assistance throughout the study was not always possible. Conservative attitudes and fears could not always be put aside especially if it regarded personal business.

Several of the businesses in Lakeshore would not provide information to the researchers for one or several of the following reasons:

1. Individual business owners did not want their records viewed by any agency which was affiliated with state, federal, or local governments.

2. The information on gross sales, wages, or employment hours were their business and no one else's.
3. The belief that researchers could obtain such data from the archives of the federal or state government, since they pay taxes and report business transactions to those agencies.
4. People felt they were being over studied and over surveyed (questionnaires).
5. A general distrust of researchers and those who would have access to statistics if they were provided.
6. Certain business operators felt that since the marina did not affect their business, their records would be of no help to the study.
7. Records on some businesses were lost or destroyed by fire.
8. Since the business was small and number of employees limited, records were not maintained.

The author believes that number five and number one, in that order were the most important reasons information was not given.

Of the statistical data obtained, several limitations as to its accuracy may be questioned. The data collected on salaried employees work hours were based on the average time the employee would spend on the job for the pay period. During the summer months the salaries of

these individuals would generally be raised since the demand for services by the consumers, tourists, farmers, etc., were greater; therefore, more work hours were required.

Statistical data obtained using wage-hour conversion may be subject to some error since the employers questioned stated that they used the basic minimum wage set by state. However, it was later found that certain businesses would pay under minimum wage for the very unskilled labor. However documentation of this is not available therefore the data collected under this method employed minimum wage.

A few of the smaller businesses, with one or two employees, who did not keep records, were able to provide data from memory. Since these establishments were the older and well established businesses over time, the accuracy of their recollection can be accepted primarily because they worked on a straight forty-hour-week in winter and forty-eight-hour-week in summer.

The use of state sales tax records was also considered. However, the time period of its existence did not provide data for the years of specific interests to the study and therefore was not useful.

One of the problems found after field work began was that cooperation expected from the business establishments decreased as the vacation or tourist season progressed. Since most of the businesses depended primarily

on the summer trade for their livelihood, the imposition of this study on their businesses was recognized. Although most employers tried to provide as much assistance as possible, others were often too busy or did so at the expense of their own time. It is recognized that the gathering of data from the major businesses for this study would have been more easily accomplished during the off-season period of winter and spring. For the seasonal businesses, such as gift and souvenir shops, etc., this would not have been possible since the owners are generally summer residents only and reside in other areas or states during the off-season.

Utilizing these procedures, data was obtained and recorded throughout the summer and fall. Analysis of data began in November and results are expressed in the succeeding chapter.

CHAPTER IV

ASSEMBLED DATA

This chapter is devoted to the summarization and analysis of field data collected during the period from June 1969 to February 1970. Presentation of the data will take the form of graphs, tables, and other figures to illustrate the relationship and effects of the variables studied as they relate to their impact on community employment levels.

The data presented is the pertinent recorded statistical information for the years 1955 through 1968. Particular emphasis will be placed on the employment growth of relevant and non-relevant sectors within the community.¹ The material in this chapter will follow the following sequence: (1) gross sales of selected retail outlets as an indicator of activity, (2) cherry production and the migrant labor force, (3) seasonal resident effects, (4)

¹Relevant sectors are those business establishments which are affected by boaters using the harbor. Non-relevant sectors are those business establishments which are not generally affected by boaters using the harbor.

tourist and other recreational impact, (5) effects of the harbor, and (6) employment patterns in the community.

Gross Sales of Selected Retail Outlets

During the data collection phase of this study, an attempt was made to gather data relating to consumer expenditures, in the form of gross sales, from selected relevant retail outlets most affected by the boaters using the harbor. This data was collected in anticipation that a relationship between boater expenditures and an increase in employment positions or an increase in employee work hours for the retail outlets could be shown.

The selection of the retail outlets from which this data would be sought was based on the following:

1. The frequency with which the outlet was used by the boaters in the harbor.
2. The retail outlet's designation as a relevant outlet whose services were normally sought by the boating recreationist.

The frequency the outlet was used by the boaters was determined by interviewing the retail merchants to determine to what extent their services were used by boaters. Another circumstance which later influenced selection of a representative number of retail outlets for this data, was the owner's decision to provide this information to the research team. Of the seven outlets interviewed, only three would provide information concerning gross sales. Of these

three outlets, two of them proved to be the outlets most frequently used by boaters because of the services they provide. The author believes these two outlets are indicators of the business activity as it actually is in the community.

The gross sales information provided by the three outlets are recorded in Table 1. Retail Outlet "A" provided data back to 1955 while "B" and "C" could provide data only as far back as 1961 and 1963, respectively. There are several reasons for this. In the case of retail outlet "B," the records of business activity was retained for a period of seven years, in accordance with existing statutes, then discarded. Retail outlet "C" provided records on his business activity back to 1963 when he assumed ownership of the business. The previous owner was contacted to obtain information on business activity prior to 1963, however, the previous owner proved to be uncooperative to the researchers and would not provide any assistance whatsoever.

Figure 6 shows the growth of the retail outlets over the years and how they compare with each other. It should be noted that there is a distinct trend in that each outlet is growing at an increasing rate during both winter and summer seasons.²

²The breakdown of data into seasons of the year, winter and summer, was done so in an attempt to segregate the year-round resident from the summer populations. The

TABLE 1. Total Gross Sales for Selected Retail Outlets in Lakeshore, January 1955-December 1968.

Year	Retail Outlet		
	A	B	C
1968	\$272,234	\$151,187	\$276,516
1967	243,936	122,299	228,637
1966	228,501	118,883	298,248
1965	166,108	109,291	174,693
1964	159,258	107,769	149,523
1963	150,396	100,154	138,934
1962	149,852	103,930	a
1961	135,114	3,880	a
1960	124,296	a	a
1959	127,523	a	a
1958	127,473	a	a
1957	115,935	a	a
1956	90,331	a	a

^aData for these establishments were unavailable for the years indicated.

Gross Sales
in \$1,000

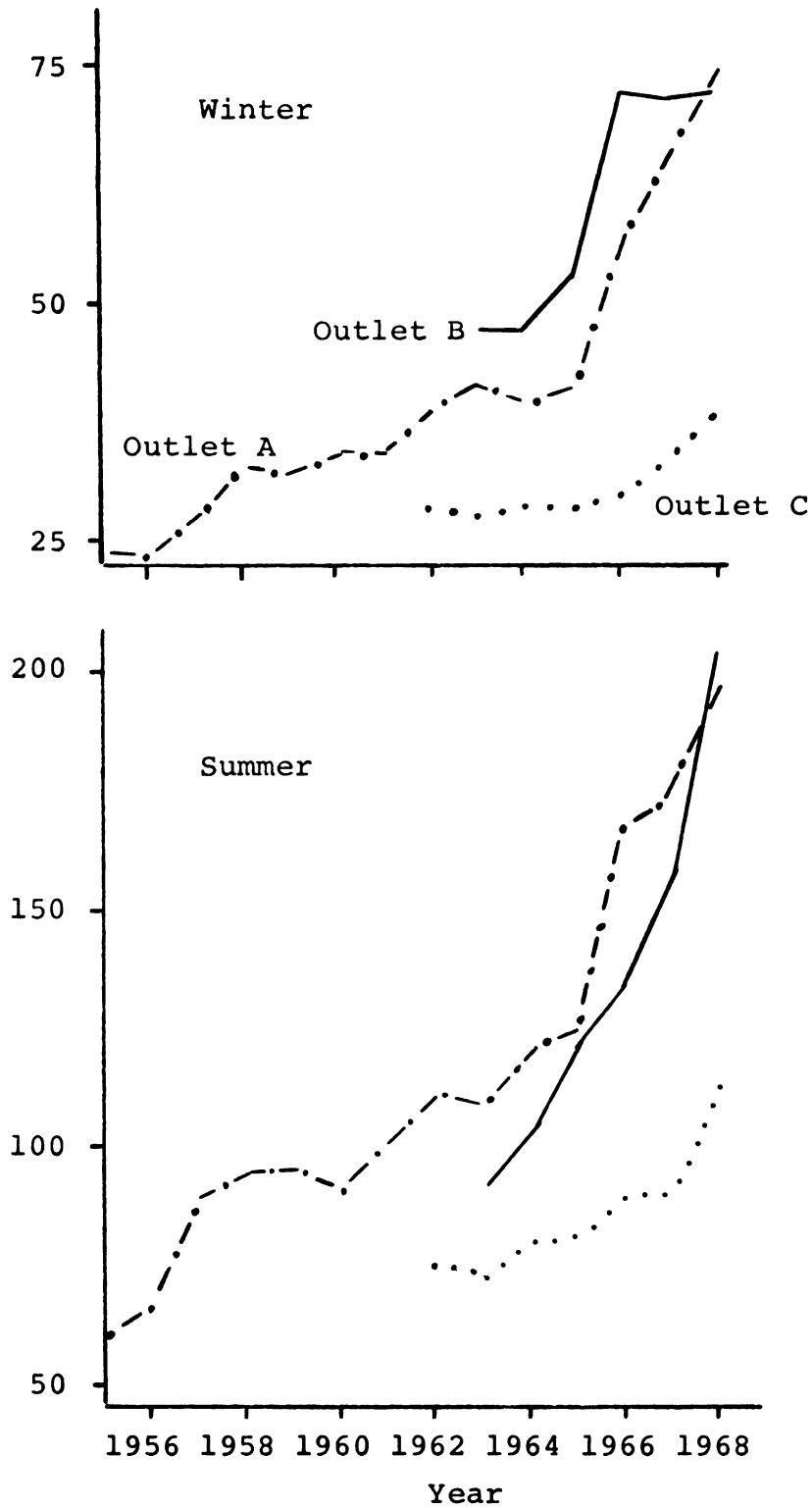


Figure 6. Gross Sales for Selected Retail Outlets in the Community of Lakeshore.

Retail outlet "A" shows a decline in business activity during the 1959 and 1960 winter seasons and the 1960 summer season. It was noted that during this same time period there also existed a decline in employment work hours at the local fruit processing plant.

In looking over the Michigan figures for cherry production for these years, and for the year 1958, it was noted that cherry production had dropped for the years 1958, 1960, and 1963, Figure 7.³ This drop in cherry production may have affected business sales for outlets "A" and "C" since both migrant laborers and factory employees use the services of these outlets. Unfortunately, statistics on the numbers of migrant laborers and the production of cherries in the Lakeshore area are not available to support the above assumptions.⁴ Therefore the author can only assume that the years of low cherry production

winter statistics consist of monthly statistics from December the previous year through May while the summer figures represent data for the months of June through November.

³Donald J. Ricks, Economic Relationships in Red Tart Cherry Marketing, 1955-1967, Agricultural Economics Report No. 94 (East Lansing, Mich.: Department of Agricultural Economics, Michigan State University, June 1968), p. 27.

⁴The local fruit processing plant was unable to provide production data for the years 1955 through 1968. This information was also sought from the State of Michigan Agricultural Department and the local USDA office. Neither agency could produce such statistical information.

Production in
1,000 tons

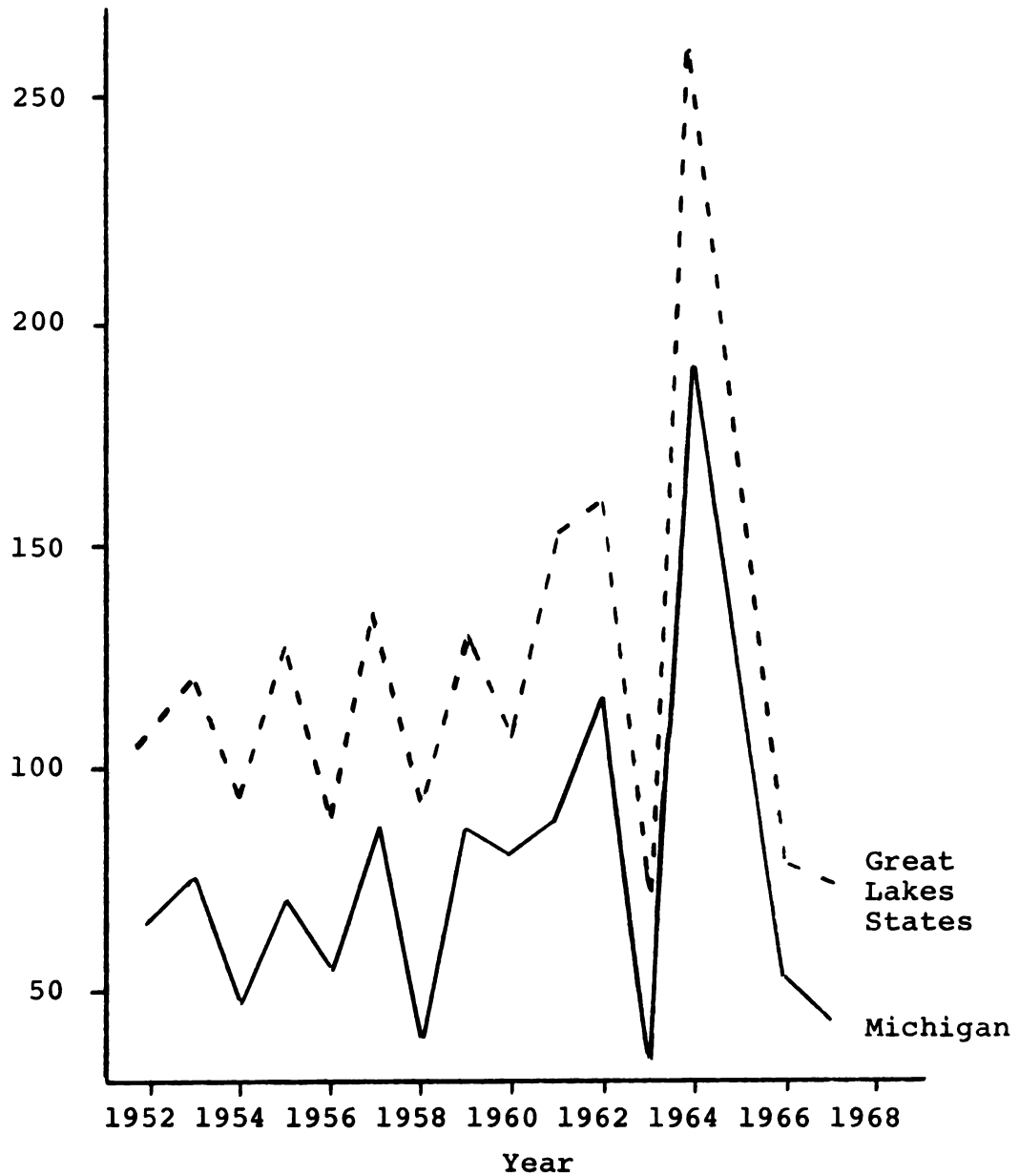


Figure 7. Red Tart Cherry Production for Michigan and Great Lakes Region.

reduced the migrant labor force in the area and consequently reduced the consumer spending of this group.

More accurate consumptions could have been made if data were available for retail outlets "B" and "C" back to the base year.⁵ Additional comments concerning Figure 7 will be made throughout the remainder of this chapter during the discussion of tourism and harbor activity.

Cherry Production and the Migrant Labor Force

The most dominant factor influencing employment patterns in the "Lakeshore" area is the success or failure of cherry production. This has been particularly true for the years prior to 1966. Since 1966, the cherry crop has had a declining influence on employment activity in the community.

This influence can be seen by comparing the fluctuation of cherry production tonnage (see Figure 7) with employment for the fruit processing plant (see Appendix B), and with the total employment figures for the community (see Appendices E and F). It will be noted that as the production of cherries dropped, there was also a drop in employment for the fruit processing plant and also for the community during the summer season. In some instances, the

⁵Several attempts were made to obtain such data from the Michigan Employment Security Commission (MESC), however, the agency has not been able to provide this information.

drop in employment for the community lagged a year behind the drop in cherry tonnage harvested. This is particularly evident for the year 1959.

Since 1966, the production of cherries has had less influence on total employment in the community. The various factors involved in this change will be discussed in succeeding sections.

During the period data were collected on employment at the fruit processing plant, an attempt was made to determine the size of the migrant labor force in the area during the summers of the years concerned. Several sources were investigated which could possibly provide this information.

The county Farm Labor Office was contacted as a source for statistical data on migrant laborers in the Lakeshore area. After considerable investigation, it was found that such data was not recorded nor available from any of the state or federal agricultural agencies. The office suggested we go directly to each orchard owner in the Lakeshore area to obtain this information.

Before going directly to the orchard owners, the research team contacted the county agricultural agent for assistance. Although the county agent did not maintain records on migrant laborers, he was able to provide the author with a list of fruit growers in the Lakeshore area. He suggested that we wait until the end of the summer before contacting the growers. The reason being that many of

growers would be busy harvesting their crop and would not be able to spend time with the research team.

In September, the research team interviewed the fruit growers for their migrant labor employment statistics. It was found that the growers did not maintain records on the number of laborers hired nor the length of time the laborers worked. The growers stated that they either hired the same number of migrant laborers each year but released them at different times or they hired a head picker who controlled the hiring of additional laborers to pick the fruit. These workers were also released at different times depending on the closing data for accepting cherries by the fruit processing plant.

Although the number of migrant laborers employed each season in the Lakeshore area was not available, it was determined that their presence was controlled indirectly by the fruit processing plant. Further attempts to obtain this information involved getting the production data from the processing plant. The author believes that the cherry tonnage processed for each season could be used as an index of the migrant labor force in the area.

In 1967, many orchard owners started to use cherry shakers to harvest their crop. Although the use of shakers in harvesting cherries was limited in 1967, many more orchard owners shifted to this mechanized method of harvesting in 1968. The principle reasons given by the owners for this change were:

1. Labor costs were becoming too high to hire migrant laborers.
2. Costs involved in providing improved housing facilities as required by recent new laws were beyond the economic resources of the grower.
3. The improvement of mechanized harvesting methods proved cheaper in harvesting the cherry crop than hiring migrant labor.

Most of the fruit growers still using migrant laborers stated they would probably shift to the mechanized harvesting method in the future because of the above mentioned reasons. When this change of harvesting methods occurs, the loss of the migrant labor consumer group will be felt by many of the retail outlets in the community.

However, there is another consumer group which has been growing steadily each summer which will ease the loss in business activity created by the loss of migrant labor consumer group. This consumer group is comprised of the summer recreationists and tourist and will be discussed in another section.

The Seasonal Resident

The seasonal resident in Lakeshore is not considered a tourist and thus will be discussed in this section. Since it was impossible to obtain statistical data on this group, the effects it has on the employment can therefore only be surmised.

Most of the summer residents in the Lakeshore area have property in an exclusive private resort peninsula a few miles outside the community. There are several seasonal cottages within the city limits, but these are few in number and have a small economic impact compared to the area mentioned above.

Several attempts were made by the author to obtain factual information on this group. The post office was the first source contacted to obtain box rental figures over the years. The postmaster proved to be very cooperative, however, it was found that the post office had only 200 boxes for seasonal rentals and these have all been rented every summer since before 1950. In questioning the postmaster on general delivery records, it was found that the bulk of mail handled through general delivery made it impossible to maintain any records other than total pieces handled. Most of the general delivery mail handled was for the migrant laborers.

The next sources investigated were the utility companies servicing the area to determine the change in utility connections over the years and by season. It was found that the companies could not provide such data because the information was only recorded on a regional basis. The utility companies also offered special rates for the seasonal residents. These rates were for limited use of the utilities during the winter season. The amount of seasonal residents receiving special rates were, likewise,

recorded on a regional basis and therefore not very useful to the researchers.

A final effort was made by contacting the private resort club. The author interviewed the resident manager in September 1969. It was found that the resort had been in existence since the late 1800's and that it has remained exclusively private since that time. The only way an individual could become a member and property owner, was to be born or marry into the club. The sale of cottages is controlled by the organization and often remains a closed market.

Most of the cottages are used by as many as three generations of the family throughout the summer, and often during the same time period. Most of the cottages are not winterized and therefore are not occupied during the winter months.

It was not possible to obtain any further information about the residents, nor was it possible to interview them. The area is well patrolled to insure complete privacy for the residents. The author was permitted to take a drive through the area and found that the value of the homes, in most cases, was well over \$80,000. This valuation was later supported via conversation with the county treasurer and tax assessor.

Although no figures were available to determine the impact this group has on the community, it is assumed to be considerable. Many of the seasonal jobs available to

Lakeshore residents are at the private resort. Jobs such as gardeners, caretakers, and servants are taken by Lakeshore residents for the summer. The spending patterns of this group alone could have a substantial impact on the community.

Tourist and Recreation Impact

Since the early 1800's, Lakeshore has enjoyed the reputation of being a popular resort area in the state. In the early years, the area was served by steam ships and the railroad. As the automobile came into its own, the popularity of the Lakeshore area grew.

In the 1930's and early 1940's, Lakeshore enjoyed the business activity created by both sport and commercial fishing. When the lamprey invaded the lakes, the sport fishing camps died and many commercial fishermen went out of business. The impact this group had was gone. However, a few years later, tourism began to have more influence on Lakeshore's businesses.

There are presently three groups of tourists which have an effect on business activity in Lakeshore. These groups are comprised of the overnight tourist (having accommodations in the area), the transient tourist (tourists just passing through the area) and the recreating boater, who may be either overnight or transient. This section will discuss the information obtained concerning the overnight and transient tourist. The influence of

the recreating boaters will be examined in a following section.

Overnight Tourist

The Lakeshore area has five service establishments which accommodate the overnight tourist. Among these businesses are cottage and cabin facilities, a motel, and a travel trailer court. The three cottage and cabin outlets were established prior to 1955. The motel came into existence in 1962 and the travel trailer court opened in 1967. Table 2 reflects the total number of overnight guests using the facilities for each year shown while Figure 8 illustrates graphically the number of guests recorded by each establishment.

Since 1963, there has been a rise in use of service establishments "A" and "D." It is believed that establishment "B" experienced a similar growth because in 1968 it registered 253 guests (see Table 2). Unfortunately statistical information for this establishment for the years 1959 through 1967 was lost and the owner could not provide an estimate of the number of guests accommodated. Service establishment "A" came under new ownership in 1960 and the records of attendance kept by the previous owners was destroyed thus no figures are available for years prior to 1960.

Establishment "C" illustrates considerable fluctuations in its guest accommodation over the years. It does

TABLE 2. Number of Overnight Guests at Five Establishments in the Lakeshore Area, 1955 Through 1968.

Year	Establishment				
	A	B	C	D	E
1955	a	102	87	0	0
1956	a	127	50	0	0
1957	a	119	58	0	0
1958	a	90	43	0	0
1959	a	b	99	0	0
1960	70	b	89	0	0
1961	81	b	84	0	0
1962	83	b	50	110	0
1963	75	b	70	107	0
1964	79	b	90	149	0
1965	90	b	48	171	0
1966	88	b	58	205	0
1967	127	b	78	211	10,953
1968	121	253	34	189	18,660

^aRecords of previous owner destroyed.

^bInformation recorded for the period was lost.

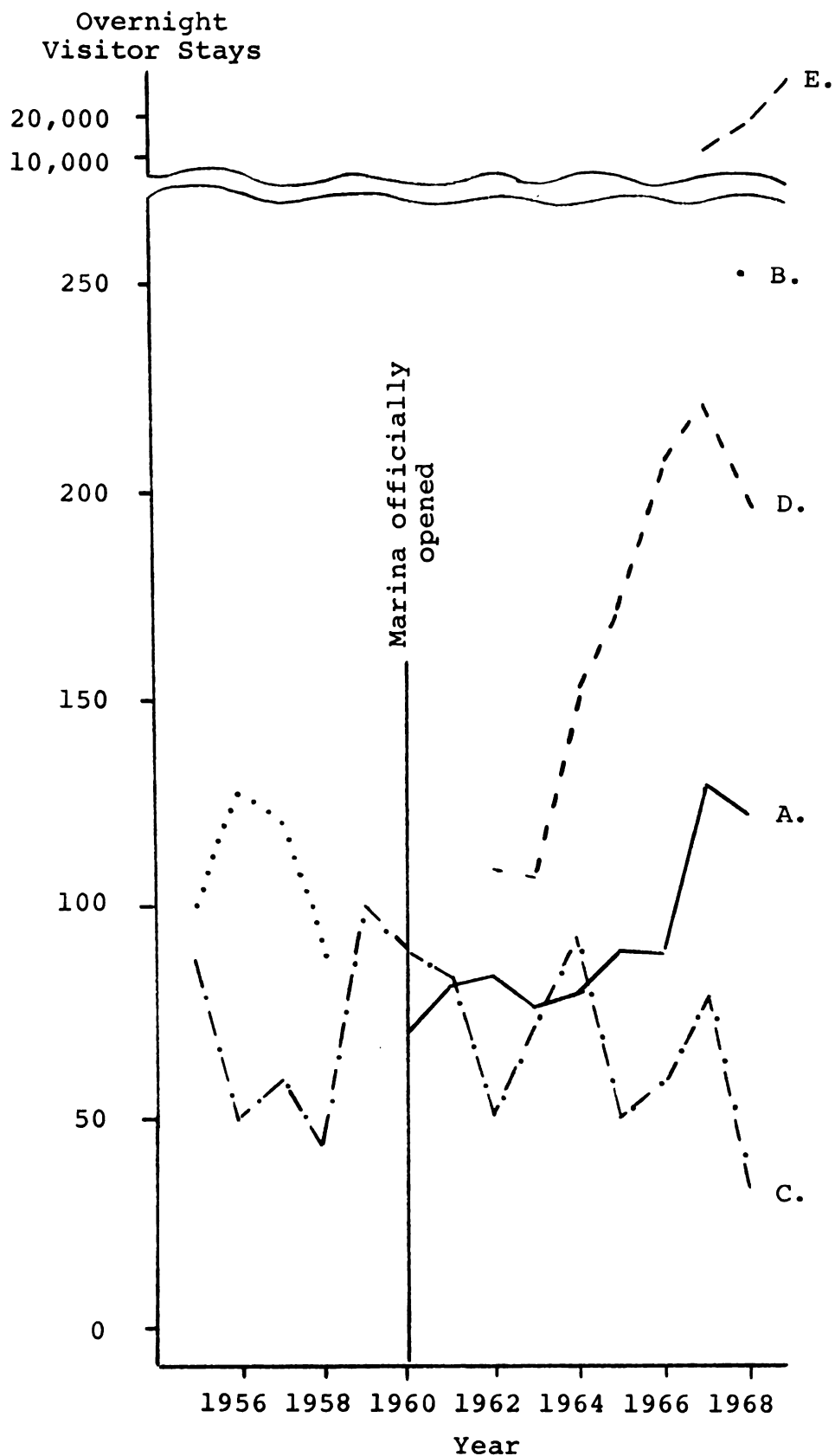


Figure 8. Overnight Visitor Stays for Resort Accommodation Outlets in the Lakeshore Area.

not correspond with the growth enjoyed by outlets "A" and "D." One of the possible reasons for this is that this establishment depended on the sport fishing in the past and did not make much effort to cater to the general tourist or vacationer. Also, this outlet is located several miles out of town and is not on a heavily traveled tourist route.

In 1967, establishment "E" opened and had a tremendous growth rate for the succeeding two years. This establishment is very popular for the trailer tourist. It has had a marked effect on the business activity in the community. It is expected to continue having an increasing influence on the business activity in the community in the future since the outlet's facilities are not completed and will not be for several more years.

The author believes that the services provided by establishment "E" will help to increase its popularity and will also help to increase the reputation of the area as both a summer and winter play area. If this assumption proves to be true, many retail outlets in Lakeshore will enjoy a year-round business operation.

Several reasons for this expected trade increase are: (1) the popularity of skiing in the area coupled with the expansion of the number of skiing facilities in the vicinity, and (2) the rise in popularity of snowmobiling and the plans for snowmobile trails throughout

the area.⁶ The author believes that this particular establishment will take the lead in drawing an increasing number of tourists into the area who will, in a short time, replace the migrant laborers as the major summer consumer group.

Transient Tourist

An attempt was made to determine the numbers of transient tourists (tourists who just drive through the area sightseeing and use accommodations outside the Lakeshore area), visiting the area during the summer months. The Michigan State Highway Department was contacted to obtain traffic counts for the Lakeshore area over the past years. In interviewing members of the Department, the author found that only traffic count estimates were available. These estimates were average daily counts for the entire year. There were no recordings for such data on seasonal basis. Consequently, this information was not useful to the research team in separating the effects of this group. However, the average daily traffic counts have increased from 500 in 1955 to 800 in 1960. It is presumed that the summer daily traffic count is considerably higher than the seasonal average count. Unfortunately, the information does not permit one to estimate the amount

⁶ Establishment "E" recently acquired a snowmobile franchise and also rents snowmobiles for recreation.

of transient tourists passing through the community nor any impact this group may have on business activity.

Effects of Harbor

The publically built small boat harbor was opened to boating traffic in 1960. At that time, there were no slips and the boater had to moor directly to the pier. Within the next few years, the harbor had twenty slips to accommodate the boater.⁷

In 1964, this harbor had become known and the boating traffic began to increase. It was at that time the village decided to hire a seasonal full-time harbormaster to take care of the boating traffic.

When the harbormaster took over the operation of the harbor in 1964, he initiated the first log book system for registering vessels using the facility. In the log, the following information was recorded: the name of the boat, date of entry and departure, owner's name and address, size of craft, number of passengers, length of stay at the harbor, last harbor visited if travelling on the lake and the next intended port.

From the information recorded in the log, the author was able to show the growth of boating activity in the harbor since 1964. Prior to 1964, no official log was maintained and estimates on the number of boaters using

⁷ Interview with village engineer who was responsible for the building of the facilities.

the harbor were varied and not reliable. The author later contacted the Waterways Commission to determine if figures had been recorded for those years. The Commission was unable to provide data for years prior to 1964. Later it was discovered that Professional Engineering Associates (a planning and consultant firm in Birmingham, Michigan) did a study on the harbor in 1967 and produced a graph showing the numbers of people and boats served by the Lakeshore harbor since its construction in 1958.

Figure 9 shows boating activity in the harbor from 1958 to 1968. The author extracted the number of people served by the harbor for the period 1964 to 1968 from the log, while the consultant firm provided data back to 1958.⁸ In Figure 9, there is a difference in the numbers of people using the harbor facilities, as recorded by consultant firm and the author. The author believes that this difference may be attributed to the fact that the consultant firm may have also included the residents of Lakeshore who rented a slip for the entire season. The author did not include these individuals because they did not use all the available services daily.

The Waterways Commission has estimated that a marina takes about five years to grow and mature to a point

⁸For harbor log summary, see Appendix C.

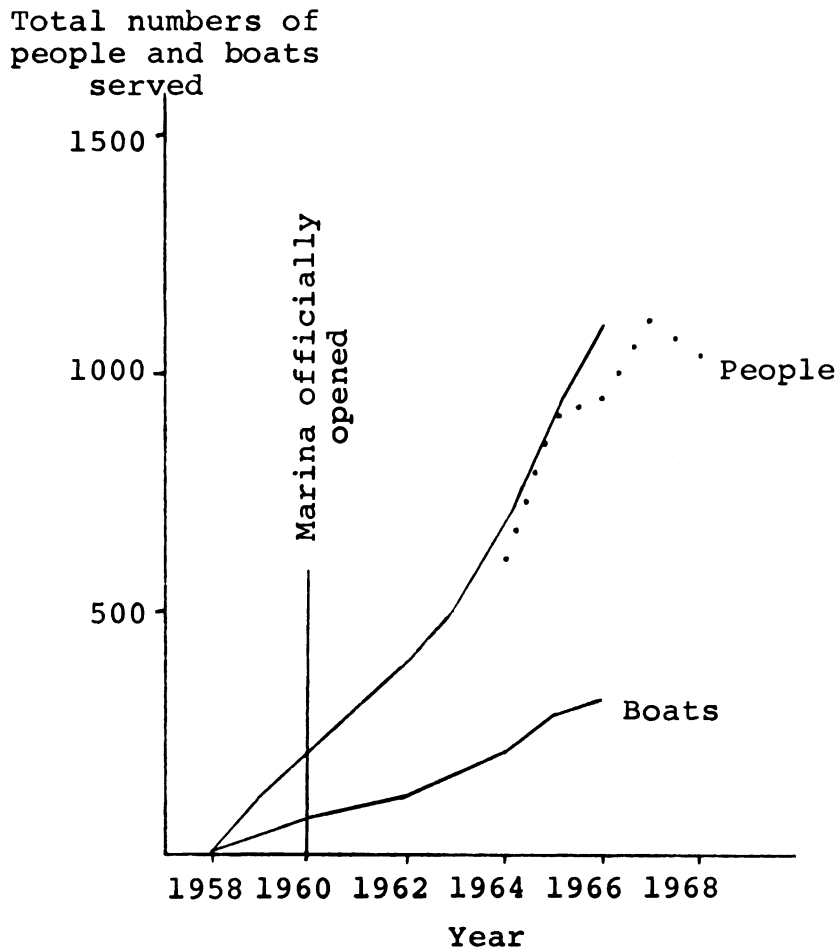


Figure 9. Total Number of People and Boats Served by the Lakeshore Public Marina. [1958 to 1966 trend was estimated by the Professional Engineering Associates, Birmingham, Michigan; 1964 to 1968 data was extracted from actual recordings in log.]

where its facilities are fully used.⁹ In the case of Lakeshore, maturity would be reached in 1965.

In 1964, a second private marina, with individual berths, opened just a quarter mile north of the present public marina. These two facilities cater to the boater who desires to rent berths for the season and use their boats on weekends and vacations. The public marina, however caters to the transient boater or the boater who just may use the facility for a week or two during his vacation.

From Figure 9, it appears that the numbers of boats using the public marina are beginning to taper off for the years 1965 to 1966. Despite the surge in the number of people using the harbor in 1967, according to the author's figure, the figure drops in 1968 which may indicate the beginning of maturity for the harbor. However, this cannot be substantiated for in 1969 the public marina was closed because the village began construction on the expansion of the harbor.

During 1967 and 1968, the harbor master employed an assistant to work at the harbor during his absence. The attendant was paid from the harbormaster's own seasonal earnings. However, with the expansion from the original twenty slips to seventy-eight slips, it is expected that the village will hire at least one harbormaster plus two

⁹ Estimate based on personal interview with Waterways Commission Director and Chief Engineer in March 1969.

harbor attendants to operate the facility during the summer months.¹⁰

Although the hiring of one man, the harbormaster, is a direct impact of the marina, it is the indirect impact on community employment that is most significant. This indirect impact depends on the total number of people using the marina and the total length of time they stay there in their boats. The total number of boating man days is shown in Figure 10 for the years 1964 to 1968. The figure was obtained by multiplying the number of people registered by the total length of stay of that particular craft as recorded in the official log book.¹¹

The indirect impact of the marina will be discussed in greater detail in the following section.

Employment Patterns of the Community

During the period June through September 1969, forty-eight proprietors of business establishments in Lakeshore were interviewed. Of these forty-eight businesses, forty-four were able to provide data to the research team. Four of the proprietors either would not or could not provide data. The data provided by the forty-four

¹⁰This estimation is based on the marina operating from six o'clock in the morning to eleven o'clock in the evenings seven days per week. Such a three-man operation was observed for a neighboring community's public harbor of refuge with less than half the number of slips.

¹¹See the log summary in Appendix C.

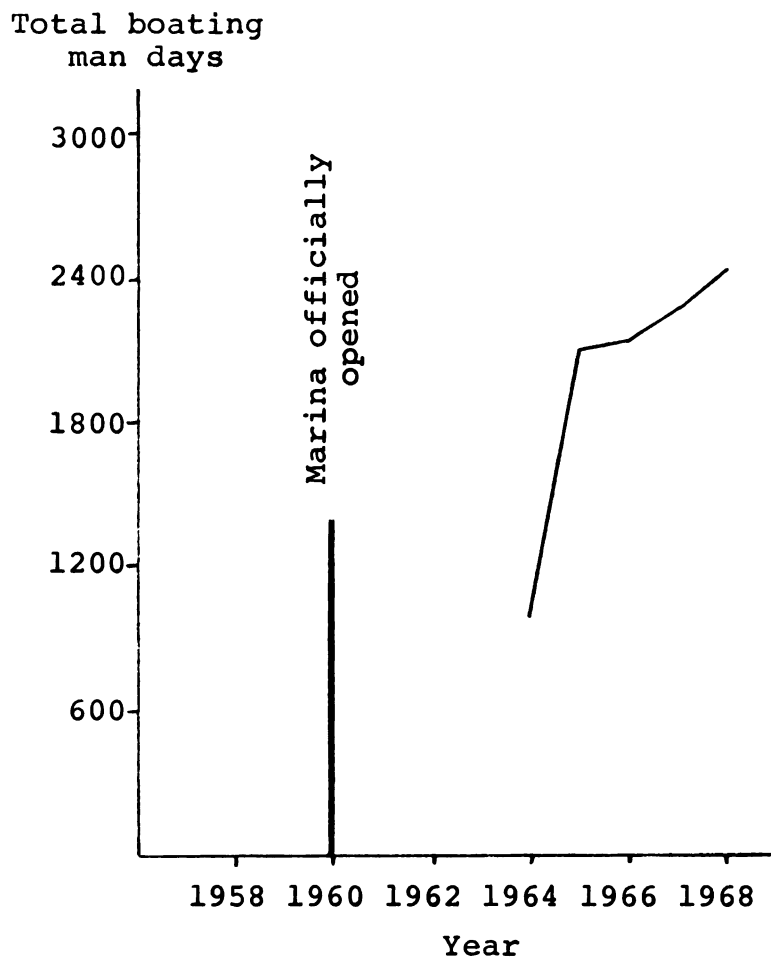


Figure 10. Total Boating Man Days for the Lakeshore Public Marina as Extracted from Harbormaster's Log Entries.

establishments was not complete in all cases. Several of the establishments could only provide data for the seven preceding years, the legal requirement for retaining business records.

These business establishments were divided into relevant and nonrelevant sectors to separate those establishments which provided services to the boater. Of the forty-four establishments who responded, twenty-two of these were found to be in the relevant sector and twenty-two were found to be in the non-relevant sector. Of the four establishments which did not respond, three were found to be in the relevant sector and one in the non-relevant sector.

Each responding business provided total employment hours monthly for every year from 1955 through 1968 or as far back as their records could go.¹² After all information was compiled, the total employment, in man hours, was determined and plotted. Figure 11 illustrates the total yearly employment, in man hours, for the Village of Lakeshore from 1955 to 1968. With the exception of 1959 and 1960, the trend of total employment has been steadily increasing over the years. The two-year downward trend in 1959 and 1960 was reversed in 1961. This may be attributed to a very successful cherry harvest for the year, since 1958, 1959,

¹²Summaries of total employment hours are shown in Appendices E and F for each year according to the SIC codes for relevant and nonrelevant sectors.

Employment in
1,000 man hours

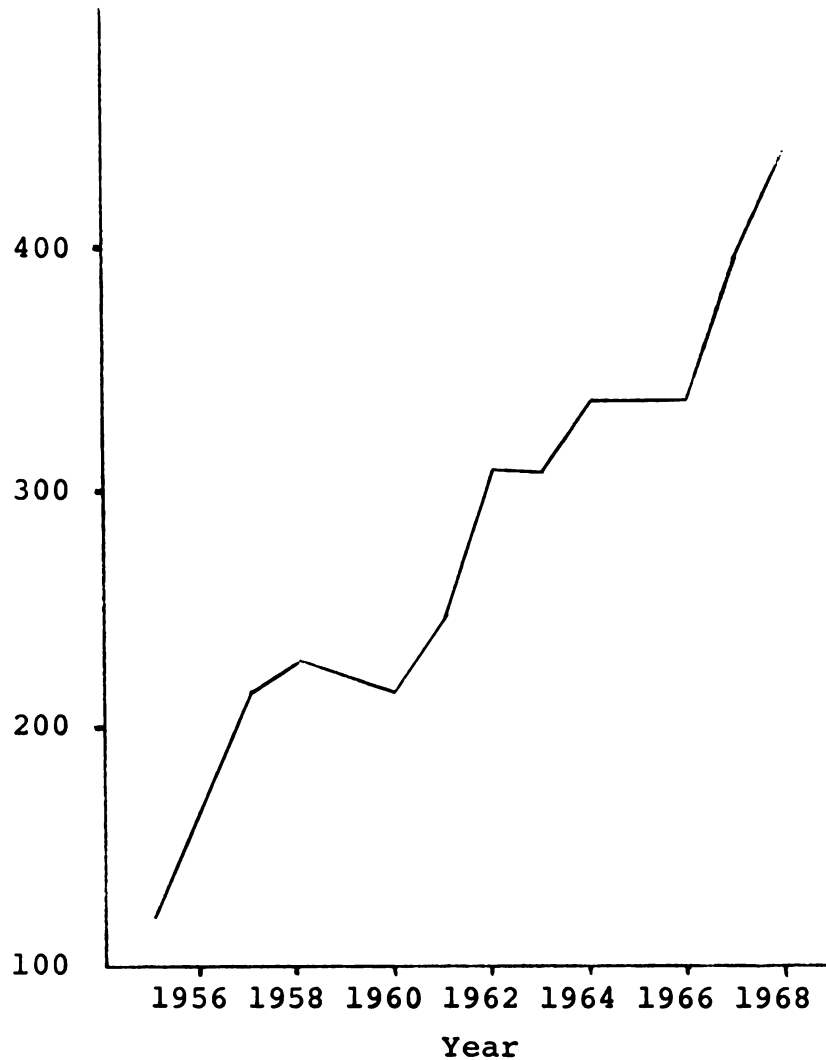


Figure 11. Total Employment for the Village of Lakeshore for the Period 1955 Through 1968.

and 1960 were relatively poor years, as was the year 1963 (see Figure 7). At the same time, summer employment at the fruit processing plant was at its lowest for 1959 and 1960 (see Appendix B). Cherry production for Michigan, after its all time high in 1964, dropped rapidly during the years 1965 to 1967 (see Figure 7).

One possible reason why the employment for 1966 (see Figure 11), did not drop further was the fact that both the hospital and medical clinic had a rise in employee man hours worked for those years (see Appendix E, SIC codes 8060 and 8061). These service establishments play a vital role in the community, not only for the professional services they provide but also for the amount of employment they have created in the community.

The total employment will be separated into relevant and non-relevant employment. A further breakdown will be made to show the summer and winter employment for each sector. Finally, an effort will be made to separate the effects the harbor has had on generating new employment positions in the community.

Non-Relevant Sector

The non-relevant sector is comprised of those business establishments not affected by the harbor. Figure 12 illustrates the employment for the non-relevant sector. It is illustrated to show the relationship with the total employment for the community (see Figure 11).

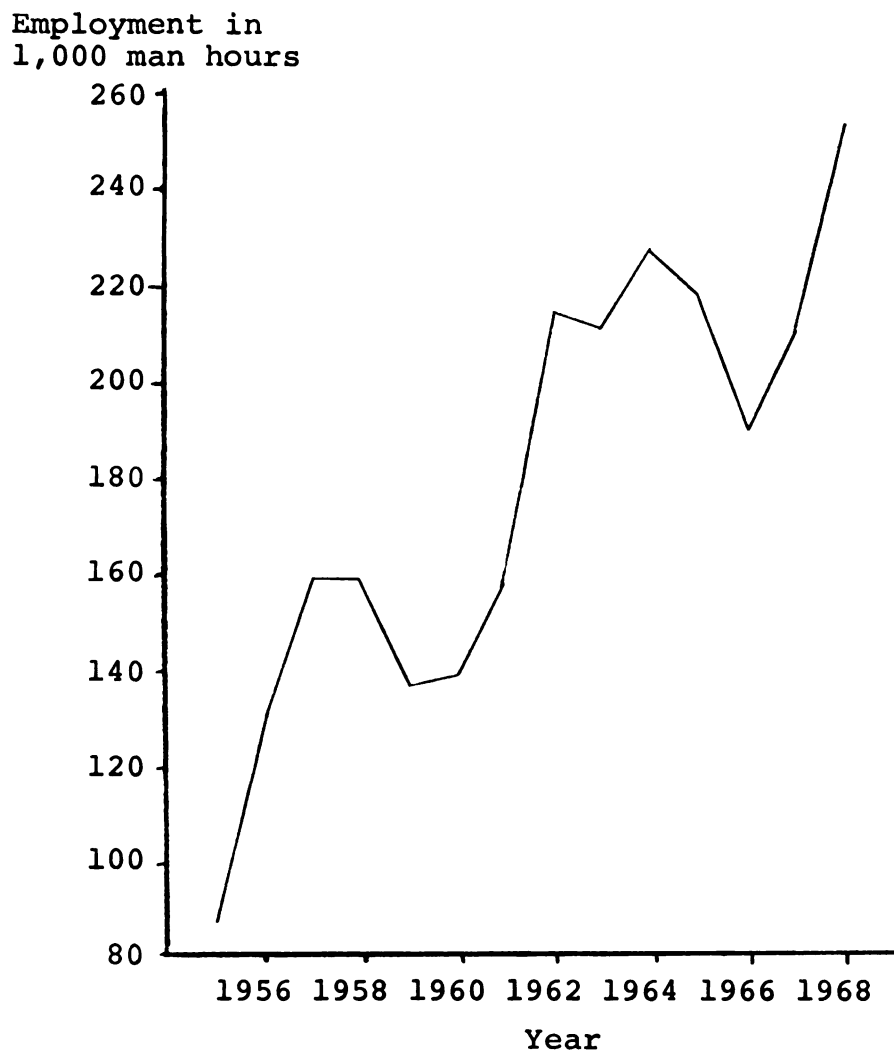


Figure 12. Total Employment in the Non-relevant Sector for the Community of Lakeshore.

This was further broken down to show the winter and summer employment for this sector (see Figure 13). It appears that the employment fluctuation in this sector coincides very closely with the success or failure of the cherry crop produced for the year.

Since boaters do not utilize the services of the non-relevant sector, little more will be said about it. Attention will now be focused upon the impact the harbor has had on the employment in the relevant sector.

Relevant Sector

The relevant sector is comprised of those business establishments whose products or services are generally sought by the boaters in the harbor. Such establishments as grocery and drug stores, restaurants, bars, marine supply outlets, gift shops, etc. are included in this group.¹³

Twenty-two of the twenty-five businesses in this sector provided assistance to the research team. As seen in Figure 14, the total employment for this sector shows a continual growth rate for each year with the exception of the year 1960, a bad year for cherry production.

From this total employment for the year, seasonal employment bases were established. Figure 15 illustrates

¹³See Figure 5 and Appendix E for listing of groups included in this sector.

Employment in
1,000 man hours

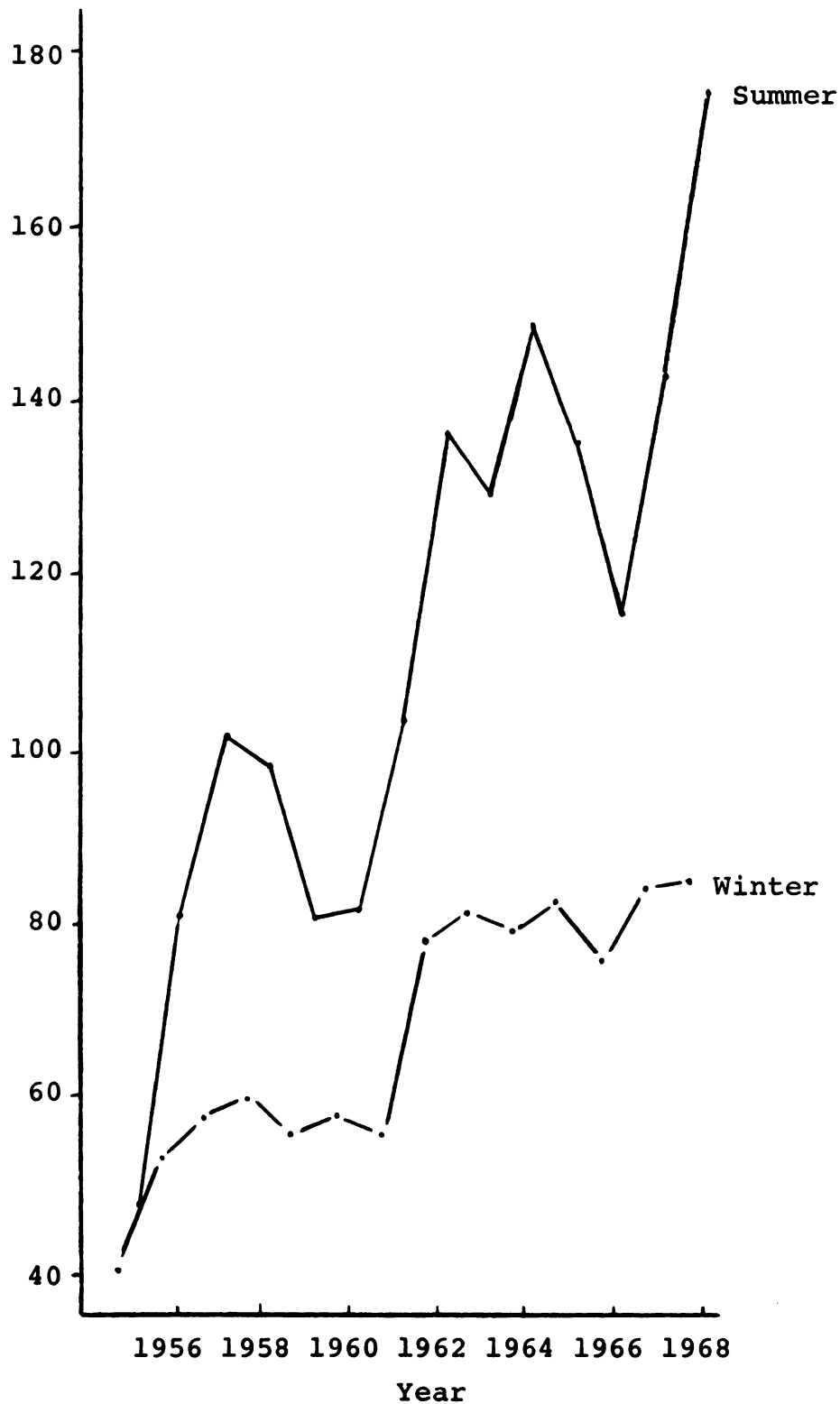


Figure 13. Total Employment in the Non-relevant Sector for Winter and Summer Each Year, for the Community of Lakeshore.

Employment in
1,000 man hours

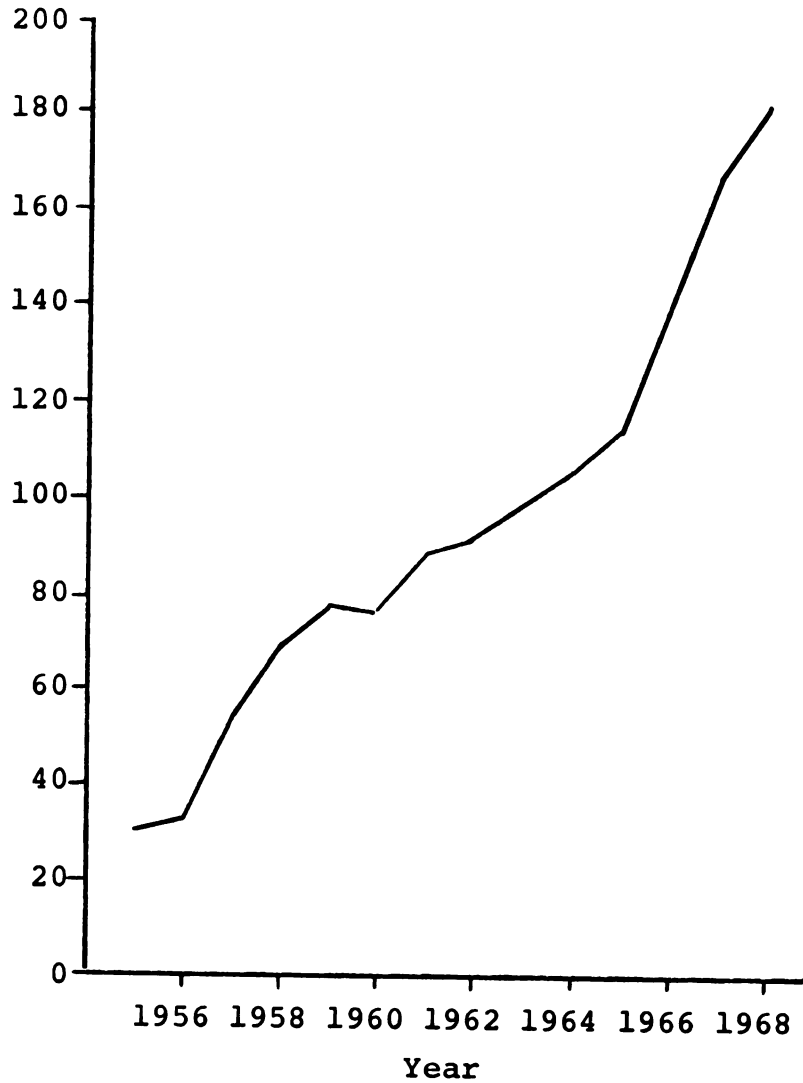


Figure 14. Total Employment in the Relevant Sector for Each Year in the Community of Lakeshore.

Employment in
1,000 man hours

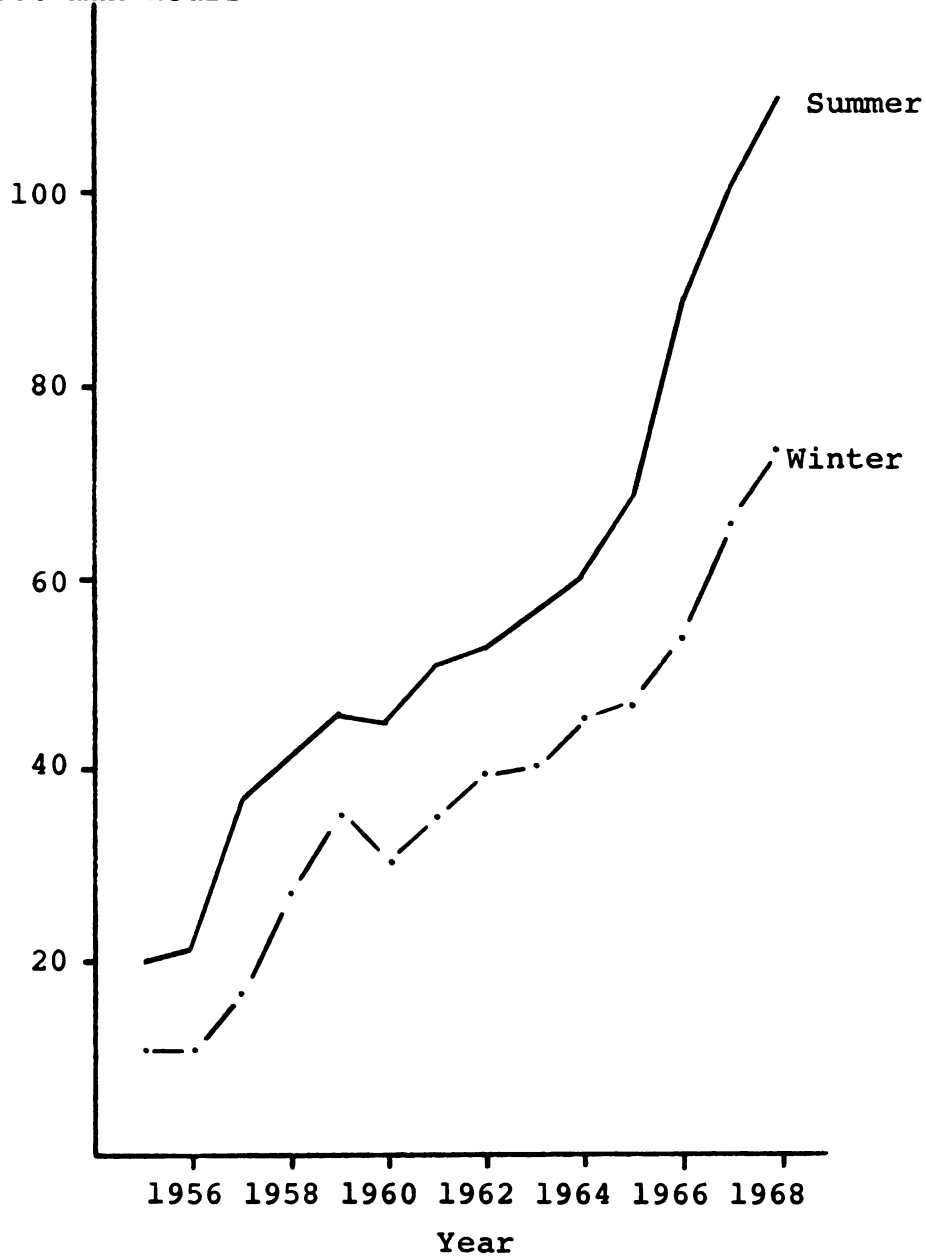


Figure 15. Total Summer and Winter Employment for the Relevant Sector in the Community of Lakeshore.

the bases for both summer and winter seasons. The seasonal fluctuations appear to closely follow one another.

One of the variables which greatly influence the employment in the community is the permanent resident population. Both relevant and non-relevant business establishments are dependent on this consumer group for their business, especially during the winter season. In order to separate the effects of this group on employment in the community, the following procedure was chosen. The total winter employment (for the relevant sector for each year) was subtracted from the summer employment for the same year. A best fit curve was then applied to illustrate the trend in increasing growth and deflection caused by the variables. The residual values would then represent that portion of employment generated by summer residents, migrant laborers, tourists, and boaters.

In justifying this procedure, it is assumed that the spending patterns of the permanent resident population do not significantly change over the seasons of the year and therefore the effects of this group on the overall employment base would likewise remain unchanged. The results of this procedure is illustrated in Figure 16.

The author realizes that this procedure may be subject to legitimate criticism. The spending patterns of the resident population could very well increase during the summer months especially for those residents involved in

Employment relevant
sector in 1,000 man
hours

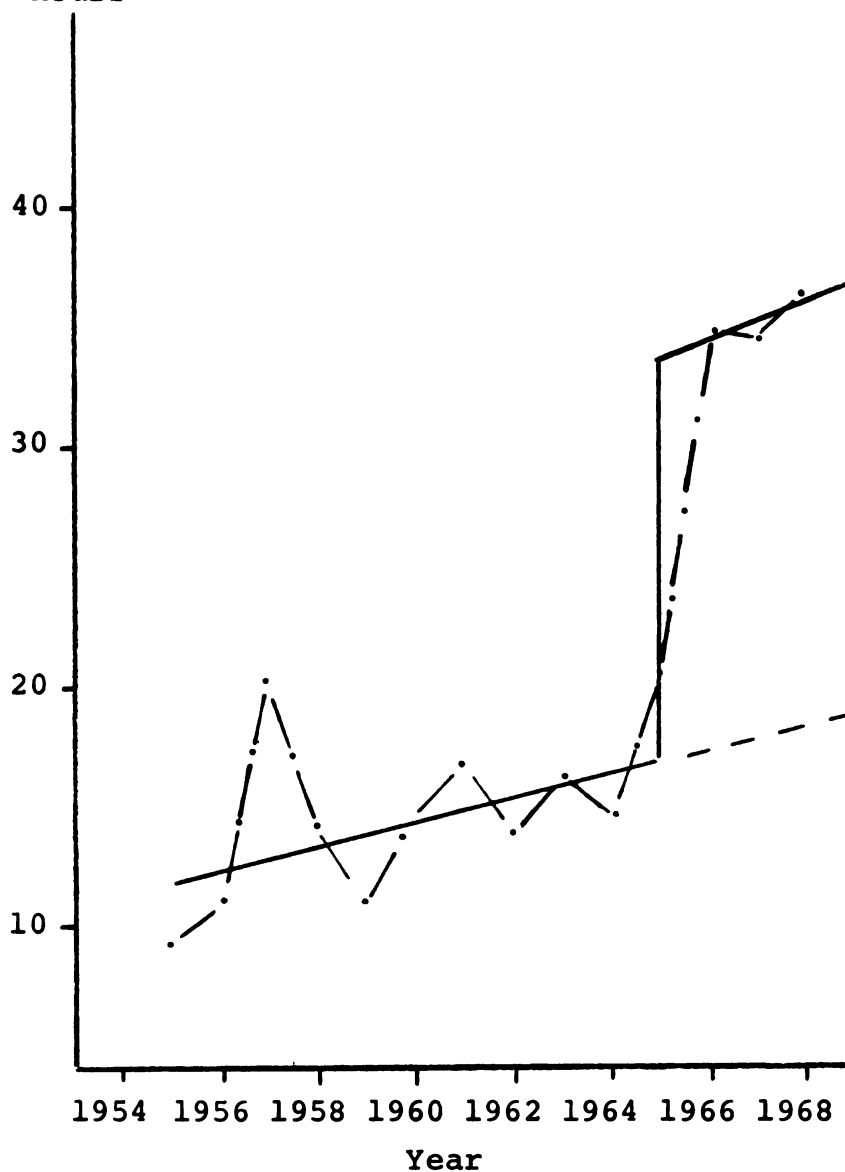


Figure 16. Relevant Sector Employment, Summer Minus Winter for Each Year, for the Community of Lakeshore.

agricultural businesses, the winter enables them to attend meetings and conferences concerning new innovations in harvesting techniques. It also enables them to shop for new equipment which they would not be able to do during the growing season. Another important point concerning the expenditures of this group is that their investment or capital outlay is very high for major equipment. This spending does not involve a large turnover of consumer goods and therefore does not affect the employment patterns as would the spending of tourists. Also there are no business outlets in the community which supply large farm machinery and supplies to the fruit growers.

Finally, it was determined that this method was the only procedure available to use in separating the effects of the resident population on yearly employment.

Thus it was determined that the residual employment hours shown in Figure 16, were the result of outside influences experienced only during the summer season. These influences were caused by the summer resident population, migrant laborers, tourists, and boaters.

With the exception of 1957, there was a gradual rise in summer relevant employment due to the above variables. The year 1957 was characterized by a very successful cherry harvest and the opening of the county hospital in March 1957. During its first year of operation, the hospital accounted for an additional 8,000 man hours (summer minus winter statistics) stimulated by the above variables.

Thus, if the hospital had not opened, the 1957 figure would be approximately 14,000 man hours and thus be equal to the 1958 figure. The employment generated by the hospital for the remaining years (1958 to 1968) has fluctuated a maximum of 13 per cent, the difference between summer and winter employment. Generally the difference between summer and winter employment has been within 2,000 man hours with summer showing higher figures for ten out of twelve years. The years 1959 and 1964 were exceptional years in which the employment figures were higher in winter than in summer.¹⁴

The year 1965 was the beginning of a rapid rise in business activity. Sufficient data is not available to predict if this trend will continue into the 1970's. However, inspection of the 1967 and 1968 values (see Figure 16), may indicate that the rate of increase in seasonal employment activity is leveling off. This may be due to the fact that the harbor had reached maturity. This hypothesis is supported by the total boating man days for the harbor as illustrated in Figure 10. The figure shows that from 1964 to 1965 there was a rapid increase in boating man days. From 1965 to 1968 the increase in boating man days was not as steep as the rise from 1964 to 1965.

However this surge may also have been generated by the rise in tourism. The increase in tourist spending in

¹⁴Appendix E, SIC 8061.

Michigan (Figure 17) started in 1961 according to estimates made by the Division of Tourism, State of Michigan. However, the effects of tourist spending for the years 1961 to 1964 was not accompanied by a rapid rise in seasonal employment in Lakeshore, for the same time period (Figure 16). Also the gross sales by retail outlets in Lakeshore (Figure 6) did not show a rapid rise in sales for the years 1961 to 1964. The rise here occurred from 1965 to 1968. Thus it may be assumed that Lakeshore did not enjoy as much of an increase in tourist spending as did the rest of the state and therefore it did not generate an increase in employment activity.

The above assumption may also be supported by data recorded in Figure 8. In particular, service outlet "A" which shows a slight rise in overnight accommodations rented for the years 1960 to 1966. The major rise occurred in 1967, a leveling off year for tourist spending. This rise is also noted for outlets "D" and "C." The reason outlet "D" was not cited as an example is the fact that geographically it is several miles south of the community while establishment "A" is in the community.

Unfortunately, additional suitable techniques distinguishing between summer and winter relevant and non-relevant sectors were not available to continue analyzing the statistics on community employment. The technique used by the author is removing the effects of the permanent

Tourism spending in
State of Michigan
in millions of dollars

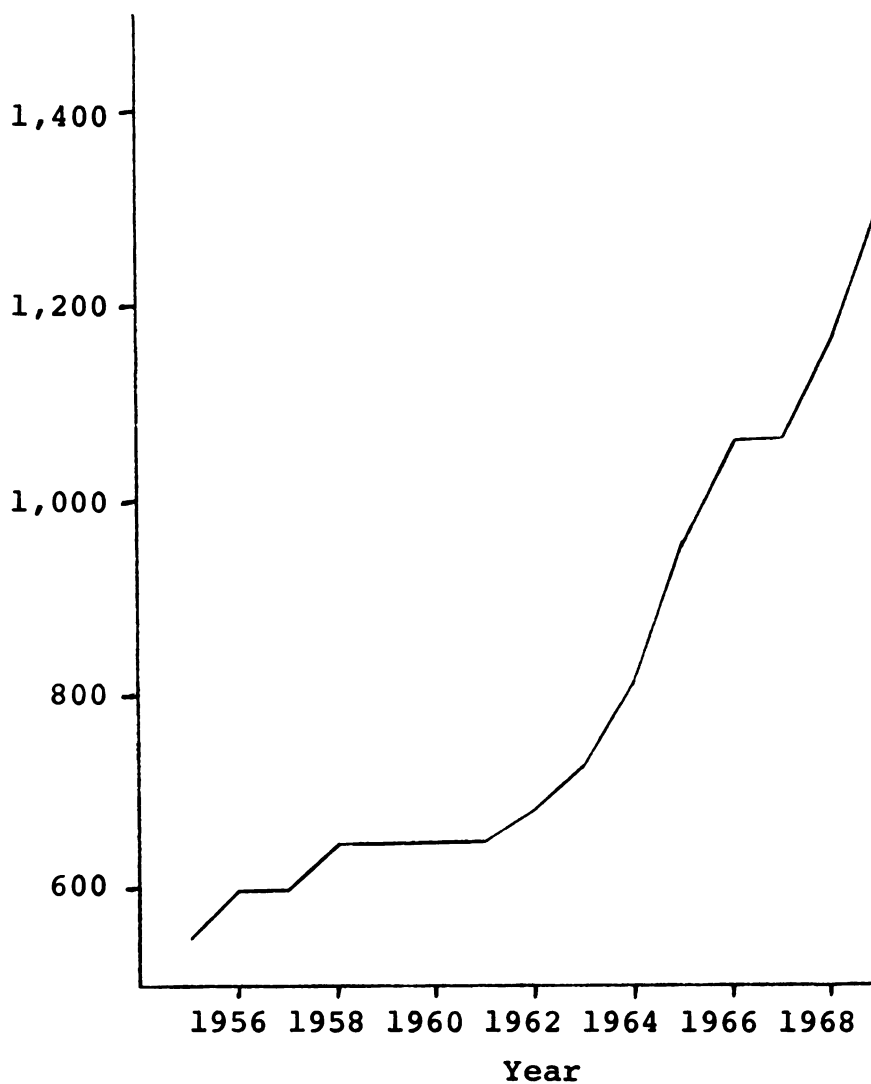


Figure 17. Amount of Dollars Spent on Tourism in State of Michigan. [Source: unpublished data from Michigan Department of Natural Resources, Division of Tourism.]

population has its limitations. However, because of the lack of additional data, it was the most effective method available to utilize existing data. Additional comments concerning the technique will be made in the following chapter.

CHAPTER V

RESULTS AND CONCLUSIONS

Summary

The multiple time series design used in this study met with only moderate success. One of the reasons for this limited success was the lack of adequate data recorded in public and private archives. In particular, there was no reliable data for the Lakeshore area on the migrant labor population, cherry crop production, or tourist counts. In fact, no statistical information was available on these variables for the state as a whole.

The most reliable data was that concerning the employment in man hours, by each outlet, which was extracted from the records by the research team. Using this data, the author was able to establish the total employment for the community back to the year 1955. This was accomplished by using the following procedures.

1. By dividing the business establishments into relevant (Figure 14) and non-relevant (Figure 12) sectors, the author was able to segregate those establishments serving the boaters using the Lakeshore marina facilities.

2. A further breakdown of the relevant sector employment into winter and summer seasons (Figure 15) intended to show the effects of the resident population on employment activity in the community.

3. The next procedure required that the employment stimulated by the resident population be separated from the total summer employment in the community. This was accomplished by subtracting the winter employment figures from the summer employment figures (Figure 15). The residual values could then be attributed to employment stimulated by the migrant labor force, tourists, and boaters. The results of this procedure are recorded in Figure 16. In this figure, there is a noticeable increase in employment beginning in 1965 and continuing through 1966. This trend began to taper off in 1967 and 1968.

The Lakeshore public marina, which opened in 1960, was expected to reach maturity in 1965, the same year the employment began to rise (Figure 16). However, the author believes that the marina did not reach maturity, a point where the existing facilities are used to their fullest capacity, until 1967, the reason being that in 1960 there were no slips or berths available to the boater. The only available mooring at that time was directly to the pier. Thus the facility was only a refuge harbor for small craft. The slips or berths were not completed until 1962.¹

¹This was confirmed through interview with the village engineer, who installed both the pier and the berths.

Therefore, with all the facilities completed in 1962, the public marina would mature and reach its maximum use in 1967. This was the same year the employment began to stabilize (Figure 16).

It was mentioned previously, with regard to the sharp increase in employment in 1957 (Figure 16), that the county hospital opened in mid-winter 1957. For the first year of operation, the hospital's employment during the summer was approximately 8,000 hours greater than that of winter for the same year. Thus if the hospital had not opened in 1957, the employment peak (Figure 16) would then only be at 12,000 man hours. This would also produce a smoothing effect in the graph.

Interpretation of Results

The reasons for the sharp increase in employment during the period 1965-66 were investigated further. An analysis of state user taxes collected for overnight accommodations (motels, hotels, and resort cottages) in Scenic County was undertaken to determine if there was a significant rise in the use of these facilities.² The investigation proved that there was no significant rise in user

²The user tax figures were extracted from unpublished records of the Michigan Department of Treasury. The tax rates were 3 per cent for 1961 and 4 per cent for 1962 through 1968. Total cash receipts for the summer accommodations can be determined by dividing the appropriate tax rate into user tax receipts (see Figure 18).

tax receipts during 1964 through 1966 and likewise in total accommodation cash receipts (see Figure 18).

A further check on the volumes of tourist activity in the region was made by examining state parks attendance figures for the years 1955 through 1968. Unfortunately, the three nearest state parks are approximately thirty to forty miles from Lakeshore and in very popular resort areas which do not closely resemble the Lakeshore area. They are highly publicized and therefore might be expected to reflect increases in tourism to an even greater degree than the Lakeshore area. However, it was found that there was no substantial increase in total attendance at the three parks during the period 1964 through 1966.

The author then turned attention to the internal changes in the community as a possible cause for this sharp increase in employment. It was found that two new businesses opened during 1964 and 1965 which could possibly account for the employment increase. A calendar of significant events along with user tax data was plotted with relevant seasonal employment (Figure 18) to show possible causes of the sharp employment increase in 1964 and 1965.

The two new businesses which opened during this time period was a private marina (1964) and a retail bakery (1965). If these establishments did cause the sharp increase in employment, then by subtracting their employment from the relevant sector we would reduce the intercept of the stimulated employment for the years 1966 through 1968.

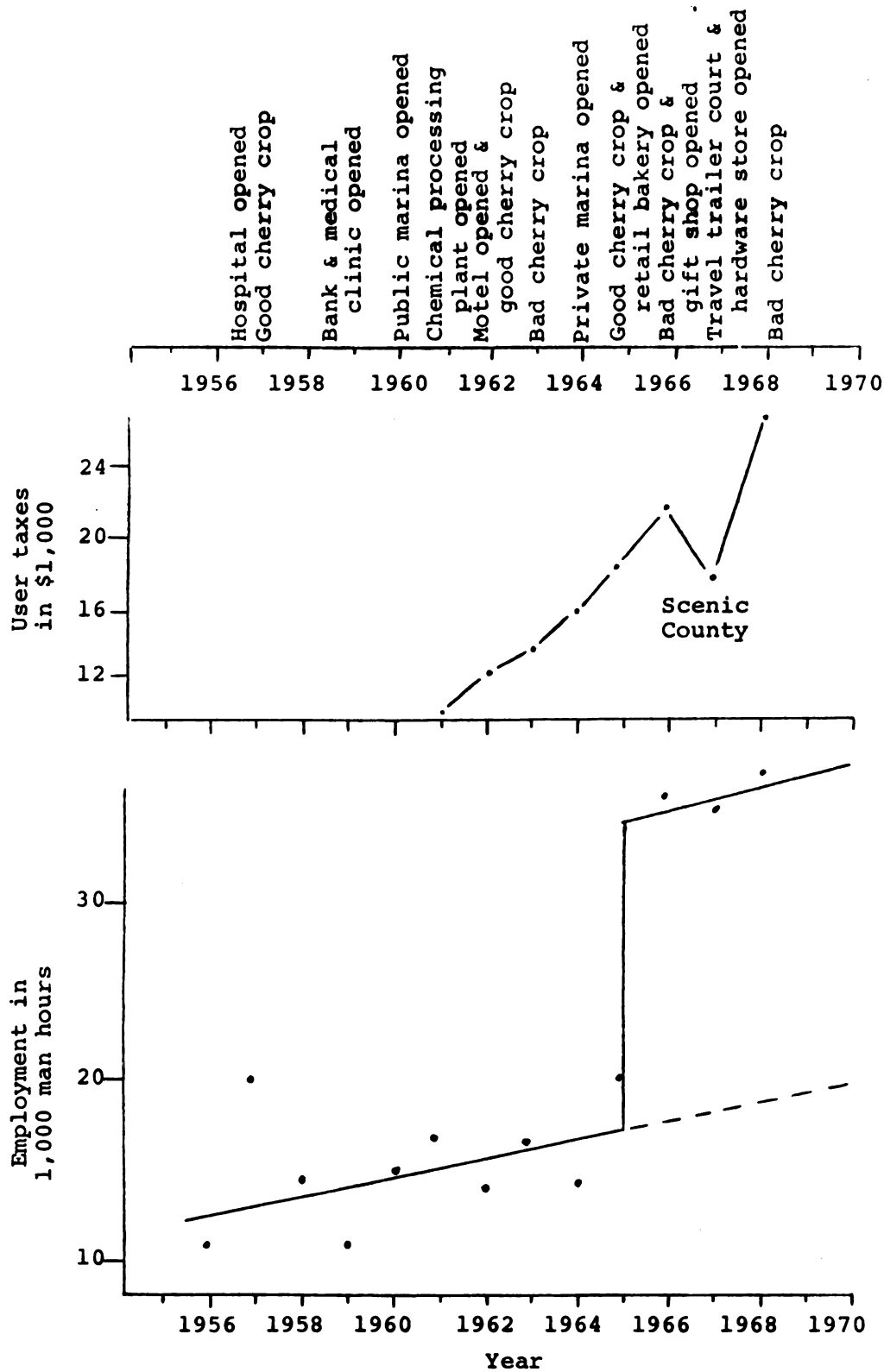


Figure 18. A Comparison of Significant Community Events and County Accommodation Use Tax Receipts with Relevant Season Employment for the Community of Lakeshore.

The result of this procedure is shown in Figure 19. It indicates that no major reduction in the total employment was produced by subtraction of the employment for these two establishments. Therefore, it has been demonstrated that these two establishments were not the cause of the sharp increase in employment.

The influence of the community's fruit processing plant on employment was considered next. In 1966, the State of Michigan experienced a poor cherry crop harvest. This had a negative effect on the employment in the fruit processing plant (see Figure 7 and Appendix B). Thus the sharp rise in employment (Figure 18) could not be attributed to a successful cherry crop harvest.

Another possibility investigated further was the employment at the county hospital. It was noted previously that the hospital had caused the sharp rise in employment in 1957 and could possibly have a similar effect in 1965 and 1966. The employment at the hospital was likewise subtracted from each year since it opened in 1957.

Figure 20 illustrates the results of this procedure and shows that the points plotted along the slope of the best fit curve from 1955 to 1965 are concentrated closer to the slope line than previously. However, even with the subtraction of the employment at all four of these establishments, the sharp increase in employment beginning in 1965 still remains and the slope from 1965 to 1968 indicates a continuing increase in employment.

Employment in
1,000 man hours

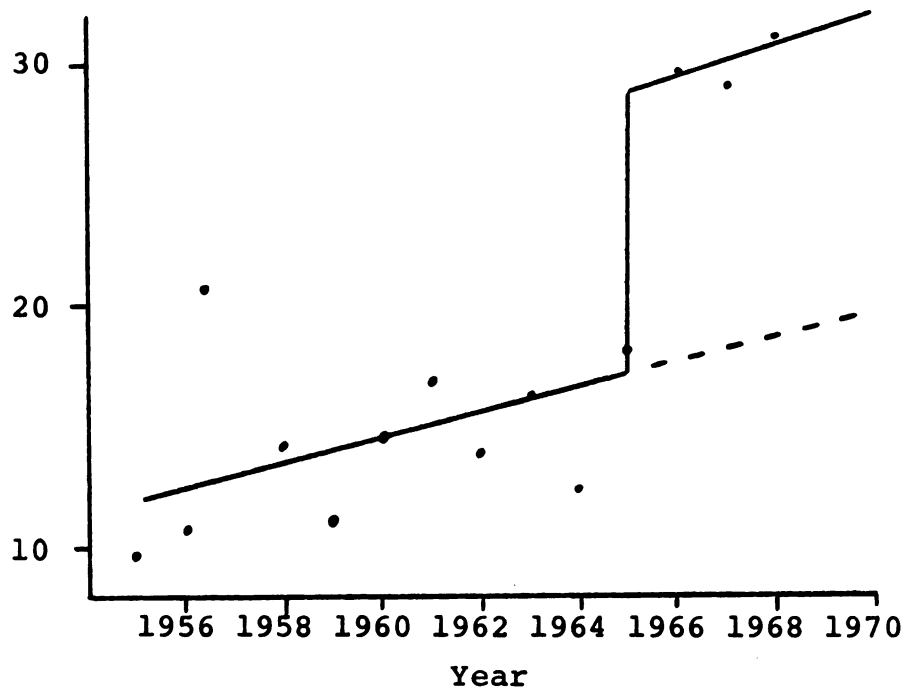


Figure 19. Relevant Seasonal Employment for the Community of Lakeshore Without the Effects of the Private Marina and Retail Bakery.

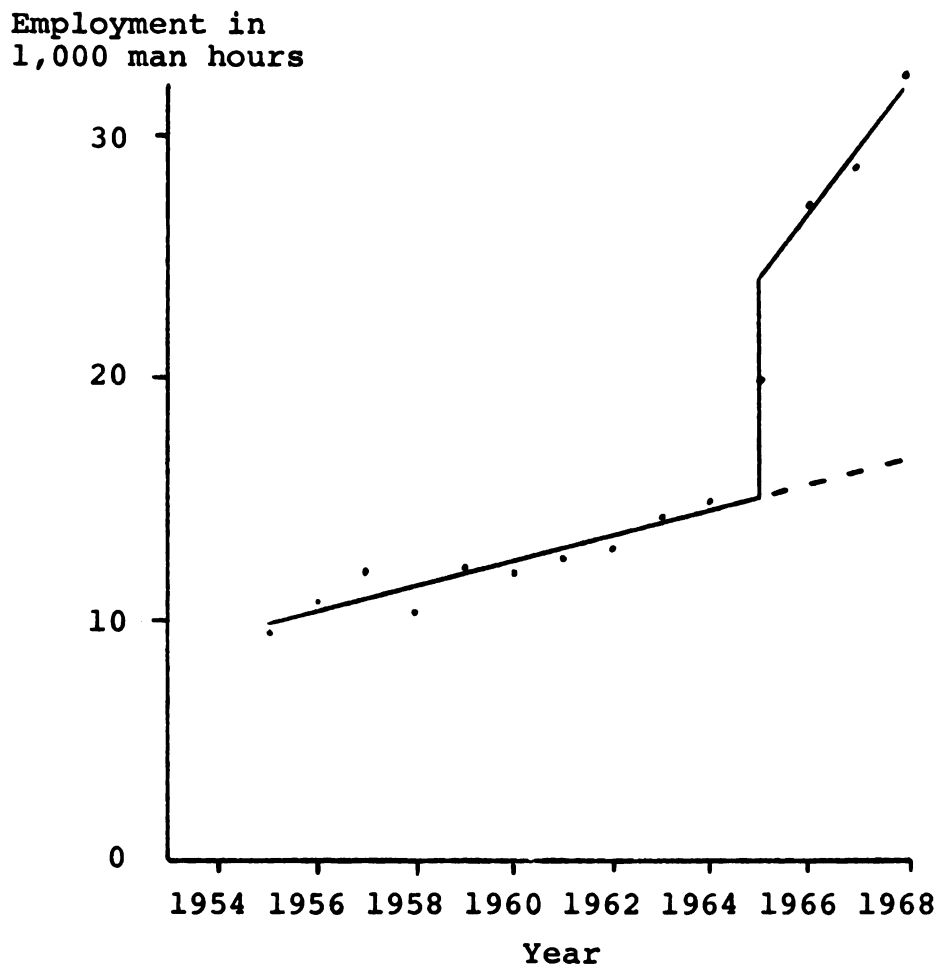


Figure 20. Relevant Seasonal Employment for the Community of Lakeshore Without the Effects of the Employment of County Hospital.

It therefore appears logical to believe that this increase in employment was stimulated by the tourists and the boaters using the Lakeshore public marina. In reviewing the data on resort accommodation and overnight visitor days (Figure 8), it was noted that there was no sharp increase in the use of overnight accommodations at establishment "A" until 1967. Service establishment "D" did have a significant increase in guests in 1964. However, as mentioned in a previous section, this establishment is several miles on the outskirts of the village limits and is closer to another community which provides similar services.

In Figure 18, it is also shown that a travel trailer court opened near the community in 1967 and has had a significant influence on the business activity in the community. However, this influence could not have been a cause for the 1965 employment rise; although it could contribute to increased employment after 1967 as shown in Figure 18.

Thus the author believes that the employment rise was stimulated for the most part by the public marina, since all the evidence appears to support this assumption.

Conclusions

From the data presented, it is concluded that the most probable number of equivalent full-time seasonal employment positions which could be attributed to the construction and operation of the public marina can be

attributed to the construction and operation of the public marina can be determined by subtracting the man hours along the base slope as it is projected from 1965 to 1968 (Figure 20) from the actual man hours recorded in the figure. Then by dividing these figures by 1,040 hours (twenty-six weeks times forty hours per week), the equivalent full-time employment positions created by the public marina can be calculated. The resultant estimated full-time employment positions are shown in Table 3. These equivalent full-time employment positions are the number of positions which could have been generated by the public marina, particularly for 1965 and 1966.

An additional explanation is needed for those positions recorded for 1967 and 1968 (Table 3). In 1967, the travel trailer court opened just outside the Village of Lakeshore. During the first year of operation, the trailer court recorded approximately 11,000 camper days (Figure 8). In 1968, this figure rose to approximately 18,700 camper days. It is reasonable to assume that these camper days would have had a considerable impact on the businesses in the community. Unfortunately, it is not possible to determine the total effect of these campers on employment. The author assumes that these campers would have the effect of stimulating additional employment in the community especially during the months of June, July, and August, Therefore, some of the equivalent

full-time seasonal employment positions (Table 3, Column 4) for 1967 and 1968 should be attributed to this group.

The evidence presented in the preceding paragraph would appear to support the assumption that the marina was the main cause for the sharp rise in employment in 1965 and 1966. In investigating all other possibilities, no evidence was discovered which would suggest that this employment increase should be attributed to something other than the Lakeshore public marina. The author, therefore, believes that the Lakeshore public marina was directly responsible for some of the increase in employment and that it indirectly stimulated additional employment in other segments of the community.

Recommendations for Future Investigations

Throughout this study a number of problems had to be overcome in order to obtain the necessary data. Several of these problems concerned public relations with the business establishments in the community.

One of the biggest difficulties encountered was trying to get data from business establishments. The problem was more a matter of time and timing than a lack of cooperation. Most of the data was collected during the summer months, the busiest time of the year for these establishments. In the future, it is recommended that business data from such establishments be obtained during

TABLE 3. Probable Number of Equivalent Full-Time Seasonal Employment Positions Attributable to the Lakeshore Marina.

Year	Number of Hours per Person per Work Season	Actual Recorded Attributable Man Hours	Probable Number of Attributable Full-Time Positions ^b
1965	1040	5,000	5
1966	1040	11,500	11 ^a
1967	1040	12,800	12 ^a
1968	1040	15,800	15 ^a

^aThree of these full-time positions are attributable to the establishment of two new businesses in the community during this time period (hardware store and gift shop).

^bFigures include the full-time harbormaster hired during the summer season.

the off season when tourist activity is at a minimum. By doing this researchers could establish a better relationship with the proprietors and would also receive maximum assistance.

Secondly, contact with all business establishments should be made well in advance of the actual data gathering phase. In this public relations effort, emphasis should be placed on assuring the business owners that the information received would be held in the strictest confidence. The identities of those who would have access to this information should be stated. The initial contact should be informative and not include any insinuation that they have to cooperate.

Several problems were encountered which proved to be major stumbling blocks in the multiple time series design. The primary problem involved the recording of data in both the public and private archives. The researchers found it difficult to control such variables as changes in tourist and migrant labor populations because no agency had reliable recorded information on these variables. This was especially a problem with statistics at the local level where information was most needed but there was equivalent difficulty at the county level. In order for this type of design to be truly effective, there must be access to reliable information.

Although the author believes this study to be successful, it is recommended that future studies be of a

more general nature. A value added study could establish relationships between boater variables and expenditures, spending patterns and the value added impact from which a predictive model could be developed allowing estimates of probable impacts in advance of location decisions.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Campbell, Donald T. Experimental and Quasi-Experimental Design for Research. Chicago: Rand McNally and Co., 1963.
- Carlson, Reynold E.; Deppe, Theodore R.; and Mac Lean, Janet R. Recreation in American Life. Belmont: Wadsworth Publishing Co., Inc., 1967.
- Chilton Research Services. The Economic Impact of Recreation-Tourism in the Connecticut River Basin. Philadelphia: Chilton Research Services, 1968.
- Clawson, Marion, and Knetsch, Jack L. Economics of Outdoor Recreation. Baltimore: The Johns Hopkins Press, 1966.
- Funk, Herbert J. "Effects of a New Manufacturing Plant on Business Firms in an Eastern Iowa Community." Unpublished Ph.D. dissertation, Iowa State University, 1964.
- Kalter, Robert L. "A Model to Estimate the Economic Effects of Water-based Recreation Projects on Local Political Subdivisions." Unpublished Ph.D. dissertation, University of Wisconsin, 1966.
- Littlefield, James E., and Andrews, Richard D. The Economic Impact of Recreation. Wisconsin Development Series. Madison: State of Wisconsin, Department of Resource Development, 1965.
- Michigan Department of Commerce. State Resource Planning Division. Preliminary Populations for Small Areas in Michigan. Working Paper 9. Lansing: Michigan Department of Commerce, 1966.
- Michigan Department of Highways. Traffic Division. "Traffic Record Programs, Average Traffic Counts." 1950-1968.

Michigan Department of Treasury. Research and Statistics Section. "County User Tax." 1960-1968.

Michigan State University. Bureau of Business and Economic Research. Michigan Statistical Abstract, 1950-1968.

Michigan Waterways Commission. Discussion with Mr. Keith Wilson, Director and Mr. Raymond Lawrence, Chief Engineer. March 14, 1969.

Morrison, Alexander H. "The Impact of Industry on a Rural Area in Northern Virginia: A Case Study of Development in Warren and Surrounding Counties, 1930-1954." Unpublished Ph.D. dissertation, University of Virginia, 1968.

Operation Cooperation--Report of the Steering Committee on Cooperate Programs Between the Department of Conservation and Michigan State University. Charles D. Harris and Howard A. Tanner, co-chairman. Lansing-East Lansing: Michigan Department of Conservation and Michigan State University, 1968.

Outdoor Recreation Resources Review Commission. Economic Studies of Outdoor Recreation. Study Report 24. Washington, D.C.: Government Printing Office, 1962.

_____. Outdoor Recreation for America. Washington, D.C.: Government Printing Office, 1962.

Phillips, Paul H. The Economic Impact of the Louisiana Deer Hunter on the Community Surrounding the Chicago Mills Game Management Area. Baton Rouge: Louisiana Wildlife and Fisheries Commission, 1965.

Rajender, G. R.; Harmaton, F. K.; and Blood, D. M. A Study of the Resources, People and Economy of Teton County. Laramie: University of Wyoming Press, 1967.

Ricks, Donald J. Economic Relationships in the Red Tart Cherry Marketing, 1955-1967. Agricultural Economics Report 24. East Lansing: Michigan State University, Department of Agricultural Economics, 1968.

U.S. Department of Commerce. Bureau of Census. Census of Population. Washington, D.C.: Government Printing Office, 1900-1960.

Wackerman, A. E.; Hagerstein, W. D.; and Michell, A. S. Harvesting Timber Crops. New York: McGraw-Hill Inc., 1966.

APPENDICES

APPENDIX A

PROFILE SCOPE OF PUBLIC WORKS PROJECT

APPENDIX A

PROFILE SCOPE OF PUBLIC WORKS PROJECT

Prepared by _____/_____
Date

Project Applicant: _____
Name of Applicant (City-Non-Profit Group-
County-State)

Project Purpose: _____
Description

Project Financing: _____
Grant Loan Supplemental Local Share

Pre-Application
Conference: _____
Date Time Location (Complete Address)

I. Proposed Facility

- A. What kind of facility is being proposed? _____
- B. If water and/or sewer facility, show percent
project cost allocable to: Industrial/commercial
use _____% Residential use _____% Other (describe)

- C. Would it be eligible for consideration or funding
under other existing Federal or State grant and/
or loan programs? yes _____ no _____
- D. If yes, describe the eligible program(s) _____

II. Cost Estimates

- A. Are line item estimates known? i.e.,: land,
construction, machinery & equipment, etc.:
yes _____ no _____

- B. Are estimates fairly firm? yes _____ no _____
- C. Who developed estimates? planning official _____;
architect/engineer _____; other (describe) _____
- D. Is person(s) identified in 2C: employee of applicant _____;
under contract to applicant _____;
other (describe) _____
- E. What is the source of applicant's matching share
of the project cost? _____
- F. Is there a request for a supplementary grant to
another agency? yes _____ no _____
If yes
1. Has the primary agency made a commitment?
yes _____ no _____
 2. Does the project conform to purposes of EDA
Act and existing EDA policy? yes _____ no _____

III. Direct Impact

- A. What is the expected direct impact the project
will have in creating new jobs?
1. Applicant's estimate of jobs _____
 2. Field Coordinator's estimate after discount-
ing _____
 3. Are estimates based on bird-in-hand? check
one: Totally _____; Partially _____; No
bird-in-hand (speculation) _____
- B. Does the project further the objectives of the
Economic Opportunity Act of 1964? yes _____
no _____. If yes,
1. Explain how _____
 2. Is there a CAP? yes _____ no _____. If yes
 3. Name of CAP and its director _____

IV. Triggering Effect

- (Aside from the direct impact of the project itself)
- A. Is there any expectation the proposed facilities
will generate additional public investments?
yes _____ no _____. If yes, provide best esti-
mate:
1. over what time period? _____
 2. in what amounts? _____
 3. expected sources of these future investment
funds _____
- B. Is there any expectation the proposed facility
will generate additional private investments?
yes _____ no _____. If yes, provide best estimates
of:
1. the kinds of investments _____
 2. the time period in which they may be made _____
 3. the expected job impact in the time period _____

- C. Describe any other expected effect the project will have on future development activities
-

V. Relocation and Other Statutory Requirements

A. For the principal beneficiaries

1. List the kinds of industries & and the products manufactured or processed, or service provided:

Industry

Product or Service

_____	_____
_____	_____
_____	_____

2. Is there a possible relocation problem?
yes_____ no_____. If yes, describe

3. Is there sufficient assurance that all required certification on Civil Rights & relocation will be executed? yes_____ no_____
If no, describe problem _____

VI. Construction Implementation

A. What are the number of months required for

1. start of construction (from approval of project) _____
2. completion of construction (from start of construction) _____
3. initial operation (from completion of construction) _____

- B. Is there a pool of local labor that can be used on construction? yes_____ no_____

REMARKS:

APPENDIX B

**TOTAL EMPLOYMENT FOR CANNED FRUIT AND
VEGETABLE INDUSTRY IN LAKESHORE**

Employment in
1,000 man hours

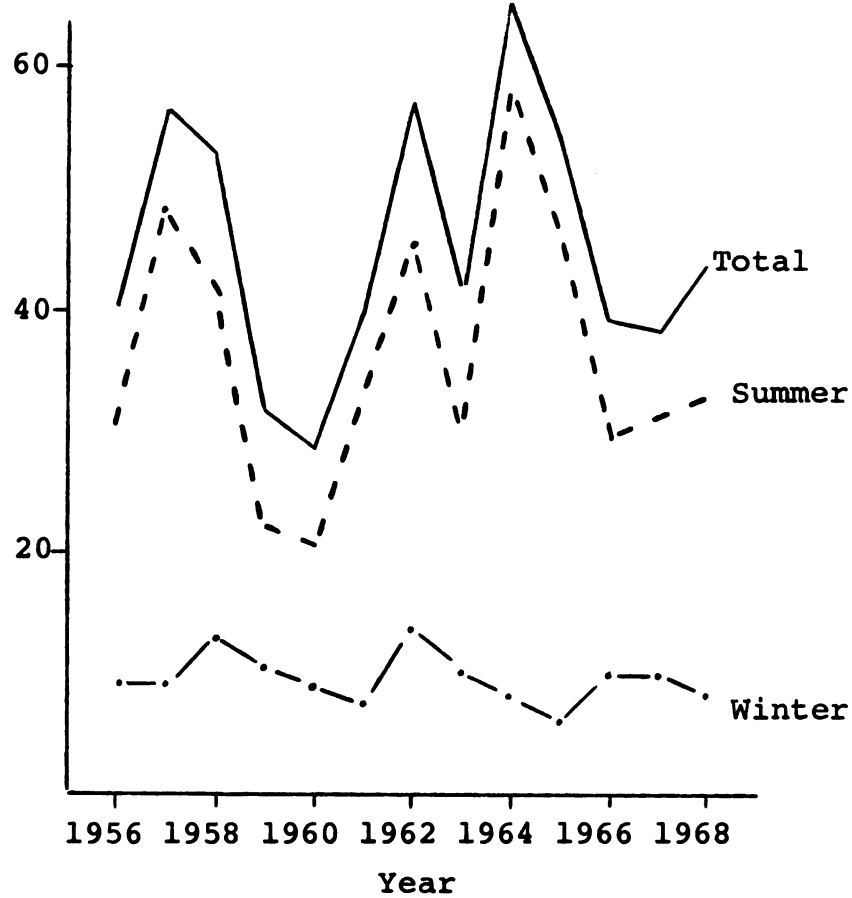


Figure B-1. Total Employment for Canned Fruits and Vegetables Industry in Lakeshore.

APPENDIX C

LOG SUMMARY FOR LAKESHORE MARINA

TABLE C-1. Log Summary for Lakeshore Marina.

Month	Year														
	1964			1965			1966			1967			1968		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
May							16	7	28	12	5	15	2	15	30
June	30														
July	337	153	532	498	328	1077	536	340	1200	592	327	1083	520	315	1042
Aug	217	102	319	259	141	480	315	234	698	341	255	878	317	246	804
Sep	35	20	264	98	72	269	40	21	51	86	33	110	76	68	193
Oct				21	36	86				9	9	27	16	60	160
Nov				15	52	156							9	34	102
Totals	619	307	1005	918	659	2115	955	655	2143	1111	678	2270	1037	810	2479

Column 1: number of people.

Column 2: length of stay (days).

Column 3: total man days (derived by multiplying the number of people per each boat registered by the total amount of days they boated from the harbor). This does not include boats registered by residents.

APPENDIX D

WAGE/TIME EQUIVALENT CONVERSION TABLE

TABLE D-1. Wage/Time Equivalent Conversion Table.

Rate	.75 hr	1.00	1.15	1.25	1.30	1.50	1.75	2.00	2.50
\$ paid	m/hrs	m/hrs	m/hrs	m/hrs	m/hrs	m/hrs	m/hrs	m/hrs	m/hrs
1.00		1	.8	.8	.8	.7		.5	.4
3.00	4	3	2.6	2.4	2.4	2	.72	1.5	1.2
5.00	6.7	5	4.4	4	4	3	2.9	2.5	2
10.00	13	10	9	8	7.7	6.7	5.72	5	4
25.00	33.3	25	21.8	20	19	16.7	14.3	12.5	10
40.00	53	40	35	32	31	26.7	25.1	20	16
50.00	67	50	44	40	38	33	28.6	25	20
60.00	80	60	53	48	45	40	34.3	30	24
75.00	100	75	65	60	58	50	43	37.5	30
80.00	107	80	69	64	62	53	48.3	40	32
90.00	120	90	78	72	70	60	51.4	45	36
100.00	133	100	87	80	77	67	57.4	50	40
110.00	147	110	96	88	85	73	62.9	55	44
120.00	160	120	105	96	90	80	68.6	60	48
150.00	200	150	130	120	115	100	86	75	60
175.00	233	175	152	132	135	116.7	100	87.5	70
180.00	240	180	156	136	139	120	102.7	90	72
200.00	267	200	174	156	153	133	115	100	80
220.00	293	220	182	172	168	146.7	125.7	110	88
225.00	300	225	196	176	172	150	127	112.5	90
240.00	320	240	208	192	180	160	137	120	96
250.00	333	250	218	200	191	166.7	144	125	100
275.00	367	275	239	220	211	183	157	137.5	110
280.00	373	280	243	224	215	186.7	158.3	140	112
290.00	387	290	252	232	223	193	166.4	145	116
300.00	400	300	261	240	231	200	171	150	120

APPENDIX E

**EMPLOYMENT: MAN HOURS FOR RELEVANT SECTOR AS
CODED ACCORDING TO SIC CODE, WINTER AND
SUMMER**

TABLE E-1. Employment: Man Hours for Relevant Sector as Coded According to SIC Code,
Winter and Summer.

SIC	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Winter														
5210	0	0	0	0	0	0	0	0	0	0	0	0	4122	4128
5392	1514	1705	1701	2102	2517	2499	2466	2603	2763	2860	2938	3239	3402	3447
5411	370	370	370	370	370	370	370	370	736	344	494	510	720	1175
5463	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5541	0	0	0	0	0	0	0	0	493	1194	3107	3419	3392	3253
5599	1264	1216	1224	1244	1284	1264	1264	1264	1264	1284	2379	2399	2424	3144
5812	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5912	4160	4160	4160	4160	4160	4160	4177	4840	4956	4788	3696	5052	3435	3435
5997	0	0	0	0	0	0	0	0	0	20	20	20	20	20
6020	0	0	0	0	1560	1560	1560	1560	1980	2100	2080	2080	2500	2600
7241	1040	1040	1040	1040	1040	1040	1040	1040	1040	1920	2080	2080	2080	2080
8060	0	0	0	0	1000	1220	1267	2080	1844	1579	2531	4541	5311	5725
8061	0	0	6112	15949	21178	16048	20406	23145	22619	26900	25625	27964	36671	42500
9300	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2241	2002
Summer														
5210	0	0	0	0	0	0	0	0	0	0	0	1768	5463	3992
5392	4712	6103	7676	6196	5194	5030	4907	4436	4437	4816	5510	6206	6563	6944
5411	840	840	840	840	840	840	840	840	1032	1150	1609	3066	3754	5995
5463	0	0	0	0	0	0	0	0	0	0	1699	3039	3528	4278
5541	0	0	0	0	0	0	0	0	1435	1527	4375	5908	5211	5482
5599	1992	1992	1992	2050	1992	1992	1992	1992	2052	3327	3812	3812	3812	5137
5812	2660	2660	2700	2700	4086	4508	5050	5512	5864	5432	5432	5432	5512	5864
5912	5920	5920	5840	5840	6890	5920	6705	7205	6565	5800	5439	1665	6043	6739
5997	0	0	0	0	0	648	648	1584	1584	2336	2336	3236	3268	3340
6020	0	0	0	0	1560	1620	1560	1980	2160	2160	2180	2680	2600	2700
7241	1040	1040	1040	1040	1040	1040	1040	1040	1960	2080	2080	2665	2665	3213
8060	0	0	0	880	1588	1004	1127	1286	1354	1825	3798	5678	6255	6152
8061	0	0	14137	18844	20474	19289	24830	24331	24868	26460	26639	35806	42987	46500
9300	3108	3060	3108	3108	3108	3108	3108	3060	3196	3128	3128	3108	3424	3528

APPENDIX F

**EMPLOYMENT: MAN HOURS FOR NON-RELEVANT SECTOR
AS CODED ACCORDING TO SIC CODE, WINTER
AND SUMMER**

TABLE F-1. Employment: Man Hours for Non-relevant Sector as Coded According to SIC Code, Winter and Summer.

SIC	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Winter														
2033	0	8345	9233	12450	10360	9004	7131	11139	9812	8016	6542	9772	9842	7812
2399	6320	7720	8324	8388	5908	5474	5783	5946	6270	5824	6992	5880	4140	3120
2810	0	0	0	0	0	0	0	13896	20412	20240	20724	9064	4972	5324
3732	1340	1340	1340	1350	2230	2380	1540	1340	1340	1350	1350	1340	1340	1340
5231	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
5540	2496	2496	2496	2496	2496	2496	2496	2496	2496	2496	2496	2496	2496	2496
5722	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
5732	0	3120	3120	3120	3120	3120	3120	3120	3120	3120	3120	3120	3120	3120
5930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5992	0	0	0	0	0	2772	5060	5324	5676	4840	8930	8756	9064	9053
6411	1820	1820	1820	1820	1820	1820	1820	1820	1820	1820	1820	2555	2730	2730
7013	2600	2600	2600	2600	2760	2760	2760	2760	2760	2800	2760	2760	1710	1460
7031	0	0	0	0	0	0	0	0	0	0	0	0	7600	12600
7032	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7231	0	0	624	624	624	624	624	624	624	624	624	624	624	624
8211	21840	22490	23466	24440	24050	23590	22230	26795	23750	23251	22750	23980	30680	30260
8231	234	234	234	234	234	234	234	234	234	234	234	234	234	234
9190	1191	1191	1191	1191	1191	1231	1191	1191	1191	2231	2311	2231	2231	2231
Summer														
2033	480	30183	48166	41670	22197	20543	32770	46804	32325	57811	45825	29680	30739	34790
2399	5000	6760	7280	7594	7346	5272	5904	6536	8674	5200	5990	5370	4080	4130
2810	0	0	0	0	0	0	176	20724	19756	21040	16368	8052	4752	5984
3732	2040	2040	2030	2030	2560	2460	1520	1520	1570	1520	1520	1520	1520	1580
5231	1040	1040	1040	1040	1040	1040	1040	1040	1080	1040	1040	1040	1040	1080
5540	2496	2496	2496	2496	2496	2496	2496	2496	2592	2496	2496	2496	2496	2592
5722	1040	1040	1040	1040	1040	1040	1040	1040	1080	1040	1040	1040	1040	1080
5732	0	3432	3432	3432	3432	3432	3432	3432	3567	3432	3432	3432	3432	3567
5930	520	520	520	520	520	520	520	560	520	520	520	520	520	560
5992	0	0	0	0	0	6468	10208	9944	13024	10120	12100	12716	14256	13332
6411	1820	1820	1820	1820	1820	1820	1820	1820	1890	1820	1820	2730	2730	2835
7013	2600	2600	3224	3224	4864	4864	4944	5104	5282	5234	5054	4444	4474	4632
7031	0	0	0	0	0	0	0	0	0	0	0	0	35880	45160
7032	14960	13920	14960	14960	14960	14960	18400	16800	19480	19280	20000	20720	20920	29040
7231	0	0	1026	1026	1026	1026	1026	1016	1074	1026	1026	1026	1026	1074
8211	14170	14453	15375	15615	15545	14485	15965	16613	15618	14788	14320	18680	20810	20460
8231	234	234	234	234	234	234	234	234	234	234	234	234	234	234
9190	1575	1575	1575	1575	1575	1575	1600	1575	1615	2615	2615	2615	2640	2695

MICHIGAN STATE UNIVERSITY LIBRARIES



3 1293 01729 9771