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**INSIGHTS FOR RURAL DEVELOPMENT:
A STUDY OF USERS' OPINIONS ON THE ADEQUACY
OF COMMUNITY SERVICES IN MICHIGAN'S "THUMB AREA"**

**By
Frederick (Fritz) Charles Sauer**

A DISSERTATION

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ABSTRACT

INSIGHTS FOR RURAL DEVELOPMENT: A STUDY OF USERS' OPINIONS ON THE ADEQUACY OF COMMUNITY SERVICES IN MICHIGAN'S "THUMB AREA"

By

Frederick (Fritz) Charles Sauer

Compared to services in metropolitan areas in the United States, many rural services are generally considered inferior for meeting the needs of rural people. Many rural people, for example, often have trouble finding proper medical, educational, or public protection services. Providing an adequate level of services, however, is important for rural development. An adequate level of services, for example, helps attract new and desired types of business that provide employment.

Local officials, in their decisions to improve the adequacy of community services in rural areas, gain insights into service adequacy from understanding the opinions of those who use services. Local officials, however, are often limited to insights of service adequacy from just a few special interests and do not receive information from a broad cross-section of service users. Since a representative sampling of users opinions on service adequacy is not feasible in all rural areas of the country, it was the intent of this research to provide some general insights on the adequacy of services in rural areas of the United States for aiding rural development efforts by surveying the opinions of a broad cross-section of service users in a predominantly rural area of Michigan.

In reviewing the background literature, it was clear that little is understood about peoples' opinions on service adequacy as a basis for understanding service improvement opportunities. Therefore, this

study was exploratory in nature. No hypotheses were formulated. Given the lack of prior research, the following four objectives were established to guide this research effort:

1. To determine consumer and local public officials' satisfaction with selected community services.
2. To identify reasons consumers and local public officials were dissatisfied with selected community services.
3. To identify socio-economic characteristics most closely associated with consumers' dissatisfaction of selected services.
4. To determine the differences between consumers and local public officials' dissatisfaction with selected community services.

Based upon the research findings, it was concluded in this study that (1) service users were least satisfied with local and county roads, swimming facilities, and mental health services; (2) a general lack of course selection is a barrier to adequate educational opportunities in rural areas; (3) the opinions of service consumers concerning the adequacy of services are generally an accurate reflection of actual service conditions in rural areas; (4) people living in more sparsely settled areas are less satisfied with a greater number of services than people living in more urban areas (i.e., cities, towns, villages); (5) females were less satisfied with a greater number of services than are males in rural areas; and (6) local public officials' opinions may serve as a general indicator of consumers' opinions of service adequacy in rural areas.

Implications of these conclusions are that (1) local public officials should consider a broad range of service improvement opportunities; (2) that officials should identify necessary curricula for better meeting the educational needs of rural people; (3) consumers' opinions are useful indicators of actual service conditions in rural areas; (4) that national

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and state policy makers make greater efforts towards improving services to rural residents; (5) that women may have sensitivities and insights that would benefit decision making for improving community services; and (6) that a general understanding of service conditions in rural areas could be acquired by contacting local public officials.

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CHAPTER I

INTRODUCTION

Problem Statement

The adequacy of services in rural or nonmetropolitan areas¹ of the United States is generally considered inferior to that in urban areas. Many rural people, for example, have trouble finding proper medical attention due to the shortage of doctors, nurses, and medical facilities. In addition, rural people must often travel long distances to acquire medical help. Ambulance service, emergency hospital service, and specialized health care are in short supply in rural areas. Poor fire protection is another example of service inadequacies in many rural areas. More often than not, rural fire services are manned by volunteer personnel. The response time to fires is often relatively slow, resulting in a greater chance of personal injury or death to rural residents.

The quality of rural education is also poorer, in many cases, when compared to urban education. Many of the primary and secondary rural schools cannot afford the costs associated with implementing new curricula or the costs of new resource materials. In addition, many rural school systems cannot afford the expense of hiring specialized teachers for helping children with learning disabilities.

¹The terms "rural" or "nonmetropolitan" will, for the purposes of this study, refer to areas that are outside Standard Metropolitan Statistical Areas (SMSA) and that have a population concentration of less than 50,000 persons.

These are but a few examples that characterize the low level of services in rural areas. A task force report sponsored by the U.S. Department of Agriculture and land grant colleges sums up the problems of services in rural areas by stating:

Reduced revenues, increased demands, and high per capita costs, especially in sparsely settled areas, have contributed to a relatively low level of institutional services--the overall picture of rural community facilities is one of inadequacy and poor quality. Water supply, waste disposal, and fire protection are often lacking in rural areas. Health and medical services are relatively inferior and frequently quite inaccessible.²

The following chapter documents these and other problems associated with providing adequate services to rural residents.

Improving community services is an important prerequisite to rural development. Providing an adequate level of services in rural communities helps to attract new and desired types of business or industry that provide employment. An adequate school system, fire and police protection, public sewer and water systems, all help to encourage the location of new businesses to an area or the expansion of existing businesses.

The provision of adequate services in rural areas also helps to attract professionals such as doctors or educators who are important contributors to the economic and social development of a rural community. Good schools, hospitals, roads, and recreational facilities all help to make a community a desirable place to live.

Finally, providing adequate services such as vocational or adult education helps rural people upgrade job skills and acquire new knowledge

²A Joint Task Force of the U.S. Department of Agriculture and the State Universities and Land Grant Colleges, Rural Development and Family Living (Washington, D.C.: U.S. Government Printing Office, 1968), p. 15.

necessary for gaining employment or responding to changing employment opportunities.

Local public officials are an important decision making group that help provide services to rural residents. They are entrusted by the public to help improve the adequacy of services through appropriating and allocating public tax money. Schools, police and fire protection, roads, water and sewer facilities are all examples of services that local officials are concerned about. Local officials also pass ordinances or help enforce state or federal laws that help ensure the attainment of service standards. The enforcement of zoning requirements, building codes, and health codes are examples.

In making decisions to improve the adequacy of community services, local officials are influenced by a number of factors. One source lists six factors that influence local decision making:

1. ...the specific attitudes that citizens hold about public programs...;
2. demands, resources, and political support from individual citizens, political parties, and interest groups;
3. demands, resources, and political support from the legislative, executive, and judicial branches of government;
4. demands, resources, and political support from individuals and institutions in other governments through "vertical" or "horizontal" intergovernmental relations;
5. the social backgrounds, skills, and values of administrators themselves; and
6. the structures, procedures, and precedents of administrative units.³

Among these six factors, Ira Sharkansky indicates the first factor--attitudes influence decision making--is critical. In the American representative system of government, a recognition of public attitudes or opinions by local officials is considered important for several

³Ira Sharkansky, Public Administration: Policy Making in Government Agencies (Chicago: Rand McNally Publishing, 1975), p. 51.

reasons. First, the people feel a part of the decisions affecting their lives and thus feel a commitment for the public policies that are decided upon. Second, when people feel a commitment towards the decision affecting their lives, there is a greater likelihood of their participation and involvement. Thus, new knowledge and resources are provided in carrying out the public policy. Finally, an input of opinions from a number of different people in the decision making process brings about a recognition of differing points of view and differing needs.

An understanding of public opinion, therefore, can benefit officials in their decision making for improving the adequacy of services to rural residents. Local officials, however, are often limited to an input of opinions from special interests and do not receive information or opinions from a broad cross-section of the population. A representative sampling of opinions could provide officials with insights into service improvement opportunities from a broad array of individuals rather than a select few. Since a representative sampling of opinions on service adequacy is not necessarily feasible in all rural areas of the country, it is the intent of this research to provide some general insights on the adequacy of community services in rural areas of the United States by surveying the opinions of a broad cross-section of people in a predominantly rural area of Michigan. Hopefully, these insights will identify possible service improvement opportunities for rural communities generally and thus assist in rural community development.

The following chapter provides additional background information on topics concerning:

1. the role that service improvement plays in the development of non-metropolitan communities. This information provides a clearer understanding of the assertion made in this study that improving community services is important in the development of nonmetropolitan areas;

2. the role that public opinion plays in decision making; since it is an assumption that consumers' opinions are an important factor to be considered by local officials in making service improvements, it is important to explore the validity of this assumption through a review of the literature;
3. findings from related studies concerned with how consumers with differing backgrounds perceive the adequacy of various community services; a better understanding of these relationships suggest policy implications concerning the development of rural community services to specific groups of people; and
4. findings from related studies comparing citizens and officials' views of service adequacy; reviewing information on this topic will also provide a better understanding of whether, in fact, local officials reflect citizen views in their decision making.

Chapter III focuses on research design and data collection.

Chapter IV provides information on the study area and services within the study area. The findings of the research are presented in Chapter V; conclusions, implications, limitations, and recommendations for further research are presented in Chapter VI.

CHAPTER II

BACKGROUND TO THE PROBLEM

The Role of Community Services in Rural Development

The introductory chapter indicated that the services in rural or nonmetropolitan areas are inferior to those in metropolitan areas. A recent report of the National Academy of Sciences stated, "The massive discrepancy between urban and rural services, particularly medical and educational, has been well documented..."¹ Indeed, there is evidence that discrepancies between the quality of rural and urban services exist, not only in health and education but in other services as well. In the First Annual Report of the Secretary of Agriculture to the Congress, some comparisons of service levels were made between nonmetropolitan and metropolitan areas. (In cases where statistical comparisons were made, 1970 census data were used unless otherwise indicated.)

In assessing health services, a U.S. Department of Agriculture report relates that "metropolitan-nonmetropolitan statistical comparisons indicate that nonmetro areas continue to be lacking in health services ..."² There is, for example, an acute doctor shortage in rural areas. The report indicates that the number of doctors per 100,000 population

¹Committee on Agriculture and the Environment, National Academy of Sciences, Productive Agriculture and a Quality Environment, (Washington, D.C.: National Academy of Sciences, 1974), p. 101.

²First Annual Report of the Secretary of Agriculture to the Congress, Rural Development Goals, (Washington, D.C.: U.S. Government Printing Office, 1974), p. B-16.

in nonmetropolitan areas is 69 compared to 145 in metropolitan areas. The report also indicates that nonmetropolitan areas have fewer health personnel of all kinds per 100,000 population, a lack of emergency health service, fewer specialized medical services (e.g., psychiatric, tubercular), and an absence of comprehensive health care compared to metropolitan areas. The report does indicate, however, that nonmetropolitan areas have more hospital beds per 100,000 population than do metropolitan areas.³

The general quality of educational services is, according to some indicators, poorer in rural areas than in metropolitan areas. A U.S. Department of Agriculture report indicates that a fewer proportion of teachers in nonmetropolitan areas hold a masters or bachelor's degree than in metropolitan areas. It was also reported that the per pupil expenditures in nonmetropolitan areas are four-fifths of what they are in metropolitan areas.

Fire services in non-metropolitan areas are also reported to be inferior to those in metropolitan areas. "Insufficient water supplies, lack of adequate building codes or too few inspectors to enforce them, and insufficient funds to pay fire-fighters or replace antiquated equipment,"⁵ are some of the reasons for fire prevention or control problems in rural areas. Also, rural fire personnel must travel relatively long distances to get to the fire. The severity of rural fire control problems is reflected in that fact that about twice the proportion of rural residents die from fires than do urban residents.⁶

Other services in rural areas such as water and sewer facilities are conceded to be of a lower quality than those in metropolitan areas.

³Ibid. ⁴Ibid., B-20. ⁵Ibid. ⁶Ibid.

The following observation on the adequacy of rural water and sewer facilities is made:

In 1970, ...water supply and sewage disposal facilities were identified in 67.7 million year-round housing units. Of this total, 46.1 million units were located in metropolitan areas. But rural areas, with slightly less than one-third of the units, had roughly four-fifths of all those without modern water and sewer facilities--public systems, individual wells, septic tanks, and cesspools.⁷

There are several reasons for the inadequacy of these and other rural services. A major reason is the decline in rural population over the past decades. In 1910, for example, over 54% of the U.S. population lived in rural areas. In 1970, however, a little over 25% lived in rural areas.⁸ This population loss has meant fewer numbers of rural people to support the increasing costs associated with providing quality services. As Kenneth Rainey comments,

Not only are the dollar costs for rendering some kinds of services high per capita in these small communities because the capital and operating costs must be spread over fewer people, resources of these communities are smaller. The small communities in rural regions tend to have lower per capita incomes than similar communities in urbanized areas. Thus, the twofold problem...⁹

Given the relative inadequacy of services in rural areas and the conditions that contribute to these service inadequacies, a central question then becomes, why is it important to improve rural community services? As Raymond Vlasin indicates,

Public services do not stand as an end in themselves; they constitute means toward other goals or ends. We might improve services and facilities to enhance the well-being of particular persons... (or) enhance the community for economic and industrial expansion.¹⁰

⁷Ibid., p. B-15. ⁸Ibid., p. A-2.

⁹Kenneth Rainey, "Public Services in Rural Areas," Proceedings of a Conference in Manpower Services in Rural Areas, (East Lansing: Michigan State University, 1973), p. 16.

¹⁰Raymond D. Vlasin, "Linking Research With Planning: Some Implications and Approaches," North Central Regional Center for Rural Development,

Thus, according to Vlasin, enhancing the adequacy of services is crucial to the social and economic improvement of rural areas. Another writer also sees the improvement of community services closely tied to rural development. Samuel Leadley writes that "rural development is seen as a set of processes one of which is the improvement of community services."¹¹ Another source emphasizes the improvement of community services as a prerequisite to economic development in rural areas:

The quality of community facilities and services go hand-in-hand with economic development in making rural America a better place to live and work. Electric power and adequate water and waste disposal systems, transportation systems, and communication facilities are essential to development activities ...adequate health and educational services, and to a lesser degree, recreational opportunity, are often prerequisites to substantial external investment in a smaller community.¹²

In addition to emphasizing the general importance of improving services for rural development, the following discussion focuses upon an examination of how some different kinds of services contribute towards rural development as well as problems with upgrading these services.

Improving education services, as pointed out in the literature, is important for rural development for several reasons. First, improved rural education helps to insure a diversity of learning experiences to help meet the educational needs of a broad range of people. Also, improved educational services helps attract people of differing backgrounds and talents to rural areas. A National Academy of Sciences report indicates:

Aspects of Planning for Public Services in Rural Areas, (Ames: Iowa State University, 1976), p. 372.

¹¹Samuel Leadley, "Community Services for Nonmetropolitan People in the Northeast," Northeast Regional Center for Rural Development, Papers of the Workshop on Current Regional Development, Regional Research in the Northeast, (New York: Cornell University, 1972), p. 138.

¹²Second Annual Report of the Secretary of Agriculture to the Congress, Rural Development Goals, (Washington, D.C.: U.S. Government Printing Office, 1975), pp. 10-11.

The future rural educational system must be diverse enough to attract a representative segment of the population. It must offer elementary school education of the caliber to attract families with high standards and maintain quality programs up through adult education of the kind that is in growing demand by retired persons.¹³

Second, an improved rural educational system may also help attract younger working age persons. Currently, many younger working age youth are migrating to urban areas in search of employment leaving an older population to support the increasing cost of rural development. An attraction of younger persons to rural areas would inject some of the vitality needed for social and economic growth in rural communities.

Finally, upgrading vocational educational opportunities in rural areas would help persons acquire new job skills needed for obtaining employment as well as provide knowledge needed for establishing and running new businesses in rural areas.

There are, however, a number of barriers to providing quality education in rural areas. Kenneth Rainey indicates two problems. First, many rural school districts cannot afford a wide variety of courses in the educational curriculum because of a limited tax base; and second, many rural school districts cannot afford needed educational specialists such as remedial reading teachers, art and music teachers.¹⁴

The adequacy of health services is considered in the literature as another key service for social and economic rural development. Adequate health services are needed to insure the health and well-being of

¹³Committee on Agriculture and the Environment, National Academy of Sciences, Productive Agriculture and A Quality Environment, p. 107.

¹⁴Kenneth Rainey, "Public Services in Rural Areas," p. 18.

residents living in rural areas. Rural residents, however have several problems in obtaining adequate health care as indicated in a report of the National Academy of Sciences:

While the costs of needed (health) services will be high, the present and direct costs of inadequate services are also high. For example, in sparsely settled and economically depressed areas of the county, ...the need to travel 50-100 miles to secure medication, pre-natal care, or routine physical examinations means that residents whose incomes are well below poverty levels are pouring out large sums of money for what few services they manage to get.¹⁵

There are also several problems in attracting skilled health care personnel to rural areas. The National Academy of Sciences' report also points out that "a major deficiency in rural health care lies in the difficulty of attracting people with needed skills ...one reason often given is the isolation from professional colleagues and from special technical equipment."¹⁶ The report also indicates that doctors are not attracted because of low earning potential, undesirable social settings from what doctors and their families are used to, and reservations about adequate educational services for their children.

With respect to other health care conditions in rural areas, Kenneth Rainey states that ambulance systems are inadequate. Also, rural children have poorer teeth than children in urban areas.¹⁷ Research undertaken by Kraenzil and MacDonald show a high incidence of mental health problems in sparsely settled areas.¹⁸ In addition, a summary report

¹⁵Committee on Agriculture and the Environment, National Academy of Sciences, Productive Agriculture and A Quality Environment, p. 106.

¹⁶Ibid.

¹⁷Kenneth Rainey, "Public Services in Rural Areas," p. 19.

¹⁸As reported by Anne S. Williams, "Planning Service Delivery Systems for Rural, Sparsely Areas," North Central Regional Center for Rural Development, Aspects of Planning for Public Services in Rural Areas, (Ames: Iowa State University, 1976), p. 207.

of the National Advisory Commission on Rural Poverty indicated that there was a need for people in rural areas to develop and expand family planning programs for planning the number of desired children.¹⁹

Adequate transportation systems also play a key role in rural development. Safe roads and bridges, for example, provide safe access to businesses and homes. Moreover, quality roads and highways are prerequisites to attracting new business and industry to an area. Building and maintaining roads and bridges, however, is expensive, and many rural areas cannot afford the expense. Also, public transit is difficult to establish and maintain in rural areas due to the relatively few people and high per capita cost.

The adequate provision of water and sewer facilities in rural areas is also crucial to economic development. Kenneth Rainey indicates that the Area Redevelopment Act Program (ADA), Appalachian Program, and Farmers Home Administration were "overwhelmed" with requests for building small town sewage systems. This high demand is indicative of the desire of rural areas to have these type of facilities in order to encourage industrial development. The high cost of building these facilities in rural areas without federal aid, however, would be prohibitive. Also, as Rainey comments, "Scale is a problem. Distance is a problem. You can't run a line very far along a county road before the cost begins to soar."²⁰

Police and fire services are also important to the development of rural areas. The adequacy of these services provide safety for both

¹⁹W. E. Black, "Rural Poverty: A Summary Report of the National Advisory Commission on Rural Poverty," Selected Perspectives for Community Resource Development, Edited by Raymond D. Vlasin, Luther Wallace, and Daryl Hobles, (Raleigh: North Carolina State, 1969), p. 47.

²⁰Kenneth Rainey, "Public Services in Rural Areas," p. 20.

local rural residences as well as the security needed for commercial and industrial places of business. As Rainey points out, many rural police departments are understaffed and rural fire departments are often manned by volunteer personnel.²¹ Thus, many rural homes and businesses are poor insurance risks, and they are either forced to pay high insurance rates or are denied insurance coverage all together.

Although many writers point out that community services play a key role in the development of nonmetropolitan areas, and that attracting individuals and families to rural areas is an important factor in the process of social and economic development, two questions emerge: first, do people want to move to rural areas; and second, would it be economically feasible for families to move to rural areas?

In answer to the first question, a report from the National Academy of Sciences cites a 1970 Life magazine poll showing that "...of the people living in cities today, two-thirds would like to get out and only a third want to stay another 10 years."²² Although the poll results are dated and may not represent a total commitment of people to move if they could, the results do suggest that urban overcrowding, congestion, and high crime rates may be factors in people's desires to leave metropolitan areas.

In answer to the second question of whether people can break away from their economic dependency of the city, the National Academy of Science reports again indicate that "fewer people will be required to live in cities ...automation, sophisticated communication and

²¹ Ibid., p. 22.

²² Committee on Agriculture and the Environment, National Academy of Science, Productive Agriculture and A Quality Environment, pp. 97-98.

transportation technologies will permit decentralization of service industries."²³ Thus, with the general desire of people to move out of cities and the greater latitude that people will have in choosing a living location, improving the adequacy of rural community services would encourage urban dwellers to consider rural areas as a place to live and work.

Local public officials in rural areas have an important and direct role in the improvement of services and facilities. They are directly responsible for appropriating and allocating public tax money for such services as education, health, transportation, and public safety. Anticipating the challenges that lie ahead for public officials, Gerald Church and Kenneth VerBerg write

How can our local governments be geared up to deal with the growing demands made on them? That question deserves our most careful attention, since local governments are largely responsible for delivering the public services on which we are all so dependent.²⁴

In their decision making for improving the adequacy of community services for rural development, local public officials in rural areas can benefit by understanding citizen's opinion. An understanding of public preferences in decision making helps local public officials better understand, from the clientele point of view, a variety of possible public services needs. Ray Vlasin comments that a major concern in planning for rural development is "...how to insure meaningful local participation in decisions."²⁵ The writer goes on to say that

²³ Ibid., p. 97.

²⁴ Gerald Church and Kenneth VerBerg, "Toward the Resolution of Problems in Michigan Local Government," Proceedings of the Public Policy Forum on Alternatives for Michigan Local Government, (E. Lansing: Michigan State University, 1973), p. 1.

²⁵ Raymond D. Vlasin, "Linking Research With Planning: Some

clearly, the public service policies and program decisions must benefit the actual and potential users of those services. ...Achieving this orientation in policy and program development is difficult. Achieving it without local participation by those affected is likely impossible.²⁶

Also, including citizen opinion in public decision making helps to legitimize or insure the support of the public in the decisions that are made for improving services; and finally, recognizing public opinion in decision making would help people feel a part of the decisions affecting their lives which may result in a community commitment of ideas, time, and resources for improving services.

Although these are three reasons why understanding citizen opinion is useful in decision making for improving community services, several writers point to other considerations in using public opinion in decision making. The following section, therefore, focuses on what some writers see as advantages and limitations in using citizen opinion in decision making. This review helps to put into perspective the usefulness of considering citizen opinion in decisions for improving community services in rural areas.

The Role of Public Opinion in Rural Development

The question of whether public opinion is useful information to consider for decision making is not new; it emerged as this nation was being established.

There were two prevailing schools of thought on the usefulness of public opinion. One school held that the determination of public interest

Implications and Approaches," Aspects of Planning for Public Services in Rural Areas, p. 374.

²⁶Ibid., p. 375.

should not be left to the people; rather, the public decision maker should use his own insights in deciding public interest. This view was contrasted by the philosophy that the will of the people was the only legitimate source of judgement on public issues.

The former view held that people were too ill-informed and 'too moved by every sudden breeze of passion or to every transient impulse' as expressed by Alexander Hamilton. Hamilton's views reflected the views of Edmund Burke, a member of the British Parliament in the latter eighteenth century. In a letter to his Bristol constituents, Burke states the classical case for independent decision making on the part of public decision makers.

A representative's unbiased opinion, his mature judgement, his enlightened conscience, he ought not to sacrifice to you; to any man or set of men living. These he does not derive from your pleasure; no, nor from the law and the constitution. They are a trust from Providence, deeply answerable. Your representative owes you not his industry only, but his judgement, and he betrays, instead of serving you, if he sacrifices it to your opinion.²⁷

In contrast to Hamilton and Burke's philosophy of public representation, Jean Jacques Rousseau recognized that representatives could develop special interests that run contrary to the general good of the community at large. He wrote The Social Contract in which he described the "general will" as that sense of common interest in which both representatives and constituency recognize as something different than selfish private interests. Both Thomas Jefferson and Abraham Lincoln generally reflected Rousseau's view, and were strong advocates of following citizen's opinions on public issues. Jefferson felt that public sentiment

²⁷ Edmund Burke, in his letter to the Electors of Bristol, 1774. Taken from Charles Roll and Albert Cantril, Polls: Their Use and Misuse, (New York: Basic Books, Inc., 1972), p. 138.

seldom chooses immorally or unwisely, and Lincoln felt that following constituent will was a great living principle of democratic representative government.

In more recent thinking, the question of the proper role of public opinion in decision making is still very much with us--particularly because of the growing popularity of opinion surveys on national, state, and local issues. Authors in the literature point to advantages and limitations of using public opinion in decision making.

Harwood Childs advocates the consideration of public opinion in decision making for three reasons: first, a government founded on consent and whose major policies have the general support of the people is less subject to violent overthrow and sudden change. Childs quotes Lord Bryce as saying, "The excellence of popular government lies not so much in its wisdom as in its strength."²⁸ Secondly, he indicates that it seems only fair that those who are affected by major policy decisions should be consulted and should share in the making of policy. As a final reason, Childs feels that in some matters, public opinion is wiser than the opinions of a small decision making group. He writes that

Many would argue ...that the general public is especially competent, probably more than any other group, elitist, expert or otherwise, to determine the basic ends of public policy, to choose top policy makers, to appraise the results of public policy, and to say what, in the final analysis is fair, just, and moral.²⁹

Childs indicates that it is also necessary to take a discriminating view concerning when a decision maker should use public opinion, and he differentiates between question of the ends of policy versus the

²⁸Lord Bryce as quoted by Harwood Childs, Public Opinion: Nature, Formulation and Role, (Princeton: D. VanNostrand Co., Inc., 1965), p. 350.

²⁹Harwood Childs, Public Opinion: Nature, Formulation, and Role, (Princeton: D. VanNostrand Co., Inc., 1965), p. 350.

means of achieving those ends; technical from non-technical questions; and those questions from within and outside citizen experience. According to Childs,

...the general public is not competent to determine the best means for attaining specific goals, to answer technical questions, to prescribe remedies for political, social, and economic ills, and to deal with specialized issues far removed from the everyday experience and understanding of the people in general.³⁰

Several other authors also agree with Childs and point out limitations in using public opinion in decision making. Charles Roll and Albert Cantril feel that some issues are too complex for general public understanding. They comment:

In our own view, the competence of public opinion is at the "feeling level." The public obviously cannot be expected to be informed and up to date in its understanding of complex issues, the implications of alternative courses of action, nor the advantages of specific instrumentalities by which a policy is effected.³¹

They state that the speed of social change in our modern society has tended to restrict public opinion, and it is difficult for people to keep up-to-date on all the changes occurring around them. There is also a growing tendency for issues to become technical and complex. They include questions related to public finance, legislation on health or education, or military matters. As Roll and Cantril comment, "there is an increasing body of technical, scientific, or merely general knowledge that is required before many of today's decisions can be soundly made."³²

Leo Bogart points to three additional considerations in using public opinion information in decision making: first, the larger number

³⁰Ibid.

³¹Charles Roll and Albert Cantril, Polls: Their Use and Misuse, (New York: Basic Books, Inc., 1972), pp. 143-44.

³²Ibid., p. 142.

of opinions offered by the public may not represent commitments for action. They may be ideas gathered through the mass media and with which people have little familiarity. A second consideration is that a majority of people's opinions may be opposed to a prevailing law. A majority of people in some communities, for example, are opposed to busing for integration. Third, Bogart mentions that people's opinions are subject to rapid change, and therefore, may or may not reflect support for a given public issue over time.³³

The use of opinion polls or survey research as a means of gathering the opinions of citizens on issues of community interest also have several advantages and limitations.

Charles Adrian regards opinion polls as a useful source of information at the local level for determining potential support for proposed community improvements. Information of this type may involve, for example, the acceptability of tax increases for improving local services.³⁴

Leo Bogart points out that polls have become an important part of the process by which newsmen and political leaders develop an awareness of the public's sense of social priority. He writes that "opinion surveys have become mechanisms through which the public becomes sensitized to its own needs so that it is self-conscious about its own collective stance."³⁵

Several writers, however, point out some limitations in the use of polls for community decision making. Bogart relates that people are

³³ Leo Bogart, Silent Politics: Polls and the Awareness of Public Opinion, (New York: John Wiley and Sons, 1972), p. 113.

³⁴ Charles Adrian, "Public Attitudes and Metropolitan Decision Making," Eighth Annual Werrett Lecture on Local Government, (University of Pittsburgh: Institute of Local Government, 1962), p. 3.

³⁵ Bogart, Silent Politics: Polls and the Awareness of Public Opinion, p. 15.

sometimes asked questions on matters they have not thought about or for which they feel no sense of responsibility. Also, the mechanics of survey research are subject to error through poor interviewing, unrepresentative cross-sections, poor questionnaire construction and errors in data processing.³⁶ Structured questionnaires, for example, may limit respondent reaction so that a fuller understanding of one's opinion is not possible. Additionally, the use of interviewers in survey research may influence the respondent's statements. Bogart refers to this as the paradox of the scientific method when we change phenomena by measuring them.

Although problems are encountered in achieving the principle of American representation by utilizing public opinion in decision making, Bogart feels the public opinion must be used to inform the public leadership which in turn helps meet the changing demands of the constituency. Effective leadership, according to Bogart, requires an understanding of what the constituency wants and how badly it wants it. This, in turn, would appraise leaders of possible public spending alternatives.

Childs sees the use of public opinion as fulfilling four crucial functions in our society: first, public opinion information provides a balancing function between competing interests. He is referring to pressure groups such as labor, management, or farming types of groups. Second, Childs feels that it is important to use public opinion in addressing the broader issues of public policy making for maintaining and developing a government of public consent. Third, the use of public opinion provides a basis for discussing public issues. Lastly, public opinion

³⁶ Ibid., p. 16.

can thwart tendencies for public leaders to centralize economic and political power and can help hold them accountable for their actions.³⁷

The literature has revealed several advantages and limitations in using public opinion in decision making as well as some considerations of when and when not to use public opinion.

Writers pointed out that the use of public opinion in decision making holds public officials accountable; provides a basis for discussing public issues; helps to insure the support of the people; helps to make certain that people should have a voice in decisions affecting them; that the public, in some cases, are wiser; and that opinions provide information needed for more effective leadership.

Some limitations of using public opinion in decision making included the fact that the rapid pace of events limits general public understanding on some issues; that opinions may not represent commitments for action; that the public may have gotten erroneous information from the news media on a given issue; and that it is sometimes difficult to accurately measure public opinion.

It seemed to be concluded in the literature that it is important to consider public opinion in the decision making process, especially to identify public needs. Determining the basic ends of policy, indicating what is fair, just or moral, and appraising or evaluating the results of public policy were also considered legitimate roles for public opinion to play in decision making. On the other hand, the use of public opinion for determining means, answering technical questions, or dealing with specialized issues did not seem to be legitimate roles for using public opinion in decision making.

³⁷Childs, Public Opinion: Nature, Formulation and Role, p. 350-58.

Since it was generally concluded in the literature that public opinion does have a role in decision making, and that public opinion is one way of assessing public programs or conditions, it would then seem to be useful to utilize public opinion as one way of evaluating the adequacy of services in rural areas. Also, a good understanding of consumer dissatisfaction with selected services could help leaders identify possible services that present a hinderance to social and economic development in rural areas. Moreover, to have a good understanding of consumer dissatisfaction with those services that present possible barriers to social and economic development, local public officials must be aware of how differing consumer groups in the community feel about various services. According to Hatry, Winnie, and Fisk

...services seldom affect segments of a population the same way. ...The community as a whole might be well served by a program, while certain neighborhoods are receiving inadequate services. A recreation program, for example, may inadvertently ignore special needs of aged, very young, or handicapped persons. ...Thus, careful evaluation of various subgroups should be an important part of program evaluation.³⁸

Various socioeconomic groups in the community that view services negatively may have service needs that are not being met; development efforts, therefore, can be directed towards these groups.

Another population subgroup representing the general community interest are the local public officials themselves. As a subgroup influential in the provision of community services, it is important for them to know how their collective opinions on service adequacy match those of their constituency. Major differences in opinions may suggest that local officials do not perceive the same priorities as their

³⁸ Hatry, Winnie, and Fisk, Practical Program Evaluation for State and Local Government Officials, pp. 15-16.

constituents for improving community services and, thus, make decisions separate from the general public will. Therefore, identifying a difference in views can serve as a basis for dialogue between these two groups which can result in a better understanding of consumer service needs.

In order to gain some insights into socio-economic characteristics most closely associated with one's dissatisfaction of selected services and differences between the public and local officials dissatisfaction with services, the following literature review was undertaken.

Findings on Socio-economic Characteristics Most
Closely Associated With Dissatisfaction of
Services and Differences Between Local
Officials and Public's Dissatisfaction
of Services

Prior research concerning people's opinions on community services appears to be limited. This is particularly true for research that provides insights on how, for example, opinions vary among people with differing socio-economic characteristics. This is also true of research that compares the opinions of local public officials with service consumers on questions of service adequacy.

John C. Bollens undertook a study concerned with investigating resident' satisfaction with local public services in St. Louis County, Missouri. In describing the study, Bollens writes that, "attention is ...given to the responses among different categories of the population--who are dissatisfied and satisfied for each major governmental service?, and how does dissatisfaction relate to ethnicity, age and sex?..."³⁹

³⁹ John C. Bollens, Exploring the Metropolitan Community, (L.A.: University of California Press, 1961), pp. 253-54.

People's opinions were surveyed on the following services: conditions of residential streets, police protection, garbage disposal, sewage disposal, schools, library services, and fire protection. Related independent variables in his study were age, sex, social rank (education, income, occupation), and type of living area (urban/rural). Findings for each of these services are summarized as follows: In general, the higher the social rank, the more satisfied respondents were with streets. Social rank was measured by education, income, and occupation. Of these, the most significant relationship of the three was found among occupational class where the higher the occupational class, the more satisfied respondents were with streets.

The most significant differences of opinion on police protection were found among income classes; occupational and educational groups were not found to differ significantly. The higher income groups were found to be more satisfied with police protection than were the lower income classes.

A significantly greater proportion of city people were found to be dissatisfied with garbage disposal services than county people. Also, the highest proportion of dissatisfaction with this service was found in the city's poverty areas where the poor were twice as likely to be dissatisfied with garbage disposal services.

When county residents were compared to city residents, a significantly greater proportion of county residents were found to be dissatisfied with sewage disposal services. It also appeared that dissatisfaction with this service declined somewhat with increasing education.

Significant differences in satisfaction with schools were found among age groups. The younger age groups were found to be least satisfied

with schools. Bollens writes that many in this age group probably have school age children and therefore were concerned with the condition of public schools. Unfortunately, Bollens was not specific as to which age groups were least satisfied or which kinds of schools (elementary or high schools).

A significant relationship was found between age and one's satisfaction with library services. The older respondents were more satisfied than the younger respondents.

No significant relationship was found between one's satisfaction with fire protection services and the independent variables used in the study.

Bollens offers this summary comment on why he thinks variations in opinions were found among socio-economic groups as related to satisfaction with local services:

Variations ...with city schools and libraries are chiefly the product of the different needs and expected standards of the various segments of the population. Variations in satisfaction with ...police protection and collection of waste (sewage and garbage disposal) are largely based on differences in the services provided for different segments of the population in the city and county.⁴⁰

Another related study was undertaken by the Institute for Environmental Studies, University of Wisconsin at Madison.⁴¹ The study dealt with opinions of Wisconsin citizens towards the following public services: roads and highways, schools, general health, mental health, police protection, and adult education. Variation in responses among the following

⁴⁰Ibid., p. 273.

⁴¹Virginia Lambert, David McGrapahan, Oscar Martinson, and E. A. Wilkening, Public Service, Programs, and Policy in Four Northwestern Wisconsin Counties, (Madison: Institute for Environmental Studies, 1974).

independent variables were examined: age groups, sex, occupation, and income. The respondents were asked their opinions on whether the service should be expanded, kept the same, or cut back. Additionally, respondents were asked which were the most important community service problems. The study took place in the Wisconsin counties of Ashland, Burnett, Rusk, and St. Croix. These counties were characterized as rural and suffering from a declining economy. The findings, as reported for each socioeconomic variable, were as follows.

It was found that of the young, middle, and older age groups (years were not indicated), the younger age groups favored the expansion of mental health and adult education programs. These programs were found to be relatively unimportant for the middle and upper age groups.

It was reported that in all services (general health, mental health, police protection, and adult education) except for roads and highways, "a higher proportion of women favored expansion of these services than did men."⁴² Females were found to be more satisfied with roads and highways than men.

Those with less than a high school education felt least favorable toward service expansion (except for police protection services) than were respondents in other education groups. Generally speaking, those with higher levels of formal education were more supportive of service expansion. It was also found that those with higher levels of formal education were particularly in favor of expanding adult education; in contrast, those with less formal education felt that health, roads, and highways should be expanded.

It was found that the overall support from retired persons for service expansion was "...low compared to the other occupational

⁴²Ibid., p. 37.

categories."⁴³ Programs most important to retired persons were the expansion of roads and highways and public transportation.

In comparing blue collar and white collar workers, it was found that white collar workers were more in favor of service expansion; however, a higher proportion of blue collar workers were found to favor the expansion of both physical and mental health services. "The relatively low degree of support for these (findings) may reflect their greater resources for traveling outside the community to acquire these services."⁴⁴

The lower income groups were found to be more supportive of expanding health and medical facilities than were the higher income groups. It was also found that as income increased, the support for police, schools, and adult education increased.

The researchers concluded their study by saying that "in general, support for expansion of public services is greater among younger residents, women, and those of higher socio-economic status."⁴⁵ The authors speculated that people for whom excessive taxes are a major problem are less likely than others to support the expansion of their services.

Another related study was undertaken by H. George Frederickson entitled "Exploring Urban Priorities: The Case of Syracuse." Frederickson writes:

The hypothesis of this paper is rather straightforward: public priority preferences vary widely on the basis of social, economic, and demographic circumstances. Consequently, any authoritative ordering of metropolitan area wide public priorities will serve to advantage certain "publics" and to disadvantage others ...there is a paucity of evidence as to who is being advantaged or disadvantaged by a particular pattern of public priorities. Further, and probably

⁴³Ibid., p. 39. ⁴⁴Ibid., p. 41. ⁴⁵Ibid., p. 44.

more important, there is little known about which particular "publics" feel more or less advantaged by specific urban priorities.⁴⁶

Frederickson surveyed a random sample of the population of Onondaga County, New York in the summer of 1967. Respondents were asked to rate the following services that needed improvement: education, welfare, water pollution, housing, police protection, water, parks and recreation facilities. The independent variables used in the study were place of residence (urban-suburban), income, education, age and sex.

Frederickson found that among all socio-economic groups, those with higher levels of education and income were most in favor of improving the services (except for police protection); or conversely, as in the Wisconsin study, those with lower levels of education and income were found to be less in favor of general service improvement. Related to specific services, he found that older, those with less formal education, and lower income groups had stronger preferences for the improvement of police protection.

A fourth related research project entitled Public Values and Concerns of Washington Residents was undertaken by Dan Dillman, a rural sociologist from Washington State University.⁴⁷ Dillman was interested in examining opinion differences between urban and rural residents, and found that those who lived in rural areas viewed the condition of streets and roads as well as medical care services less adequate than in urban areas.

⁴⁶H. George Frederickson, "Exploring Urban Priorities: the Case of Syracuse," Urban Affair Quarterly, September, 1969, p. 31.

⁴⁷Dan Dillman, Public Values and Concerns of Washington Residents, (Washington State University: Agriculture Experiment Station Bulletin, 1970).

Urban-rural opinion differences were also analyzed in another study undertaken by Ronald Johnson and Edward Knop. They found that "significant ...associations show urban residents more satisfied with shopping and medical facilities, teacher ability, employment opportunities, and entertainment-recreation potentials. Rural residents, on the other hand, appear more satisfied with local democratic processes and their general geographical milieu."⁴⁸

In exploring opinion differences between leaders and citizens on satisfaction with services, a research study was undertaken by Harold Nix, Ram Singh, and Paula Cheatham.⁴⁹ The study focused on differences in opinions between leaders and citizens concerning (1) services viewed as being immediate problems, and (2) a general level of satisfaction with services.

A sample of randomly selected households ("random respondents") were surveyed in Laurens County, Georgia using a mail survey questionnaire. The sample of community leaders was made by using a "positional-reputational approach." The leaders were interviewed using the same set of questions.

Services and facilities that were viewed as being immediate problems by random respondents were in transportation, economic opportunities, recreation, health, and housing. In contrast, leader respondents felt

⁴⁸Ronald Johnson and Edward Knop, "Rural-Urban Differences in Community Satisfaction," Rural Sociology, Vol. 35, No. 4, December 1970, p. 547.

⁴⁹Harold Nix, Ram Singh, and Paula Cheatham, "Views of Leader Respondents Compared With Random Respondents' Views," Journal of Community Development Society, Vol. 5, No. 1, Spring 1974, pp. 81-91.

that greater attention for improvement should be paid to education, planning and development, and political-governmental structure.

In terms of satisfaction with services, leader respondents were generally more satisfied with services than were random respondents. The researchers concluded by saying that "responses to other questions led us to believe the random respondents would have shown relatively greater desire to change the community in terms of increasing services and facilities."⁵⁰

In reviewing these previous studies, some general relationships seem to emerge. Both the Wisconsin study and the Frederickson study found those in high income groups generally favored service expansion or improvement. This finding was not true in all cases, however. It was found in the Wisconsin study, for example, that lower income groups were more in favor of expanding health services than higher income groups. Thus, it appears that although higher income groups are generally more in favor of service improvements, it depends somewhat on the specific service in question.

It was also generally found that people in the more rural areas were less satisfied with their services. In the Bollens study, for example, county residents were less satisfied with sewage disposal than city residents; also, the Dillman study reflected a greater dissatisfaction of rural residents with streets and medical care compared to urban people. Johnson and Knop also found in their study that rural people were less satisfied with medical care in comparison to urban people.

A third general relationship seemed to develop in which younger persons seemed to be more in favor of service improvement and expansion

⁵⁰Ibid., p. 89.

than older persons. For example, it was found in the Bollens study that younger persons were less satisfied with schools; and in the Wisconsin study, younger persons were more in favor of expanding mental health and adult education. It was found in the Frederickson study, however, that older persons were more in favor of improving police services than were younger persons. Again, these findings suggest that although younger persons may be more generally in favor of service improvement, it depends somewhat on the service in question.

As a fourth possible relationship, the Wisconsin study indicated that women were generally more in favor of service improvement or expansion. It was found, for example, that women generally favored expansion of health, mental health, police protection, and adult education more than men.

Little research seems to have been done in comparing citizens' opinions with public officials' opinions on services. In the research that has been done, leaders were found to be generally more satisfied with services, and that priorities for improving services differed between these groups.

Summary and Implications of the Literature for Further Research

From this review of literature, it was found that services in rural areas were considered to be generally inferior to those in urban areas, and that local public officials' efforts to improve services are important for the social and economic development of rural places. Although there are limitations to using public opinion in decisions for improving the adequacy of services to rural residents, local public officials can improve their decision making by having a better understanding of citizens' opinion.

Although the review of literature revealed some general types of services that were problems in communities (e.g., education, transportation), little information was available on specific kinds of services (e.g., high schools, roads) that were felt to be problems and thus possible barriers to local development. In addition, little information was found on how rural residents, as a group, viewed the adequacy of specific services. Also, little information was found on socio-economic characteristics most closely associated with people's dissatisfaction with services as well as differences between the views of the public and local officials on service satisfaction. Finally, assuming that those who had used services would have a more informed opinion about the adequacy of the service, no research was found that provided insights of users' (i.e., consumers) satisfactions with community services.

CHAPTER III

RESEARCH DESIGN AND DATA COLLECTION

Research Design

Introduction

It is clear from the review of background literature that little is understood about people's opinions of service adequacy as a basis for obtaining insights on community services in rural areas of the United States. Therefore, this study must necessarily be exploratory in nature. No hypotheses were formulated, but given the lack of information as noted in the conclusion of the previous chapter, the following four objectives were established to guide this research effort.

Research Objectives

1. To determine consumer and local public officials' satisfaction with selected community services.
2. To identify reasons consumers and local public officials were dissatisfied with selected community services.
3. To identify socio-economic characteristics most closely associated with consumers' dissatisfaction of selected community services.
4. To determine the differences between consumers and local public officials' dissatisfaction with selected community services.

For a more complete understanding of the study and its design, a definition of several terms used in this research is important.

Definition of Terms

Community Service Opinions

Community service opinions refers to the respondent's judgement about the adequacy of a given community service for meeting their individual or family need.

Service Consumers

Service consumers refer to those individuals who had used a community service included in this study. Respondent's opinions were included in this study only if the respondent or the respondent's immediate family (i.e., spouse, children, brothers, sisters, parents, or grandparents) had used the service. It was assumed in this study that those who had used the community service would have a more informed opinion on the adequacy of the service than those who had little or no contact with the service.

Local Public Officials

For the purposes of this study, local public officials are defined as those individuals representing all levels of local government who deal with questions of public policy in helping to provide community services: they appropriate and/or allocate public tax money, and help establish local ordinances or laws in the provision of community services. On the basis of this definition, the local public officials included in this study were county commissioners, city mayors and clerks, township supervisors and clerks, and village presidents and clerks in each of the three counties.

Community Services

Community services refer to community programs that are necessary for meeting the social or economic needs of people. The services selected for inclusion in this study are characterized as being generally supported by public tax money and/or regulated by governmental units for the welfare of service consumers.

The community services were selected on the basis of a reconnaissance survey of the study area in which key informants (i.e., individuals influential in guiding local development) were asked which community services were most relevant and important to their development concerns. Key informants included County Commissioners and Cooperative Extension Directors in each of the three counties, members of the Huron and Tuscola Interagency Service Councils, staff and board members of the Thumb Area Human Development Commission, and staff members of the East Central Planning and Development Regional Commission.

The terms "community services" and "services" will be used interchangeably throughout this study.

On the basis of the reconnaissance survey, the services selected for this study are divided into several major service categories each having a number of specific services. They are as follows:

Education Services--preschools, elementary schools, high schools, vocational schools, community colleges, adult education in high schools, adult education in community colleges, cooperative extension, and public libraries.

Health Services--general hospital services, hospital emergency room services, ambulance services, nursing, doctors, dentists, immunization, maternal and child health care, mental health, family planning, and home health nursing.

Recreation Services--picnic areas, camping areas, swimming facilities, school recreation facilities for use by whole community, organized recreation for youth, organized adult recreation programs, and organized recreation for senior citizens.

Public Safety Services--fire protection, police protection, courts, and juvenile correction.

Transportation Services--school bus, scheduled airline service, commercial trucking, road plowing, condition of local roads, condition of county roads, condition of state highways, the condition of bridges, bus service between towns, and freight rail service.

Public Works Services--garbage disposal services, sanitary landfills, public water, and public sewers.

Special Services--training/education for rehabilitation of physically handicapped adults, job training for low income adults, special care for the retarded, child day care services, family counseling for financial problems, family counseling for personal problems, financial aid to low income families, housing facilities for the elderly, housing facilities for low income families, legal services for low income families, and provision of food service to the elderly.

Service Adequacy

Service adequacy is defined as a respondent's satisfaction with (1) the amount of the service in the area; (2) the availability and accessibility of the service; and (3) the quality of the service.

Location and Dates of the Study

The study was conducted in Huron, Tuscola, and Sanilac Counties. These are three contiguous, largely rural, and somewhat isolated counties

that have limited social and economic development. The counties are located in Michigan's "Thumb Area" (see Figure 1). Since the study area is often identified by Michigan residents as the "Thumb Area," the expressions "Thumb Area" and "study area" will be used interchangeably throughout this dissertation. This area will be discussed in further detail in the following chapter.

Planning for the study began in January 1973. The data were gathered in the spring of 1974 and data analysis was completed in the winter of 1975.

Design of the Survey Instrument

A mail questionnaire was used in this study for surveying the opinions of service consumers and local public officials. The same questionnaire was used for both groups so that the responses from these groups could be compared accurately.

For gathering data in this study, three general question areas were selected.¹

The first general question area contained a number of community services in which the respondent was asked whether the services in each of the following seven major service categories were adequate for meeting their individual or family needs: education, health, recreation, public safety, transportation, public works, and special services. For a listing of the specific services surveyed, see pages 35 and 36. Either

¹This survey instrument was also designed to gather data for several other purposes in addition to the objectives of this study. There are additional question areas in the instrument, therefore, that are not germane to this study. These additional questions are questions eight through fourteen on the survey instrument (see Appendix A).

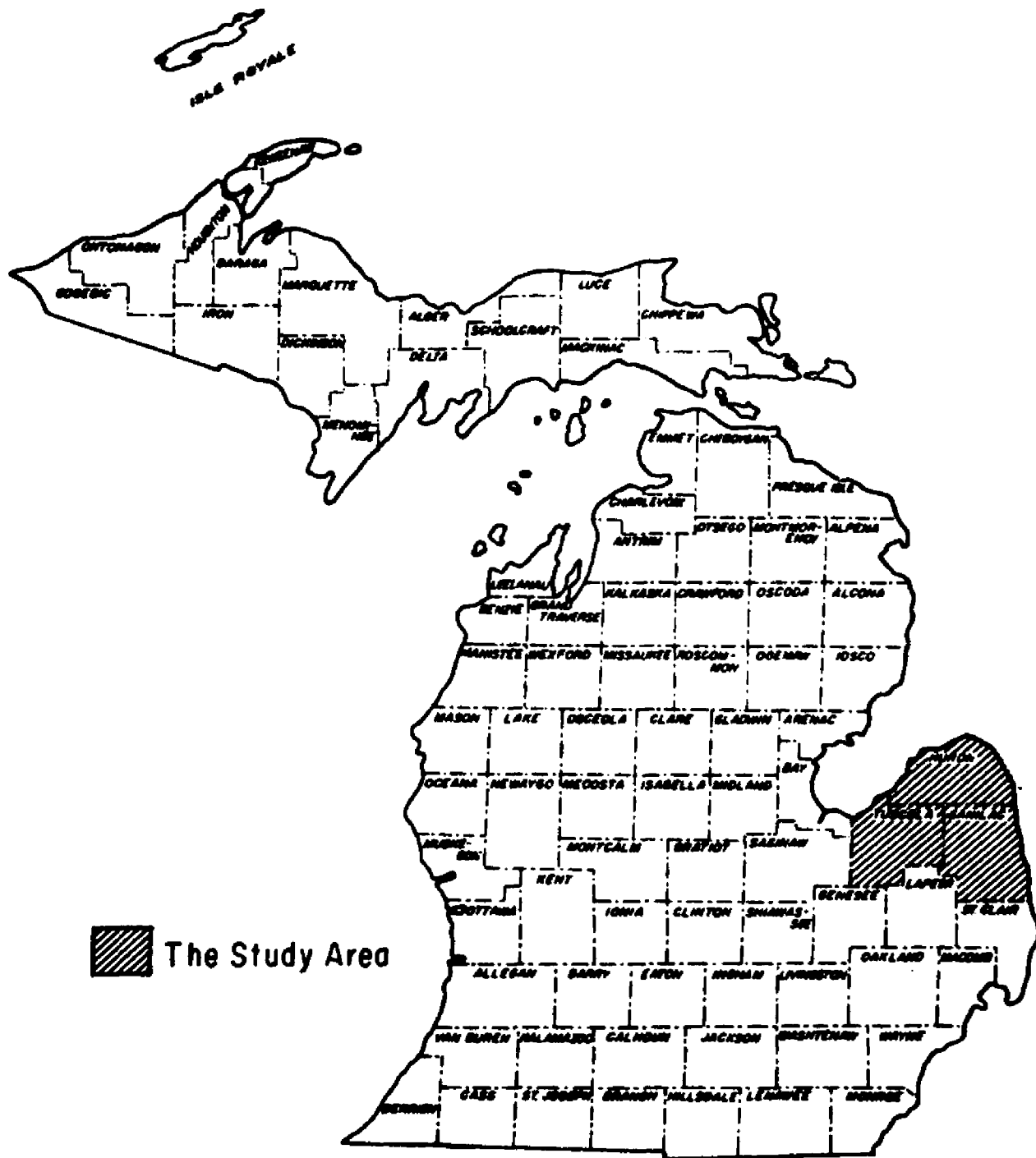


Figure 1. Map of Michigan Showing the Study Area.

"yes" or "no" responses were given for those community services that the respondent or the respondent's immediate family (i.e., spouse, children, brothers and sisters, parents, and grandparents) had used.

The specific question areas covered in the survey instrument were determined on the basis of the information needs of the Human Development Commission as sponsor of a research project upon which this study is based. The purpose of that research project was to determine public opinion on questions related to the development of community services for serving the needs of people in Huron, Tuscola, and Sanilac Counties in Michigan. For determining the specific questions to be included in the survey instrument, meetings were held with individuals who serve the community service needs of Thumb Area residents. These individuals included the staff and governing board of the Thumb Area Human Development Commission, County Commissioners and Cooperative Extension Directors in each of the three counties, members of the Huron and Tuscola Interagency Service Councils, and staff members of the East Central Planning and Development Regional Commission.

In addition to these meetings, meetings were also held with Michigan State University personnel related to some of the technical considerations of survey instrument construction such as the selection of wording, the selection of independent variables to be used, format considerations, and pretesting.

The second major question area in the survey instrument consisted of an open-ended question after each major service category where respondents were asked their suggestions for improving those community services they felt to be inadequate.

The final major question area in the survey instrument sought information on the following variables: county residence, age, length

of residence, occupation, living area location, sex, marital status, familial status, income, and education.

Pretest of the Survey Instrument

The survey instrument was pretested in Gratiot County, an area located approximately 80 miles southwest of the study area. This area was selected because the demographic and socio-economic characteristics were similar to the study area. Based on the pretest, the following changes in the survey instrument were made.

1. Questions which were unclear were reworded. For example, when the question was asked, "Is the service adequate?", it was unclear whether the respondent was to judge service adequacy for meeting his or his needs, or for meeting the needs of others in the area. The question was clarified by indicating that the respondent was to judge service adequacy in terms of meeting his or her individual or family needs.

2. Instructions for answering the survey instrument were clarified.

3. It was also decided that space should be designated on the survey instrument for coding the data. This helped facilitate coding and key punching accuracy.

Data Collection

Sampling Methods

In the selection of the sample of consumers in the three counties, a systematic random sample of households was drawn from telephone directories of the area. Telephone directories were used for two reasons: first, they were more available and accessible than other kinds of listings; second it was felt that a greater proportion of lower income people

would be listed in the telephone directory than in other available sources such as registered voter or property owner lists.

Fortunately, for selecting the names of local public officials in the area, an up-to-date listing of individuals defined in this study as local public officials (see pages 34-35) was available from the East Central Michigan Regional Planning and Development Commission located in Essexville.

Collection Procedures

A formula for calculating the confidence intervals for dichotomous variables was used for estimating the necessary number of responses from each county. (See Appendix C for the formula used and determination of sample size for each county.) This formula was used because most questions in the survey instrument were dichotomous (yes/no questions), and no estimate of the variability of people's opinions in the population was available that would permit the use of an alternative formula. The calculated sample size for each county, based on a ± 5 percent confidence interval and a significance level of $\alpha = .10$, was as follows: Huron County = 265; Tuscola County = 266; and Sanilac County = 265. In order to get the required number of returns from each county, with an estimated return rate of 25%, the required sample sizes were multiplied by a factor of four for a total required sample size of about 3,200 for the three county area. Although using this formula assumed a 100% response for each question, budget limitations precluded the mailing of additional questionnaires. Enclosed with each questionnaire was a cover letter (see Appendix A) explaining the purpose of the survey and a post paid return envelope.

In attempting to achieve a large number of responses for each community service, two follow-up mailings were undertaken. For the first

follow-up mailing, a reminder post card (see Appendix A) was sent after several weeks to all respondents. The second follow-up mailing included another cover letter, copy of the questionnaire, and post paid envelope, and was sent to nonrespondents after a period of about seven weeks. Returns from the second follow-up mailing ceased after three weeks; consequently, the cut off date for accepting returned questionnaires was approximately ten weeks from the first mailing.

Data Analysis

In fulfilling the first study objective, the opinions of consumers and local public officials on the adequacy of community services were identified. The opinions of consumers were tabulated for the study area as a whole and for each of the individual counties. The opinions of local public officials were tabulated for just the study area as a whole (the number of local public official respondents was insufficient for a county breakdown). Identifying consumers and local public officials' overall opinions on service adequacy was done to determine those services that both groups felt were most and least adequate.

Confidence limits were calculated on the overall responses of both consumers and officials to determine the degree of probable error in the data (see Appendix B). Based upon these calculations, it was found that the response levels for some services were not sufficient for drawing inferences at a $\alpha = .10$. It was decided that if the confidence limits or degree of probable error was too great and could change the direction of opinion distribution for a given community service, the results for that service would not be accepted as reliable. Although all results are reported, the analysis and discussion of the findings will focus only upon those results that were found to be statistically reliable.

The focus of the analysis on the remaining study objectives were on the two services in each major service category that consumers as a group viewed least adequate.

The second study objective--that of determining reasons users (i.e., consumers and officials) were dissatisfied with services--was undertaken by examining the responses to the open-ended questions concerning suggested improvements.

In identifying the socio-economic characteristics most closely associated with consumers' dissatisfaction of community services--the third study objective--the following socio-economic variables were used in the analysis: county residence, living area location (i.e., urban, rural non-farm, and farm), age length of residence, occupation, sex, marital status, familial status, income, and education.

Chi Square was the statistical test used for determining statistical differences among the variables. Chi Square is defined as

...a general test that can be used ...to evaluate whether or not frequencies which have been empirically obtained differ significantly from those that would be expected under a certain set of theoretical assumptions.²

In more easily understood terms, using the technique of Chi Square analysis helps to determine the probability of there being an actual difference among variables as opposed to a difference produced by random change.

This statistical technique was selected for two reasons. First, since the purpose of the data analysis was to determine whether frequencies among selected variables differed significantly; this, as indicated in the definition, is the appropriate method to use. Also, Chi

²Hubert M. Blalock, Social Statistics, (New York: McGraw-Hill Book Company, 1960), p. 276.

Square is the appropriate method when nominal variables are used in the survey instrument as is the case in this study.

The significance level chosen for the Chi Square test was $\alpha = .10$. This significance level means that there is a 90% chance that an actual difference among two variables exists and did not occur by chance. The value of $\alpha = .10$ is considered to be an acceptable level of probable risk in social science research, particularly in an exploratory study such as this.

The final objective of the study involved a comparison of the overall opinions of consumers and local public officials. Chi Square analysis was also used in undertaking this objective as well.

Data Processing

The data on the questionnaires were coded, key punched onto data cards, and then transferred onto magnetic tape for analysis. The computer analysis was done by using the Computer Institute for Social Science Research (CISSR) program package at Michigan State University.

The response frequency and percentage distributions were analyzed by using the CISSR Percent-Frequency (P-F) Count program.³ This analysis included the tabulations of service consumer and local public official's opinions on the adequacy of community services and background characteristics of the respondents.

Chi Square analysis that identified statistically significant differences of opinions among selected variables was generated by using the CISSR Analysis of Contingency Table (ACT) program.⁴

³Leighton A. Price and William P. O'Hare, "Percentage and Frequency Distribution (PFCOUNT)," Technical Report 72-6, Computer Institute for Social Science Research, Michigan State University, June 28, 1972.

⁴Price and O'Hare, "Analysis of Contingency Tables (ACT),"

The following chapter describes in detail socio-economic characteristics of the study area and community services found in the area. This information is intended to help the reader better understand the general community within which this study was undertaken.

CHAPTER IV

THE STUDY AREA: SOCIO-ECONOMIC CHARACTERISTICS AND COMMUNITY SERVICE BACKGROUND INFORMATION

As a basis for understanding the study area, an analysis of socio-economic data for Huron, Tuscola, and Sanilac Counties and a comparison with the Michigan totals are included. This comparison helps provide insights into the area's social and economic conditions as well as levels of service adequacy in the study area. (The reader should note that "state average" data reflects, in large part, the more urban characteristics of the state. A comparison of data between the study area counties and the state, therefore, reflects in large measure urban-rural differences.)

Secondary information was also available for community services that were included in this study. This information will be the focus of discussion in the last half of this chapter. Secondary information that assessed community service conditions in the study area was limited and the information was available for only a small number of services included in this study. Nevertheless, this information can be of further help to local public officials in identifying community service improvement opportunities, and it also provides a basis for corroborating the survey results in the last section of Chapter VI.

Socio-economic Characteristics of the Study Area

When compared to the state, the three counties in the Thumb Area have several distinct socio-economic characteristics which have implications concerning levels of community service adequacy.

The three counties have a significantly larger rural population than the state. Each county has about three times as many people located in rural areas when compared to the state, and Sanilac County has no center of population over 2,500 people. Thus, Thumb Area residents may encounter service problems associated with living in rural areas such as a low supporting tax base for providing adequate service levels or the distance and cost necessary for obtaining a needed service. Table 1 details the urban-rural population distribution for the three counties and the state.

The three counties in the study area have also had a significantly lower net in-migration than the state between 1960-1970. Actually, Huron County had a net out-migration of 3,005 people in this period. The data, therefore, do not reflect population gains that would suggest a dynamic and growing economy. Details on net migration are provided in Table 2.

In addition, there are proportionately fewer working-age males and females (between 20-44 years) in each of the three Thumb Area counties when compared to the state. Although the proportion of males and females ages 5-19 in the study area is comparable to the state, there is a much higher proportion of males and females 65 years old and older in the three counties. With the relatively low proportion of working age persons and a high proportion of older retired persons, Thumb Area leaders may find it difficult to generate needed revenues to pay for the rising cost

Table 1.--Urban-Rural Population Distribution; Michigan and Huron, Sanilac, and Tuscola Counties, 1970.

Location	Population	Population Distribution					
		Over 2,500	%	1,000-2,500	%	Other	%
Michigan	8,875,083	6,553,773	73.8	247,370	2.8	2,073,940	23.3
Huron County	34,083	2,999	8.9	5,361	15.7	25,732	75.5
Sanilac County	34,899	0		6,873	19.7	28,016	80.3
Tuscola Co.	48,603	6,503	13.4	4,123	8.5	37,977	78.1

SOURCE: Michigan County and Regional Fact Book-Region VII, (East Lansing: Michigan State University, 1972), p. 13.

Table 2.--Births, Deaths, and Net Migration; Michigan and Huron, Sanilac, and Tuscola Counties, 1960-1970.

Location	1970 Population	Births	Deaths	Net Migration
Michigan	8,875,083	1,744,477	727,072	34,484
Huron County	34,083	6,955	3,873	-3,005
Sanilac County	35,181	6,669	4,034	232
Tuscola County	48,603	9,326	4,663	735

SOURCE: Michigan County and Regional Fact Book-Region VII, (East Lansing: Michigan State University, 1972), p. 12.

of services, particularly from older persons on fixed incomes. In addition, Thumb Area public officials may find it difficult to gain political support from an older population for bond referendums that provide, for example, elementary or high school improvements. Table 3 details population distribution information by sex and age for the study area and the state.

Family income characteristics for the Thumb Area in contrast to state wide data also reflect a general inability of local residents to pay for the rising cost of services. There is a larger percentage of families in all three counties below the poverty level when compared to the state. The percentage of families below poverty level in Huron and Sanilac Counties particularly, is comparatively high. Table 4 details this information.

For a general picture of the study area, a comparison of major income sources shows a predominance of earnings in agriculture and manufacturing, particularly in Huron and Sanilac Counties. Manufacturing and government provide the largest percentage of earnings for Tuscola County residents.

With respect to manufacturing, there are a number of small firms in the area, many of which are automotive types of businesses (e.g., tool and die, metal stamping). There are also mobile home and camper trailer firms located in Marlette and Brown City, Sanilac County, Michigan. Sugar beets and beans are the major agricultural crops produced in the three counties, and Michigan Sugar, a large sugar manufacturing company, is located in Huron County. Table 5 details information on total earnings by major sources for the state and each of the three counties.

Table 3.--Population Distribution by Sex and Age; Michigan and Huron, Sanilac, and Tuscola Counties, 1970.

Location	Population	% Under 5 Years	% 5-9 Years	% 19-19 Years	% 20-44 Years	% 45-64 Years	% 65+ Years
Michigan							
Male	4,348,648	9.4	10.8	21.5	31.1	19.6	7.5
Female	4,526,435	8.7	10.0	20.4	31.7	19.9	9.4
Huron County							
Male	16,836	9.1	10.4	22.3	24.9	21.6	11.8
Female	17,247	8.7	10.2	20.6	25.4	21.6	13.7
Sanilac County							
Male	17,274	9.1	11.4	21.8	25.7	20.6	11.4
Female	17,615	8.9	10.2	20.8	26.9	20.7	12.5
Tuscola County							
Male	24,055	9.8	11.9	22.3	29.1	19.0	7.9
Female	24,548	9.3	11.3	20.6	30.2	18.7	10.0

SOURCE: Michigan County and Regional Fact Book-Region VII, (East Lansing: Michigan State University, 1972), p. 14.

Table 4.--Selected Family Characteristics for Michigan and Huron, Sanilac, and Tuscola Counties, 1969.

Item	Michigan	Huron County	Sanilac County	Tuscola County
Total No. of Families	2,190,269	8,666	8,965	11,658
% of Families Below Poverty Level	7.3	15.0	11.5	8.8

SOURCE: Michigan County and Regional Fact Book-Region VII, (East Lansing: Michigan State University, 1972), p. 16.

Table 5.--Total Earnings by Major Sources; Michigan and Huron, Sanilac, and Tuscola Counties, 1969.

Item	Michigan	Huron County	Sanilac County	Tuscola County
Total Earnings (\$000)	29,607,631	71,165	75,585	80,889
Distribution of Total Earnings by Percent (%)				
Farm	1.1	21.5	20.3	11.2
Government	12.0	16.9	12.5	24.7
Manufacturing	45.4	23.1	39.1	26.2
Mining	.1	-	-	-
Contract Construction	5.7	3.8	3.2	3.8
Transportation, Communication, & Public Utilities	4.9	6.6	1.2	4.5
Wholesale & Retail Trade	13.9	15.9	12.4	18.4
Finance, Insurance & Real Estate	3.2	-	1.4	-
Services	12.2	9.0	8.8	8.8
Other	.2	.9	1.1	.7

SOURCE: Michigan County and Regional Fact Book-Region VII, (East Lansing: Michigan State University, 1972), p. 48.

Community Service Background Information

The following background information provided in this section offers additional insights into conditions of community services included in this study. The information includes: (1) per capita county expenditures for education, highways, hospitals, health, police protection, fire protection, sewer, sanitation (other than sewer), corrections, and libraries for the three counties in the study area and the state; (2) an inventory and assessment of library facilities in Huron, Tuscola, and Sanilac Counties; (3) an inventory and assessment of general care hospital beds for Huron, Tuscola, and Sanilac Counties in relation to recommended federal standards; (4) an inventory of medical staff personnel for the area and a comparison of the numbers of doctors, nurses and dentists per 1,000 population among the counties and the state; (5) an inventory and assessment of fire protection service for Huron and Tuscola Counties in accordance with the standards of the American Insurance Association; and (6) an inventory and general assessment of sanitary landfill facilities for Huron and Tuscola Counties.

Per Capita County Expenditures

According to the latest available data, the 1971-1972 per capita expenditures for many community services in Huron, Tuscola, and Sanilac Counties were below the state per capita expenditures for those same services. The state per capita expenditures for health, police protection, fire protection, sanitation (other than sewage), corrections, and libraries were, in most cases, four times greater than the amounts of the three counties spent for those same services.

It was revealed in the data that the per capita expenditures in Michigan for health was \$12.28 compared to \$3.11 in Huron County, \$3.68

in Tuscola County, and \$3.44 in Sanilac County. Michigan expenditure for police protection was \$31.22 per person compared to \$13.02 in Huron County, \$10.29 in Tuscola County, and \$11.80 in Sanilac County. Similarly for fire protection, the state per capita expenditure was markedly higher with \$11.88 compared to only \$2.23 in Huron County, \$2.82 in Tuscola County, and \$.82 in Sanilac County. For sanitation, Michigan had an average expenditure of \$7.47 per person compared to \$1.24, \$1.94, and \$.15 for Huron, Tuscola and Sanilac Counties respectively. Michigan also had a per capita expenditure of \$9.14 for corrections compared to a per capita expenditure of \$.13 in Huron County, \$.66 in Tuscola County, and \$.45 in Sanilac County. For library services, Michigan had a per capita expenditure of \$3.40 compared to \$.90 in Huron County, \$2.68 in Tuscola County, and \$.46 in Sanilac County.

Data for education, highways, and hospitals were not complete. The available data, however, revealed that the per capita expenditure in Michigan for education construction was higher with \$269.71 than Huron County (\$168.11) or Tuscola County (\$246.21). Sanilac County had a slightly higher per capita expenditures (\$295.38) compared to the state. Data for education operating expenses were not available for the state.

The larger per capita expenditures for the state in contrast to each of the three predominately rural counties may be due, in part, to the service requirements of people in the more urban areas of the state. A higher incidence of crime in Detroit, for example, would warrant higher per capita expenditures for police protection. Also, higher and costlier buildings, sanitation requirements, larger prisons, and university library facilities in the more urban areas of Michigan would account, in large part, for greater capital outlays in fire, sanitation, corrections, and library services for the state as a whole.

Although one can not make any definite conclusions about the adequacy of these Thumb Area services on the basis of these data, a lower level of per capita expenditure may suggest fewer resources for upgrading services by acquiring new technology, for example, or qualified staff. Table 6 details the per capita county expenditures for the state and for Huron, Tuscola, and Sanilac Counties.

Library Services

In reviewing the background information related to the adequacy of library services for Huron and Tuscola Counties, the American Library Association suggests the following guidelines for establishing adequate library facilities.¹

Library sites should be centrally located with respect to the population served. Libraries should be located on or near major thoroughfares and at the focal point of several residential units to be served. Also, most authorities agree that libraries should be centrally located in or near commercial areas and shopping centers in order to promote library usage. A primary service radius of one to two miles should be provided for library facilities within densely populated areas, with a secondary radius of five miles for areas outside the primary area.

For estimating space requirements for library facilities, the American Library Association recommends a standard of 0.7 square feet of building area per capita of total population served. In addition, the A.L.A. standard requires a minimum book collection of 10,000 volumes.

Currently, in Huron County, there are six public libraries located at Harbor Beach, Uby, Bad Axe, Sebawaing, Port Austin and Pigeon.

¹Villican-Leman and Assoc., General Development Plan, Huron County Michigan, (Detroit, Michigan, June 1973), p. 53.

Table 6.--County Area Per Capita Government Expenditures, by Function; Michigan and Huron, Sanilac, and Tuscola Counties, 1971-1972.

Service	Michigan	Huron County	Tuscola County	Sanilac County
Education				
Construction ^a	\$269.71	\$168.11	\$246.21	\$295.38
Operating	N/A	166.04	238.60	217.05
Highways				
Construction	N/A	87.27	83.43	79.42
Operating	N/A	36.11	30.11	37.51
Health	12.28	3.11	3.68	3.44
Police Protection	31.22	13.02	10.29	11.80
Fire Protection	11.88	2.23	2.82	.82
Sewer	34.88	11.62	32.92	51.78
Sanitation	7.47	1.24	1.94	.15
Corrections	9.14	.13	.66	.45
Libraries	3.40	.90	2.68	.46

SOURCE: Census of Governments, 1972, Vol. 4, #5, Compendium of Government Finances, Table 53.

^aThis figure excludes per capita costs for higher education.

In applying the above standards to the library facilities in Huron County, the following assessment was made by a study group.

At the present, most of the existing libraries would not meet these standards. However, improvements in the way of new additions and new facilities are planned for or are being constructed to alleviate some of the space problems confronting several of the existing libraries.²

Tuscola County has eight libraries located in Caro, Cass City, Fairgrove, Fostoria, Mayville, Millington, Unionville, and Vassar. In terms of the adequacy of these library facilities, it was found that

Five of the eight existing libraries are adequate for the present needs of that village and/or township. However, most of the libraries, with the exception of those libraries in Cass City, Fairgrove and Mayville are confronted with space problems in terms of reading space and shelving space. Lack of shelving space accounts for the inadequate number of books available for most of the libraries. Apart from the building or room itself, most of the libraries do not provide enough space for parking and future additions, when necessary.³

Comparable library information for Sanilac County was not available; however, in a rating of poor, fair, and excellent by another study group on library facilities, the location and general condition of library facilities in Croswell, Lexington, and Sanilac Township were rated as excellent. The Brown City Library was rated as good.⁴

General Care Hospital Beds

In reviewing the health information related to bed care facilities, it is recommended by national health standards that a community or

²Ibid.

³Vilican-Leman and Assoc., General Development Plan, Tuscola County, Michigan, (Detroit, Michigan, June 1974), p. 52.

⁴East Central Michigan Planning and Development Commission, Community Facilities of Sanilac County, Report #3, March 1974, p. 35.

regional hospital should have from three to four general care beds per 1,000 population in the service area.⁵ Based upon this standard, an assessment of general care bed facilities for each county is as follows.

Currently, there are three hospitals in Huron County: Harbor Beach Community Hospital in Harbor Beach, Huron Memorial Hospital west of Bad Axe, and the Scheurer Hospital in Pigeon. Based on the above criteria, the county should have 102 to 136 general care hospital beds based on a population of 34,083 (1970 census). The number of available beds in the three hospitals is 146; therefore, the short range demand for bed space appears to be adequate.

Tuscola County has the Caro Community Hospital in Caro, Michigan and the Hill and Dale General Hospital in Cass City. Between the two hospitals, there are 117 beds for patient use. In addition to hospital bed space, there are 166 additional beds available in Tuscola County's three nursing homes. A study on the adequacy of bed space indicates that given the current situation, the available bed space appears adequate for serving Tuscola County residents.⁶

Sanilac County has three hospitals for serving the needs of its residents: the McKenzie Memorial Hospital in Sandusky, the Marlette Community Hospital in Marlette, and the Deckerville Hospital in Deckerville. Total number of beds for the three hospitals is 149 which, according to the above standard, is sufficient for the current population of the county.

⁵ Villican-Leman and Assoc., General Development Plan, Huron County, Michigan, p. 47.

⁶ Villican-Leman and Assoc., General Development Plan, Tuscola County, Michigan, p. 45.

Doctor, Nursing and Dentist Services

Additional background information related to this study include an inventory of doctors, nurses, and dentists in the study area and a comparison of the per capita numbers of these personnel among the counties and the state.

Tuscola County has the greatest number of doctors with thirty-two followed by Huron and Sanilac Counties with thirty-one and twenty-three doctors respectively. Tuscola County also has the greatest number of total nurses (333) followed by Huron (286) and Sanilac (255). The number of dentists among the three counties are fairly evenly distributed with Tuscola County also having the largest number of dentists (15) followed by Huron and Sanilac Counties with 14 and 13 respectively. Table 7 details this information.

Table 7.--Medical Personnel: Distribution of Physicians, Nurses, and Dentists; Michigan and Huron, Sanilac, and Tuscola Counties, 1976.

Area	Physicians (MD & DO)	Nurses (RN & LPN)	Dentists
Michigan	13,593	75,209	4,684
Huron County	31	286	14
Tuscola County	32	333	15
Sanilac County	23	255	13

SOURCE: Michigan Medical Society, telephone interview with John Anthony, Director of the Bureau of Research, East Lansing, Michigan, March 1976.

Additional information for understanding health care levels in terms of doctor, nursing, and dentist services for residents in the three county study area can be seen by reviewing information on per capita numbers of these health care personnel.

Although Tuscola County has a greater number of doctors, nurses, and dentists than the other two counties, it has fewer doctors per person (1:1519) than Huron County (1:1097), fewer nurses per person (1:146) than either Huron (1:119) or Sanilac (1:138) Counties, and fewer dentists per person (1:3240) than Huron (1:2434) or Sanilac (1:2706) Counties. Of the three counties, Huron County has the greatest number of doctors, nurses, and dentists per person.

A significant finding of these data, however, is that all three counties have markedly fewer doctors per person than either the recommended standard of 1:650⁷ or the state average of 1:653. Similarly, all three counties have fewer dentists per person than the state average of 1:1895 (a recommended per capita standard for dentist services was not available). With respect to the number of nurses per person, however, the ratios in the three counties are comparable to the state as a whole (1:118). Table 8 reflects the per capita distribution of doctors, nurses, and dentists for the study area and the state.

Table 8.--Medical Personnel: Ratio of Physicians, Nurses, and Dentists Per Person; Michigan and Huron, Sanilac, and Tuscola Counties, 1976.

Area	Physicians (MD & DO)	Nurses (RN & LPN)	Dentists
Michigan	1:653	1:118	1:1895
Huron County	1:1097	1:119	1:2434
Tuscola County	1:1519	1:146	1:3240
Sanilac County	1:1530	1:138	1:2706

SOURCE: Michigan Medical Society, telephone interview with John Anthony, Director of the Bureau of Research, East Lansing, Michigan, March 1976.

⁷ Michigan Medical Society, telephone interview with John Anthony, Director of the Bureau of Research, East Lansing, Michigan, March 1976.

Fire Protection Services

Fire protection services for Huron and Tuscola Counties were analyzed by a study group in relation to the fire protection standards established by the American Insurance Association. The AIA established response standards based on the type of development served, access to the area, and type of station facility. For recommended response distances, the optimum recommended fire protection radius for high value property is one and one-half miles; the radius is up to two miles for scattered development. Table 9 details this information.

Table 9.--Recommended Response Distances for Fire Protection, 1965.

Type of District	Optimum Service Radius in Miles
High Value Protection Commercial, Industrial, Institutional	0 - 1½
Developed Residential Areas Residential and Commercial	1½ - 2
Scattered Development Residential	2 - 5

SOURCE: American Insurance Association, Bulletin No. 315, January 1965; and Michigan Inspection Bureau.

In evaluating the fire services in Huron County based upon criteria established by the American Insurance Association, the study group indicates that a number of farm and rural non-farm areas are not located within the optimum fire protection boundaries. The towns and villages, on the other hand, are much more adequately covered.

The study group also assessed Huron County fire equipment and personnel as follows:

An evaluation of the existing fire stations, which would include having adequate facilities for storing their equipment, sufficient number of firemen and pieces of fire fighting equipment, suggests that Huron County's fire protection needs are sufficiently met. Most of the facilities are adequate for the present and short-range future needs for the respective areas served.⁸

Tuscola County has thirteen existing fire stations for serving resident needs all of which are served by volunteer personnel. It was also found that many farm and non-farm residents are outside minimum recommended fire protection boundaries. The urban areas are much more adequately covered. An assessment on the general adequacy of Tuscola fire facilities was as follows:

An evaluation of the existing fire stations, which would include having adequate facilities for storing their equipment, sufficient number of firemen and pieces of fire fighting equipment, suggests that Tuscola County's fire protection needs are sufficiently met.⁹

Sanitary Landfill Facilities

An inventory and general assessment of landfill facilities were made for Huron and Tuscola Counties.

In Huron County, there are twenty-three disposal sites, three of which are privately owned and twenty are township operated. According to a study undertaken of sanitary landfill facilities in Huron County, the county

...is confronted with a severe problem in terms of locating suitable landfill sites due to a perched water table which predominates throughout the county. Further the majority of the existing sites are not licensed disposal sites and are operated for the most part as open dumps. If they were to continue to operate in this manner, not only will they become "eyesores" but more importantly nuisances and health hazards to the people of Huron County.¹⁰

⁸Villican-Leman Assoc., General Development Plan, Huron County, Michigan, p. 56.

⁹Villican-Leman Assoc., General Development Plan, Tuscola County, Michigan, p. 55.

¹⁰Villican-Leman Assoc., General Development Plan, Huron County,

Tuscola County has twenty-five existing disposal sites, two of which are privately owned with the remaining sites village or township operated. It was also found that Tuscola County has a high water table and that, for the most part, the existing sites are not licensed, and are operated primarily as open dumps.

Although no positive steps were suggested by the study group for improving sanitary land fill facilities for Huron or Tuscola Counties, they indicated that all sanitary land fill facilities should meet the standards as set forth under the Michigan Waste Disposal Act.

Summarizing the socio-economic information on the study area, it was found that, in comparison with the state as a whole, the counties are largely rural with comparatively little in-migration. Sanilac County, in fact, has had an out-migration of people which does not suggest a dynamic and growing economy. Also, there is a much higher proportion of males and females 65 years old and older in the three counties and proportionately fewer working age persons in comparison to the state. In addition, there is a larger percentage of families in all three counties below the poverty level when compared to the state. With an older population on fixed incomes and a comparatively high proportion of persons below the poverty level, this information suggests that Thumb Area leaders may find it difficult to generate needed revenues to pay for the rising cost of services. In terms of major income sources, the data reveal a predominance of earnings in agriculture (sugar beets, beans, and dairy cattle), and manufacturing (automotive related).

The background information on community services reveals that the per capita expenditures in Huron, Tuscola, and Sanilac Counties were

markedly below state per capita expenditures for health, police protection, fire protection, sanitation, corrections, and library services. The greater per capita expenditures for Michigan may reflect a greater need in the more urban areas of the state for such services as prisons, fire and police equipment, and garbage disposal. This information may also suggest fewer resources in Huron, Tuscola, and Sanilac Counties for upgrading existing services.

Although libraries in all three counties were considered generally adequate, additional space for shelving, reading, and parking could be provided for some of the libraries. The information on bed care facilities for Huron, Tuscola, and Sanilac Counties revealed that, based on a recommended standard of three to four general care beds per 1,000 population, the bed space for all three counties appears to be adequate.

Although Tuscola County has the largest number of physicians, the county has fewer physicians per person compared with the other two counties. Huron County, on the other hand, has the greatest number of physicians, nurses, and dentists per person than all three counties. The most significant finding from the health data, however, is that all three counties have significantly fewer physicians per person than either the recommended standard of 1:650 or the state as a whole (1:653). Also, the three counties have fewer dentists per person than the state. The ratio of nurses per person for the state and study area was comparable.

It was found that in respect to fire services, many rural non-farm and farm areas were not located in the optimum fire protection radius as established by the American Insurance Association. Fire department personnel for Huron and Tuscola Counties, on the other hand, appeared to be adequate (comparable information was not available for Sanilac County).

In an assessment of sanitary land fill facilities for Huron and Tuscola Counties (comparable information was not available for Sanilac County), most of the sanitary land fill facilities are "eyesores," health hazards, and do not meet state statutory standards for licensing.

Although this background information on services relating to education, health, public safety, and public works does not give a complete picture of the opportunities for improving community services included in this study, it does help local public officials better understand potential consumer service needs. This information along with the survey findings in this study, will therefore serve as a basis for recommending community service improvements in Chapter VI.

The following chapter focuses on a detailed discussion of the research findings. It includes an overview of the respondent characteristics in the study area and their opinions concerning the adequacy of services for meeting their individual or family needs.

CHAPTER V

RESEARCH FINDINGS

Introduction

To meet the research objectives as set forth in Chapter III, this chapter provides a detailed discussion of research findings. Due to the large volume of data collected in this research, it is divided into four sections for clarity and convenience of reading.

The first section involves a brief report of survey returns from service consumers and local public officials.

The discussion in Section II focuses on the socio-economic characteristics of the service consumer and local public official respondents. A discussion of sample representativeness is included in this section.

The discussion in Section III of this Chapter focuses on a six-part analysis of the survey results for services within the major service categories of education, health, recreation, public safety, transportation, public works, and special services. A further description of the six-part study analysis is presented at the beginning of Section III.

The discussion in Section IV focuses on a comparison between actual conditions of services included in this study (as obtained in secondary sources) and consumer opinions for those same services. This comparison helps to corroborate these survey findings.

Section I Survey Completion Rates

Of the 3,300 service consumer households surveyed, 965 useable questionnaires were returned for a 29.2% return rate. There were also 86 non-useable questionnaires: many had less than a page filled in, some were returned with written refusals, and several were returned blank.

Local public officials had a higher return rate. Of the 300 local public officials surveyed, 145 useable questionnaires were returned for a 48.3% return rate. Two questionnaires from this group were not useable: both had less than a page filled in.

Section II Respondent Characteristics

The following description of respondent characteristics serve as background information on the sample of service consumers and local public officials. These characteristics, which constitute the independent variables used in this analysis, are as follows: county residence, age, length of residence, occupation, living area locations, sex, marital status, familial status, income, and education. The discussion of each respondent characteristic is presented in the same order as it appeared in the survey instrument (see Appendix A).

In addition to a description of the background characteristics of service consumers and local public officials, a comparison was made between these respondent groups and the population at large (according to census data), for the purpose of identifying sample bias. Comparable census information, however, was not available in every instance; thus, sample bias could not be determined for length of residence, living area location, familial status, and marital status.

Chi Square was the statistical technique used to determine if there were statistically significant differences (at $\alpha = .10$) between the characteristics of study group respondents and general population characteristics.

County Residence

The service consumer and local public official respondents were fairly evenly distributed among the three counties. Of the three counties, the largest percentage of returns from consumers came from those living in Tuscola County (35%) while Huron County had the largest proportion of local public official respondents (35%). No statistically significant difference was found in comparing the distribution of consumer respondents with the census and the distribution of local public officials with the census. The distribution of response among the counties is detailed in Table. 10.

Age

The largest proportion of service consumer and local public official response came from persons between the ages of fifty to fifty-nine. No statistically significant age differences (at $\alpha = .10$) were found between service consumers and the census. Local public officials, however, were found to differ significantly from the census in age. Generally speaking, the major source of this difference was the relative scarcity of younger local public officials (between 20-29) and the relatively large proportion of older public officials. These results would be expected since local public officials usually establish their positions at an older age. Table 11 gives a complete distribution of this variable.

Table 10.--Household Population Distribution of Study Respondent Groups by County Compared to Census of Population for Huron, Sanilac, and Tuscola Counties, 1974.

County	Study Respondent Groups				Census of Population	
	Consumers ^a		Local Public Officials ^b		N	% of Thumb Area Population
	N	%	N	%		
Huron	305	32.7	49	35.0	34,083	29.8
Sanilac	301	32.3	44	31.4	34,889	30.5
Tuscola	327	35.0	47	33.6	48,603	39.7
Total	933	100	140	100	117,575	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, Summary of General Characteristics, pp. 59-62.

^aStatistical significance was not found at the .10 probability level in comparing the distribution of consumers among the three counties with the census.

^bStatistical significance was not found at the .10 probability level in comparing the distribution of officials among the three counties with the census.

Table 11.--Age Distribution of Study Respondent Groups Compared to Census of Population for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Age	Study Respondent Groups				Census of Population	
	Consumers ^a		Local Public Officials ^b		N	% of Thumb Area Population
	N	%	N	%		
20 - 29	41	14.4	5	3.6	12,717	20.2
30 - 39	174	18.4	17	12.3	10,984	17.4
40 - 49	163	17.7	31	22.5	11,773	18.7
50 - 59	189	20.0	35	25.4	11,191	17.8
60 - 69	170	18.0	28	20.3	8,223	13.1
70+	109	11.5	22	15.9	8,033	12.8
Total	946	100	138	100	62,921	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, General Characteristics of the Rural Population for Counties, pp. 215-20.

^aStatistical significance was not found at the .10 probability level in comparing the distribution of consumers among age groups with the census.

^bStatistical significance was found at the .02 probability level in comparing the distribution of officials among age groups with the census.

Length of Residence

The largest proportion of service consumer respondents lived in their county from 10-29 years while the largest proportion of local public official respondents lived in their county 50-59 years. Census information was not available for comparison with the survey respondent groups.

The sample of local public officials tended to have lived in their county longer than the sample of service consumer respondents. The proportion of local public officials with forty or more years of residence was markedly higher than consumers while the proportion of service consumers with zero to thirty-nine years of residence was higher than local public officials. This finding is consistent with the previous findings on age where local public officials were also found to be older than the general population. Table 12 details the distribution of response for this variable.

Occupation

Among the various occupational groups, the largest proportion of service consumer respondents (almost 20%) held operative, labor, craftment, or factory related jobs. There was also a comparatively high proportion of consumers who were retired (18.5%) or were housewives (18.5%). The largest proportion of local public officials, on the other hand, held professional/technical jobs. Over 33% of the local public officials held this type of job (this finding was due to the fact that many local public officials who held full-time public service related jobs were classified as professional personnel). Table 13 details the distribution of occupation for the respondent groups.

**Table 12.--Length of Residence Distribution of Study Respondent Groups
for Huron, Sanilac, and Tuscola Counties Combined, 1974.**

Length of Residence (years)	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
0 - 9	197	20.9	14	10.1
10 - 29	260	27.6	25	18.1
30 - 39	126	13.4	11	8.0
40 - 49	130	13.8	23	16.7
50 - 59	112	11.8	29	21.0
60 - 69	69	7.5	22	15.9
70 - 79	38	4.0	14	10.2
80+	11	1.0	-	-
Total	943	100	138	100

Table 13.--Occupational Distribution of Study Respondent Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Occupations	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
Professional/government	114	12.3	44	33.3
Managers, administrators and self-employed	50	5.4	6	4.5
Sales/clerical	78	8.4	8	6.1
Operatives, laborers, craftsmen, factory workers	183	19.8	7	5.3
Farmers	93	10.1	36	27.3
Service workers	49	5.3	1	.76
Retired	171	18.5	11	8.3
Unemployed or handicapped	15	1.6	1	.76
Housewife	171	18.5	18	13.6
Total	924	100	132	100

To determine sample bias among occupational groups, it was necessary to have comparable information between respondents and the census population. Since census data did not have "retired," "unemployed/handicapped," or "housewife" classifications, it was necessary to recalculate the percentage distribution of respondents among the remaining occupational groups in order to compare respondents with the census population.

In a comparison of service consumers with the census, the differences in the distribution between service consumers and the census regarding occupation were found to be statistically significant. In examining the distribution of service consumers and people generally (according to census data) among the occupational groups, it was found that the proportion of service consumers holding professional-technical jobs was much higher than the Thumb Area population in general.

In comparing local public officials with the census, the differences between these two groups were also found to be statistically significant. The major source of this difference was a markedly higher proportion of local public officials holding professional-technical jobs than either the consumers or people generally. Table 14 details a comparison between respondents and census population regarding occupation.

Living Area Location

Among the service consumer respondents, the largest proportion of this group (43%) lived in an urban area (i.e., a city or village). The remaining proportion of service consumers were fairly evenly divided between farm (28%) and rural/non-farm living areas (29%).

In contrast, the largest proportion of local public officials lived on farms (52%). Also in contrast to consumers, the smallest

Table 14.--Occupational Distribution of Study Respondent Groups Compared to Census of Population for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Occupation	Study Respondent Groups					
	Consumers ^a		Local Public Officials ^b		Census of Population ^a	
	N	%	N	%	N	%
Professional/government	114	20.1	44	43.1	3,454	9.0
Managers, administrators and self-employed	50	8.8	6	5.8	2,264	5.9
Sales/clerical	78	13.7	8	7.8	5,718	14.9
Service	49	1	1	1.0	2,818	7.4
Farmers	93	16.5	36	35.3	4,260	11.1
Operatives, laborers, craftsmen, factory workers	183	32.3	7	6.9	19,823	51.7
Total	567	100	102	100	38,337	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, Occupation and Earnings for Counties, pp. 558-564.

^aStatistical significance was found at the .10 probability level in comparing the distribution of consumers among occupation groups with the census.

^bStatistical significance was found at the .05 probability level in comparing the distribution of officials among occupation groups with the census.

proportion of local public officials lived in urban areas. Comparable census information for this variable was not available. The distribution of consumer and local public official response is depicted in Table 15.

Table 15.--Living Area Location Distribution of Study Respondent Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Living Area Location	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
Urban (i.e., city or village)	406	43.0	56	40.3
Rural/non-farm	277	29.3	11	7.9
Farm	262	27.7	72	51.8
Total	945	100	139	100

Sex

Among consumers responding to the survey, there was a slightly greater proportion of male respondents (59%) than female respondents (41%).

Among the local public officials, a significantly larger number of males (71%) than females (29%) responded. This is likely the result of a greater number of males occupying public positions.

Differences in male-female distribution between service consumers and the total population as revealed by the census were not found to be statistically significant. Differences, however, in the male-female distribution between local public officials and people in general according to the census of population were found to be statistically significant.

There were a markedly higher proportion of males (71%) among local public officials than the census of population revealed (49%). The distribution of this variable is detailed in Table 16.

Table 16.--Sex Distribution of Study Respondent Groups Compared to Census of Population for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Sex	Study Respondent Groups				Census of Population	
	Consumers ^a		Local Public Officials ^b		N	% of Thumb Area Population
	N	%	N	%		
Males	550	58.7	99	70.7	30,624	48.7
Females	387	41.3	41	29.3	32,297	51.3
Total	937	100	140	100	62,921	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, General Characteristics of the Rural Population for Counties, pp. 215-220.

^aStatistical significance was not found at the .10 probability level in comparing the distribution of consumers between sexes with the census.

^bStatistical significance was found at the .05 probability level in comparing the distribution of officials between sexes with the census.

Marital Status

A larger proportion of service consumers and local public officials were married than were single. Eighty-six percent of the consumers were married while almost 95% of the local public officials were married. Comparable census information was not available since census data are compiled for persons fourteen years old and older and the youngest age in the sample was twenty years. Using census data in this table would, therefore, overstate the proportion of single persons. The information on marital status is detailed in Table 17.

Table 17.--Marital Status Distribution of Study Respondent Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Marital Status	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
Married	820	86.5	133	95.0
Single	128	13.5	7	5.0
Total	948	100	140	100

Familial Status

When familial status was reviewed, it was found that a markedly high proportion of both service consumers and local public officials had children at one time. Eighty-eight percent of the consumers and 93% of the local public officials have had children.

It was also found that a slightly higher proportion of both service consumers and local public officials had children living at home than those without children living at home. Over 57% of the consumers and 58% of the local officials had children living at home at the time the study data were collected. Comparable census information was not available for this variable. Table 18 depicts the distribution of response for this variable.

Income

A large majority of consumers (68.5%) had incomes from \$ 0-12,000 and the majority of local public officials had incomes from \$ 0-12,000 (62%).

Differences in annual family incomes between service consumers, people in the general population (according to the census), and local public officials were not found to be statistically significant. There

Table 18.--Familial Status Distribution of Study Respondent Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Familial Status	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
Ever Had Children				
Yes	832	88.0	129	92.8
No	114	12.0	10	7.2
Total	946	100	139	100
Children Living at Home				
Yes	537	57.2	81	58.3
No	399	42.8	58	41.7
Total	933	100	139	100

were, however, a markedly lower percentage of local public officials earning \$ 0-3,000 (3%) compared with consumer respondents (9%) or the census (12%). Also, there was a relatively larger proportion of local public officials earning \$12,000-25,000 (34%) compared with consumers (28%) or the census (25%). Information on income is detailed in Table 19.

Education

Among the educational categories, the largest proportion of both consumers and local public officials had graduated from high schools. Over 40% of the consumers and 49% of the local officials had graduated from high school. The smallest proportion from both groups completed vocational training school. This relatively small proportion may be due to the lack of available vocational opportunities. Only 5% of the

Table 19.--Income Distribution of Study Respondent Groups Compared to Census of Population for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Income Groups (dollars)	Study Respondent Groups				Census of Population	
	Consumers ^a		Local Public Officials ^b		N	%
	N	%	N	%		
0-3	79	9.0	4	2.8	3,661	12.5
3-6	136	15.4	19	13.5	4,774	16.3
6-9	159	18.0	31	21.8	6,707	22.9
9-12	230	26.1	34	23.9	6,092	20.8
12-25	243	27.6	49	34.5	7,322	25.0
25-50	27	3.2	5	3.5	642	2.3
50+	7	0.79	-	-	74	0.2
Total	881	100	142	100	29,272	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, Income and Poverty Status in 1969 for Counties, pp. 572-78.

^aStatistical significance was not found at the .10 probability level in comparing the distribution of consumers among levels of income with the census.

^bStatistical significance was not found at the .10 probability level in comparing the distribution of officials among levels of income with the census.

consumers and 2% of the local officials completed vocational training school. The information on education is detailed in Table 20.

Table 20.--Educational Distribution of Study Respondent Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Levels of Education	Study Respondent Groups			
	Consumers		Local Public Officials	
	N	%	N	%
Grades 0-8	146	15.7	19	13.4
Grades 9-11	136	14.6	10	7.0
High School Graduate	377	40.5	69	48.6
Completed Voc. Tgn. School	50	5.4	3	2.1
College 1-3 Years	91	9.8	24	16.9
College Graduate	130	14.0	17	12.0
Total	930	100	142	100

As in the case of occupation, it was necessary to have comparable information between respondents and the census population to determine sample bias. Therefore, with regard to education, it was necessary to recalculate the percentage distribution of respondents among levels of education since census data did not have a "vocational education training" classification.

In comparing respondents to people in general (according to census data) among levels of education, it was found that the differences between the distribution of consumers and census population and local officials and census population were statistically significant. In examining the distribution of consumers and local officials' responses, it was found that a markedly larger proportion of both groups attended

college 1-3 years or graduated from college than the general population. Over 10% of the consumers and 17% of the officials attended college 1-3 years compared to only 7% of people generally. Additionally, 15% of the consumers and 12% of the local public officials graduated from college compared to only 5% of people generally. Also, the proportions of consumers and officials with low levels of education were considerably smaller than the census. Table 21 details the comparison between respondents and census population among education groups.

Table 21.--Educational Distribution of Study Respondent Groups Compared to Census of Population for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Levels of Education	Study Respondent Groups					
	Consumers ^a		Local Public Officials ^b		Census of Population ^a	
	N	%	N	%	N	%
Grades 0-8	146	16.7	19	13.7	22,181	36.0
Grades 9-11	136	15.4	10	7.2	11,521	18.7
High School Graduate	377	42.8	69	49.6	20,702	33.5
College 1-3 Years	91	10.3	24	17.3	4,375	7.1
College Graduate	130	14.8	17	12.2	2,896	4.7
Total	880	100	139	100	61,675	100

SOURCE: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Michigan, Vol. 1, Educational and Family Characteristics for Counties, pp. 544-50.

^aStatistical significance was found at the .01 probability level in comparing the distribution of consumers among levels of education with the census.

^bStatistical significance was found at the .001 probability level in comparing the distribution of officials among levels of education with the census.

Summary of Respondent Characteristics and Sample Bias

Summary of Service Consumer Characteristics

Service consumers who responded to the survey were fairly evenly distributed among Huron, Sanilac, and Tuscola Counties with each county representing about 33% of the total response. Using the modal and median response to the survey instrument, it was possible to characterize the typical service consumer as a married male who was graduated from high school with children living at home. He was forty-nine years of age, and had lived in an urban area (i.e., a city or village) for thirty-one years. He was employed in the trades and earned an annual income of \$9,870.

Summary of Local Public Official Characteristics

The responses from local public officials were also fairly evenly distributed among the three counties with each county representing about 33% of the total response. Using the modal and median response to the survey instrument, it was possible to characterize the typical local public official as a married male who had graduated from high school and had children living at home. In contrast to the typical service consumer, the local public official was fifty-four years of age, had lived on a farm for forty-seven years, held a professional job (many were also farmers) and had an income of \$10,500.

Summary of Sample Bias

In comparing the distribution of service consumer respondents with people in general (according to the census) among county residence, age, sex, and income groups, no statistically significant differences (at $\alpha = .10$) were found. (That is, the differences observed in the variation

of response among these groups were probably due to chance.) Statistically significant differences, however, between consumers and Thumb Area people in general among occupation and educational groups were found. It was revealed that a significantly larger proportion of service consumers than the general population represented professional-technical jobs. It was also revealed that consumer respondents represented higher levels of education than people generally achieved according to the census data.

In comparing the distribution of local public officials with people in general among county residence and income, no statistically significant differences (at $\alpha = .10$) were found. Statistically significant differences among age, sex, education, and occupational groups were found, however, between local public officials and the census population. In contrast to the census population, local public officials were found to be significantly older, to represent more males than females, have higher levels of education, and represent a significantly larger proportion of professional occupations (the difference in occupation was expected since the sample of local public officials was stratified by occupation).

Sample bias could not be determined for length of residence, living area location, familial status, and marital status because comparable census information was not available.

A possible reason for some of the bias represented in the population of survey respondents in comparison to the census population may be the result of using a mail out survey research approach. It seems logical to assume, for example, that those with higher levels of formal education have reading and writing skills that better enable them to respond to this type of survey research approach.

Representativeness of the Sample

A non-respondent check was made to determine if the opinions of consumers who did not respond were similar to consumers who did respond. If the distributions of non-respondent opinions were similar to those of the respondents, then one can be fairly safe in concluding that the opinions of consumer respondents were representative of the total sample of service consumers.

For undertaking the non-respondent check, a telephone survey was made of a small sample of non-respondent households in the three county area. An equal number of randomly selected households were called in each of the three counties. Time and budget limitations made it possible to contact 129 households, forty-three households in each county. This represented approximately 7% of the non-respondent population.

Neither time or resource limitations permitted gathering non-respondent's opinions on service adequacy for all fifty-four services included in this study. Thus, considering the stipulation that service consumers must have first used a service in order to give an opinion of service adequacy, it was decided that in order to get opinions from as many non-respondents as possible, services that were found to have the greatest usage in each of the major service categories were selected for the non-respondent check. It was further reasoned that non-respondent opinions on the more commonly used services would provide more statistically reliable comparisons because of the greater number of responses. (Since the number of respondents using services in the special service category was too low for making statistically reliable comparisons with non-respondents, services representing this category were omitted in the non-respondent check.)

Consumers' opinions, therefore, were gathered for the following six services: high school services, doctor services, swimming facilities, police service, local roads, and sanitary landfill facilities.

In comparing non-respondent and respondent opinions of service adequacy for these six services using Chi Square analysis, a statistically significant difference (at $\alpha = .10$) was found between the two groups for local roads and swimming facilities. No statistically significant differences, however, were found for the other services.

Although one cannot be certain that the variation in responses for services other than local roads and swimming facilities did not occur by chance, the distribution of respondent and non-respondent opinions on five out of the six services were fairly similar. With regard to high schools, in fact, the proportion of those viewing the service "adequate" and "not adequate" was exactly the same between respondent and non-respondent. The greatest disparity in opinions between these two groups, however, is found in the question on swimming facilities where 19% of the non-respondents felt that service was not adequate vs. 35% of the respondents. A detailed comparison between respondent and non-respondent views for the six services included in the non-respondent check is given in Table 22.

In reviewing the prior information on respondent and non-respondent opinions it appears that there is a general similarity in the responses between these two groups. Thus, it would seem safe to say that the responses of service consumer respondents are generally representative of the total sample of service consumer respondents.

Given limited time and resources, a non-respondent check was not made for the sample of local public officials. The probability of an opinion bias in the sample of local public officials was considered to

Table 22.--Comparison Between Opinions of Respondents and Non-respondents on Selected Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Selected Services	Respondents Indicating:						Non-respondents Indicating:					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
High Schools	428	83	86	17	512	100	55	83	11	17	66	100
Doctors	587	81	137	19	724	100	85	77	26	23	111	100
Swimming*	209	65	112	35	321	100	25	81	6	19	31	100
Police Protection	236	87	35	13	271	100	31	77	9	23	40	100
Local Roads*	375	64	209	36	584	100	88	75	29	25	117	100
Sanitary Landfill	314	82	67	18	381	100	47	90	5	10	52	100

*Statistically significant differences were found at the .10 probability level in comparing the distribution of responses between respondents and non-respondents.

be less than that in the service consumer sample since the return rate from local public officials was significantly higher than from service consumers (48% compared to 29%).

Section III Analysis of Survey Results

As noted earlier, the following discussion of data analysis is broken down into six parts for clarity and convenience of reading. The discussion in Part I focuses upon an overview of consumers' opinions on the services included in the survey for the study area as a whole and for each of the three counties. Parts II and III center on an examination of characteristics most closely associated with consumer dissatisfaction of selected services. The socio-economic variables examined in Part II are county residence and living area location. Age, length of residence, occupation, sex, marital status, familial status, income, and education are the variables examined in Part III. Presented in Part IV of this section is an overview of local officials' opinions of the area as a whole (the level of response from this group was insufficient for reporting their overall opinions by county). Part V of the analysis involves a discussion of the differences found between consumers and local public officials on opinions of service adequacy for the area as a whole. The discussion in Part VI focuses on the reasons users were dissatisfied with selected community services.

The discussion in Parts II, III, V, and VI focuses upon the two services in each major service category viewed least adequate by consumers. (In the case of health services, three services will be discussed since two of the three services viewed least adequate by consumers had the same distribution of response.) Local public officials

are then provided with additional information on services in each major service category that seem to offer the greatest opportunities for improvement.

Chi Square was the statistical technique used in Parts II, III, and IV of this section for determining whether differences in opinions among the variables were statistically significant. The level for determining statistical significance was set at $\alpha = .10$.

In addition to the Chi Square analysis, a 90% confidence interval was calculated for consumers and local public officials' overall responses to the survey questions as reported in Parts I and IV of this section. A 90% confidence interval means that there is a 90% probability that the consumers' overall responses to preschool services, for example, is accurate (not due to chance) within plus or minus a given percentage (e.g., $\pm 9.4\%$). It was found that for some services, the calculated confidence interval was large enough to change the direction of opinion distribution for that service (e.g., if 60% of the consumers indicated roads were adequate and 40% felt roads were inadequate, and the calculated confidence interval was $\pm 11\%$, this could mean that as few as 49% felt roads were adequate and as many as 51% felt roads to be inadequate--thus the direction of opinion distribution was changed with a confidence interval calculated at $\pm 11\%$). If the calculated confidence interval was large enough to change the direction of opinion distribution for a given service, the results for that service were considered statistically unreliable and are noted with an asterisk (*). See Appendix B for the calculated confidence intervals for each service.

Part I

This discussion focuses on consumers' overall opinions of service adequacy for the area as a whole and for each of the three counties. Reporting the survey results for the area as a whole helps the reader gain insights into possible service problems common to people over a multi-county or regional area; however, since counties within the regional area may have distinct service problems or needs, it was also decided to report on consumers' overall opinions on service adequacy for each of the three counties within the study area. In order to give the reader a focus, the emphasis is on the two services that consumers found most and least adequate. The results for the other services, however, are reported.

Overview of Service Consumers' Opinions for the Study Area as a Whole

Education Services

Of the education services surveyed, the two community services that service consumers found most adequate in the three counties were the Cooperative Extension Service and adult education services in community colleges. In both cases, more than 95% of the service consumer respondents expressed satisfaction with the service. Also, service consumers were relatively satisfied with community colleges, public libraries, and elementary schools with more than 92% of the consumers expressing satisfaction in all cases.

Service consumers found comparatively least adequate among the education services surveyed were preschool and high school services. Almost 14% of the service consumers felt dissatisfied with preschool services while 17% felt that high schools were not adequate for meeting

their needs. Additionally, over 11% of the service users expressed dissatisfaction with adult education in high schools and vocational schools. The distribution of service consumer opinions for each education service is depicted in Table 23.

Table 23.--Distribution of Service Consumers' Opinions on the Adequacy of Education Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Education Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Cooperative Extension	153	95.6	7	4.4	160	100
Adult Education	39	95.1	2	4.9	41	100
Community College	94	94.0	6	6.0	100	100
Public Library	441	93.6	30	6.4	471	100
Elementary School	536	92.2	45	7.8	581	100
Vocational School	55	88.7	7	11.3	62	100
Adult Ed. in H.S.	155	88.1	21	11.9	176	100
Preschool	125	86.2	20	13.8	145	100
High School	428	83.3	86	16.7	514	100

Health Services

Among the health services surveyed, service consumers were most satisfied with immunization and nursing services. Over 94% found them adequate for meeting their individual and family needs. In addition, consumers seemed relatively satisfied with general hospital services, ambulance services, dentist services, and maternal-child care. At least 90% or over felt them to be adequate.

Service consumers viewed alcohol rehabilitation, family planning, and mental health services least adequate among the health services surveyed. Of those who had used alcohol rehabilitation and family planning services, 25% felt these services to be inadequate for meeting their needs or the needs of their family. Of those who had used mental health services, almost 28% were dissatisfied with the service. Consumers expressed some dissatisfaction with hospital emergency room services, home health nursing, and doctor services. Almost 12% of those who had used hospital emergency room services viewed them as inadequate, while 16% were dissatisfied with home health nursing. Moreover, 19% found doctor services inadequate for meeting their individual or family needs. The distribution of service consumer opinion for health services is detailed in Table 24.

Table 24.--Distribution of Service Consumers' Opinions on the Adequacy of Health Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Health Services	Consumers' Opinions				Total	
	Service Adequate		Service Not Adequate			
	N	%	N	%	N	%
Immunization	227	97.0	7	3.0	234	100
Nursing	148	94.9	8	5.1	156	100
General Hospital	650	93.4	46	6.6	696	100
Ambulance	227	92.3	19	7.7	246	100
Dentist	580	91.3	55	8.7	635	100
Maternal-child Care	63	90.0	7	10.0	70	100
Hospital Emerg. Rm.	500	88.2	67	11.8	567	100
Home Health Nursing	16	84.2	3	15.8	9	100
Doctor	587	81.1	137	18.9	724	100
Alcohol Rehab.	12	75.0	4	25.0	16	100
Family Planning	12	75.0	4	25.0	16	100
Mental Health	39	72.2	15	27.8	54	100
Drug Rehab.*	2	50.0*	2	50.0*	4	100

*Denotes results that were statistically unreliable due to a low level of response.

Recreation Services

Among the recreation services, service consumers felt most satisfied with picnic and camping areas. Almost 88% of the service consumers found picnic areas adequate while over 86% indicated camping areas were adequate.

Two recreation services found least adequate were school recreation facilities for community use and swimming facilities. Twenty-three percent felt school recreation facilities for community use to be inadequate while 35% of the service consumer respondents expressed dissatisfaction with swimming facilities. In addition, consumers seemed to be relatively dissatisfied with the other recreation services. These include organized adult recreation, organized recreation for senior citizens, and organized recreation for youth. Although the lowest proportion of consumers were dissatisfied with organized adult recreation (14%), almost 17% expressed dissatisfaction with organized recreation for senior citizens. And 19% of the consumers were unhappy with organized recreation for youth. Distribution of opinion for the recreation service category is detailed in Table 25.

Public Safety Services

Of the public safety services surveyed, service consumers were most satisfied with fire protection (93%) and police protection (87%).

On the other hand, service consumers felt least satisfied with the court system and juvenile correction services. Over 16% of the respondents viewed the court system inadequate while 18% felt dissatisfied with juvenile correction services. The distribution of opinions for the public safety category is detailed in Table 26.

Table 25.--Distribution of Service Consumers' Opinions on the Adequacy of Recreation Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Recreation Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Picnic Areas	492	87.9	68	12.1	560	100
Camping Areas	169	86.2	27	13.8	196	100
Organized Adult Rec.	67	85.9	11	14.1	78	100
Organized Rec. for Sr. Cit.	30	83.3	6	16.7	36	100
Organized Rec. for Youth	158	80.2	39	19.8	197	100
School Rec. Facilities for Use by Community	154	77.0	46	23.0	200	100
Swimming Facilities	209	65.1	112	34.9	321	100

Table 26.--Distribution of Service Consumers' Opinions on the Adequacy of Public Safety Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Public Safety Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Fire Protection	195	93.3	14	6.7	209	100
Police Protection	236	87.1	35	12.9	271	100
Court System	127	83.5	25	16.5	152	100
Juvenile Correction	27	81.8	6	18.2	33	100

Transportation Services

Service consumers were most satisfied with school bus service (93%) and scheduled airline service (93%) among the transportation services surveyed. Consumers also seemed to be relatively satisfied with commercial trucking services as over 91% viewed this service as adequate.

On the other hand, local roads and county roads were viewed least adequate by service consumers. Over 35% felt dissatisfied with both local road and county road conditions. In addition to road conditions, a relatively large proportion of consumers were dissatisfied with the condition of state highways (17%), road plowing for local roads (19%), condition of bridges (26%), and freight rail service (29%). The distribution of opinions for transportation services is detailed in Table 27.

Public Works

For the public works services category, public sewers and garbage disposal were felt to be the most adequate by service consumers. Almost 93% approved of public sewer facilities while over 91% of the service consumers felt satisfied with garbage disposal services.

In contrast, service consumers felt least satisfied with quality of public water and sanitary landfill facilities. Almost 11% expressed disapproval of water quality while over 17% of the respondents felt dissatisfied with sanitary landfill facilities. Although the question on water quality did not designate "use" (e.g., drinking, industrial use) it is assumed that most respondents interpreted the question to mean quality of water for household purposes. The distribution of opinions in the public works service category is detailed in Table 28.

Table 27.--Distribution of Service Consumers' Opinions on the Adequacy of Transportation Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Transportation Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
School Bus	417	93.5	29	6.5	446	100
Scheduled Airline	172	93.0	13	7.0	185	100
Commercial Trucking	204	91.1	20	8.9	224	100
Condition of State Highways	471	82.8	98	17.2	569	100
Road Plowing for Local Roads	459	80.9	108	19.1	567	100
Condition of Bridges	358	73.7	128	26.3	486	100
Freight Rail	80	71.4	32	28.6	112	100
Condition of Local Roads	375	64.2	209	35.8	584	100
Condition of County Roads	358	63.2	208	36.8	566	100
Bus Service Between Towns*	26	59.1	18	40.9	44	100

*Denotes results that were statistically unreliable due to a low level of response.

Table 28.--Distribution of Service Consumers' Opinions on the Adequacy of Public Works Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Public Works Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Public Sewer System	276	92.6	22	7.4	298	100
Garbage Disposal	363	91.2	35	8.8	398	100
Quality of Public Water	313	89.2	38	10.8	351	100
Sanitary Landfill	314	82.4	67	17.6	381	100

Special Services

In the special service category, the two that were viewed most adequate by service consumers were financial aid to low income families (90%) and housing facilities for low income families (87.5%).

Viewed least adequate by consumers were training-education for the physically handicapped and special care for the retarded. Twenty-five percent felt dissatisfied with training-education for the physically handicapped, and almost 27% of the service consumers expressed dissatisfaction with special care for the retarded. Consumers were also dissatisfied with family counseling for personal problems (19%) and job training for low income adults (20%). The distribution of service consumer opinion for services in the special services category is depicted in Table 29.

Overview of Service Consumers' Opinions for Huron, Sanilac, and Tuscola Counties

Education Services

Huron County--In Huron County, the two education services that consumers viewed most adequate were adult education in community colleges and public library services. All of the consumers surveyed in Huron County were satisfied with adult education in community colleges while 95% of the consumers viewed library services adequate. A relatively large proportion of consumers in Huron County were also satisfied with Cooperative Extension (94%), community colleges (91%), elementary schools (91%), and adult education in high schools (91%).

Huron County consumers, on the other hand, were least satisfied with preschool services and high schools. Over 15% felt dissatisfied with preschools services while 21% expressed dissatisfaction with high schools.

Table 29.--Distribution of Service Consumers' Opinions on the Adequacy of Special Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Special Services	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Financial Aid to Low Income Families	18	90.0	2	10.0	20	100
Housing Facilities for Low Income Families	7	87.5	1	12.5	8	100
Family Counseling for Personal Problems	22	81.5	5	18.5	27	100
Job Tng. for Low Income Adults	8	80.0	2	20.0	10	100
Tng.-Edu. for Physically Handicapped	15	75.0	5	25.0	20	100
Special Care for the Retarded	11	73.3	4	26.7	15	100
Child Day Care*	6	75.0	2	25.0	8	100
Family Counseling for Financial Problems*	3	75.0	1	25.0	4	100
Housing Facilities for the Elderly*	8	57.1	6	42.9	15	100
Legal Services for Low Income*	1	33.3	2	66.7	3	100
Provision of Food Service to the Elderly*	5	62.5	3	37.5	8	100

*Denotes results that were statistically unreliable due to a low level of response.

Sanilac County--In Sanilac County, the two education services that service consumers felt to be most adequate were Cooperative Extension and community college education. One hundred percent of the consumers felt that Cooperative Extension Services were adequate while 94% were satisfied with community college education. Consumers also felt relatively satisfied with preschool services (93%), public library services (93%), and elementary school (93%).

The two services that Sanilac County felt least satisfied with were adult education in community college (15% expressed dissatisfaction) and vocational education (17% were critical). Additionally, a relatively large proportion of consumers were dissatisfied with adult education in high schools (11%), and high school services (14%).

Tuscola County--The two education services consumers felt to be most adequate in Tuscola County were adult education in community colleges (100% of the consumers found this service adequate) and community college education (95% of the consumers expressed satisfaction). Additionally, a relatively large proportion of consumers expressed satisfaction with Cooperative Extension (94%), public libraries (94%), elementary schools (93%), and vocational education (92%).

In contrast, consumers in Tuscola County least satisfied with high school services and adult education in high schools. Over 13% of the consumers felt high schools to be inadequate while 16% expressed dissatisfaction with adult education in high schools. Also, a relatively large proportion of consumers in Tuscola County felt dissatisfied with preschool services. Almost 14% found preschool services inadequate for meeting their needs.

The comparative distribution of consumer opinion for education services by county is depicted in Table 30.

Table 30.--Comparison of Service Consumers' Opinions on Education Services for Huron, Sanilac, and Tuscola Counties, 1974.

Education Service	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Preschool	45	84.9	8	15.1	53	100	33	94.3	2	5.7	35	100	45	86.5	7	13.5	52	100
Elementary	172	91.5	16	8.5	188	100	154	93.9	10	6.1	164	100	197	93.4	14	6.6	211	100
High School	138	79.3	36	20.7	174	100	128	85.9	21	14.1	149	100	153	86.4	24	13.6	177	100
Vocational	20	90.9	1	9.1	22	100	10	83.3	2	16.7	12	100	23	92.0	2	8.0	25	100
Community College	21	91.3	2	8.7	23	100	34	94.4	2	5.6	36	100	36	94.7	2	5.3	38	100
Adult Ed. in High School	59	90.8	6	9.2	65	100	34	89.5	4	10.5	38	100	59	84.3	11	15.7	70	100
Adult Ed. in Comm. Clg.	9	100	-	-	9	100	11	84.6	2	15.4	13	100	18	100	-	-	18	100
Cooperative Extension	48	94.1	3	5.9	51	100	51	100	-	-	51	100	49	94.2	3	5.8	52	100
Public Library	144	94.7	8	5.3	152	100	127	93.4	9	6.6	136	100	153	93.5	11	6.5	169	100

Health Services

Huron County--In Huron County, the two health services that were viewed most adequate were nursing services and immunization services. All of the respondents in Huron County viewed nursing services adequate while 97% viewed immunization services adequate. Consumers were also relatively satisfied with ambulance services (96%), general hospital services (96%), and dentist services (93%), maternal and child health care (90%) and hospital emergency room services (90%).

In contrast, Huron County consumers were least satisfied with mental health services and doctor services. Almost 24% of those who have used mental health services felt dissatisfied while the same percentage (24%) felt doctor services to be inadequate.

Sanilac County--Of the health services in Sanilac County, two services that were considered most satisfactory by consumers were nursing services and immunization services. Ninety-five percent found these services adequate. In addition, 90% or over viewed general hospital services, dentist services, maternal and child health care, and ambulance service adequate for meeting their needs.

Sanilac County consumers, on the other hand, were least satisfied with doctor services and hospital emergency room services. Almost 13% of the consumers felt dissatisfied with the adequacy of doctor services and 14% felt that hospital emergency room services were inadequate.

Tuscola County--In Tuscola County, the two health services found most adequate were immunization services and general hospital services. One hundred percent of the consumers were satisfied with the adequacy of immunization services, and 94% felt satisfied with general hospital

services. Over 87% of the Tuscola County consumers were also satisfied with nursing services, ambulance services, hospital emergency room services, dentist services, and maternal child health care.

On the other hand, Tuscola County consumers felt least satisfied with doctor services and mental health services. Nineteen percent indicated dissatisfaction with the adequacy of doctor services while 22% felt dissatisfied with mental health services.

The comparative distribution of consumer responses for health services among the counties is depicted in Table 31.

Recreation Services

Huron County--Among the recreation services in Huron County, the two services that consumers viewed most adequate were organized recreation for senior citizens and camping areas. Almost 93% found organized recreation for senior citizens adequate while 88% of the consumers felt satisfied with picnic areas. Additionally consumers felt relatively satisfied with the adequacy of picnic areas (88%).

The two recreation services viewed least adequate in Huron County were organized recreation for youth and swimming facilities. Almost 23% felt dissatisfied with organized recreation for youth and 31% felt that swimming facilities were inadequate. Organized adult recreation and organized recreation for community use were two further services that Huron County consumers found relatively inadequate. Fifteen percent expressed dissatisfaction with organized adult recreation while 21% of the consumers felt dissatisfied with school recreation for community use.

Table 31.--Comparison of Service Consumers' Opinions on Health Services for Huron, Sanilac, and Tuscola Counties, 1974.

Health Service	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
General Hospital	220	95.6	10	4.3	230	100	202	91.8	18	8.2	220	100	211	93.8	14	6.2	225	100
Hospital Emergency Room	166	89.2	20	10.7	186	100	145	85.8	24	14.2	169	100	174	89.7	20	10.3	194	100
Nursing	50	100	-	-	50	100	55	94.8	3	5.2	58	100	39	90.7	4	9.3	43	100
Doctor	176	76.2	55	23.8	231	100	196	87.1	29	12.9	225	100	200	81.0	47	19.0	247	100
Dentist	201	93.1	15	6.9	216	100	196	91.2	19	8.8	215	100	167	89.3	20	10.7	187	100
Immunization	97	97.0	3	3.0	100	100	51	94.4	3	5.6	54	100	74	100	-	-	74	100
Maternal Child Health Care	26	89.7	3	10.3	29	100	22	91.7	2	8.3	24	100	14	87.5	2	12.5	16	100
Ambulance	75	96.2	3	3.8	78	100	77	89.5	9	10.5	86	100	66	90.4	7	9.6	73	100
Mental Health	16	76.2	5	23.8	21	100	9	60.0*	6	40.0*	15	100*	11	78.6	3	21.4	14	100
Alcohol Rehabilitation*	6	100	-	-	6	100	2	50.0	2	50.0	4	100	4	66.7	2	33.3	6	100
Drug Rehabilitation*	2	66.7	1	33.3	3	100	2	50.0	2	50.0	4	100	-	-	1	100	1	100
Family Planning*	6	100	-	-	6	100	4	57.1	3	42.9	7	100	1	50.0	1	50.0	2	100
Home Health Nursing*	5	100	-	-	5	100	5	62.5	3	37.5	8	100	6	100	-	-	6	100

*Denotes results that were statistically unreliable due to a low level of response.

Sanilac County--Among the recreation services in Sanilac County, the two services that consumers viewed most adequate were picnic areas and organized adult recreation. Over 89% felt picnic areas were adequate while 87% considered organized adult recreation adequate. In addition, 86% of the consumers felt satisfied with camping areas.

In contrast, school recreation facilities for community use and swimming facilities were considered least adequate by consumers. Over 22% felt school recreation facilities for community use were inadequate, and 26% were critical of swimming facilities. Also, 20% or over felt dissatisfied with organized recreation for senior citizens and organized recreation for youth.

Tuscola County--The two recreation services in Tuscola County that consumers were most satisfied with were organized recreation for youth and picnic areas. Over 85% of the consumers were satisfied with organized recreation for youth and picnic areas. Camping areas and organized adult recreation followed closely with over 83% of the consumers expressing satisfaction with these services.

Swimming facilities were viewed least adequate by consumers in Tuscola County. Over 47% viewed swimming facilities inadequate. (The level of response for organized recreation for senior citizens was insufficient to be statistically reliable.)

The comparative distribution of consumer responses for recreation services as broken down by county is depicted in Table 32.

Table 32.--Comparison of Service Consumers' Opinions on Recreation Services for Huron, Sanilac, and Tuscola Counties, 1974.

Recreation Service	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Picnic Areas	172	88.2	23	11.8	185	100	151	89.3	18	10.6	169	100	151	84.8	27	15.2	178	100
Camping Areas	68	88.3	9	11.7	77	100	49	85.5	9	15.5	58	100	45	83.3	9	16.7	54	100
Swimming Facilities	81	69.2	36	30.8	117	100	70	73.7	25	26.3	95	100	52	52.5	47	47.5	99	100
School Rec. for Comm. Use	62	79.5	16	20.5	78	100	38	78.0	11	22.0	49	100	49	74.2	17	25.8	66	100
Organized Rec. for Youth	58	77.3	17	22.7	75	100	36	78.3	10	21.7	46	100	56	84.9	10	15.1	66	100
Organized Adult Rec.	29	85.3	5	14.7	34	100	20	87.0	3	13.0	23	100	15	83.3	3	16.7	18	100
Organized Rec. for Sr. Citiz.	13	92.9	1	7.1	14	100	8	83.0	2	20.0	10	100	8	72.7*	3	27.3*	11	100*

*Denotes results that were statistically unreliable due to a low level of response.

Public Safety Services

Huron County--The two public safety services that consumers in Huron County viewed most adequate were fire protection and juvenile correction. All persons who had used these services found them satisfactory.

Consumers, on the other hand, were most critical of the court system and police protection in Huron County. Seven percent viewed the court system inadequate while 11% viewed police protection inadequate.

Sanilac County--Of the public safety services in Sanilac County, the level of consumer response for juvenile correction services was too low to be statistically reliable. Since there are only three services with a sufficient level of response, the service found most and least adequate will be discussed.

Fire protection was considered most adequate among Sanilac County consumers with 88% indicating the service to be adequate. The court system, on the other hand, was considered least adequate with 17% viewing the service inadequate.

Tuscola County--In Tuscola County, the two public safety services viewed most adequate were fire and police protection. Over 90% of the consumers found fire protection adequate while 85% viewed police protection adequate.

The two public safety services viewed least adequate were the court system and juvenile corrections. Twenty-five percent of the consumers felt these services to be inadequate.

The comparative distribution of consumer opinion among the counties is depicted in Table 33.

Table 33.--Comparison of Service Consumers' Opinions on Public Safety Services for Huron, Sanilac, and Tuscola Counties, 1974.

	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Public Safety Service																		
Fire Protection	66	100	-	-	66	100	53	88.3	7	11.7	60	100	68	90.7	7	9.3	75	100
Police Protection	92	89.3	11	10.7	103	100	73	84.9	13	15.1	86	100	58	85.3	10	14.7	68	100
Court System	42	93.3	3	6.7	45	100	45	83.3	9	16.7	54	100	36	75.0	12	25.0	48	100
Juvenile Correction	12	100	-	-	12	100	5	62.5*	3	37.5*	8	100*	9	75.0	3	25.0	12	100

*Denotes results that were statistically unreliable due to a low level of response.

Transportation Services

Huron County--School bus services and scheduled airline services were the two transportation services in Huron County that were viewed most adequate. Ninety-five percent of the consumers viewed school bus services adequate, and 91% viewed scheduled airline services adequate. Consumers were also relatively satisfied with commercial trucking services with almost 91% viewing this service adequate.

The two transportation services that Huron County consumers viewed least adequate were bridges and freight rail service. Almost 29% of the consumers viewed freight rail services inadequate while 33% viewed bridges inadequate. Other services with which a comparatively large proportion of Huron County consumers felt dissatisfied included road plowing (13%), condition of state highways (15%), and conditions of county and local roads (28%).

Sanilac County--School bus service and scheduled airline services were the two transportation services viewed most adequate in Sanilac County. Ninety-two percent of the consumers were satisfied with these services.

In contrast, local and county roads were viewed least adequate by Sanilac County consumers. Over 38% of the consumers in Sanilac County felt dissatisfied with local and county roads. Moreover, a relatively large proportion of Sanilac County consumers felt dissatisfied with commercial trucking (13%), condition of state highways (17%), road plowing (19%), freight rail services (30%), and bridge conditions (31%).

Tuscola County--Among the transportation services, Tuscola County consumers were most satisfied with scheduled airline service and school bus service. Ninety-five percent were satisfied with scheduled airline services, and over 93% felt school bus service to be adequate. Service consumers also felt fairly satisfied with commercial trucking services (93%).

Local and county road conditions, on the other hand, were viewed least adequate. Approximately 40% were dissatisfied with local and county road conditions. In addition, a relatively large proportion of Tuscola County consumers were also dissatisfied with the condition of bridges (18%), condition of state highways (18%), road plowing (24%), and freight rail services (25%).

The comparative distribution of consumer opinions for transportation as broken down by county is depicted in Table 34.

Public Works

Huron County--Of the services in the public works category, the two services that Huron County consumers found most adequate were public sewer system facilities and public water quality. Almost 94% of the consumers felt public sewer system facilities to be adequate while 93% expressed satisfaction with water quality.

Garbage disposal and sanitary landfill facilities were two public works services that Huron County respondents found least adequate. Over 9% of the consumers felt dissatisfied with garbage disposal and 17% expressed dissatisfaction with sanitary landfill facilities.

Sanilac County--Among the public works services, the two services that Sanilac County respondents found most adequate were garbage disposal

Table 34.--Comparison of Service Consumers' Opinions on Transportation Services for Huron, Sanilac, and Tuscola Counties, 1974.

Transportation Service	Service Consumers' Opinions													
	Huron County						Sanilac County						Tuscola County	
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
School Bus Service	130	94.9	7	5.1	137	100	139	92.7	11	7.3	150	100	135	93.1
Scheduled Airline	51	91.1	5	8.9	56	100	35	92.1	3	7.9	38	100	77	95.1
Freight Rail	30	71.4	12	28.6	42	100	19	70.4	8	29.6	27	100	30	75.0
Commercial Trucking	69	90.8	7	9.2	76	100	49	87.5	7	12.5	46	100	78	92.9
Road Plowing	160	87.4	23	12.6	183	100	134	81.2	31	18.8	165	100	150	75.8
Condition of Local Roads	128	71.5	51	28.5	179	100	110	61.8	68	38.2	178	100	126	61.5
Condition of Co. Roads	125	72.3	48	27.8	173	100	105	61.4	66	38.6	171	100	119	59.2
Condition of State Roads	146	84.9	26	15.1	172	100	146	83.4	29	16.6	175	100	164	81.6
Condition of Bridges	100	68.1	47	32.9	147	100	101	68.7	46	31.3	147	100	143	82.2
Bus Service Between Towns*	13	68.4	6	31.6	19	100	4	57.1	3	42.9	7	100	8	47.1

*Denotes results that were statistically unreliable due to a low level of response.

services and public water quality. Almost 94% of the consumers found garbage disposal adequate, and 88% found public water quality adequate.

Sanilac County consumers, on the other hand, were least satisfied with the public sewer system (14% expressing dissatisfaction) and sanitary landfill facilities (16% felt the service to be inadequate).

Tuscola County--Tuscola County consumers found the public sewer system and garbage disposal services most adequate among the public works services. Over 96% found the public sewer system adequate while 88% felt satisfied with garbage disposal.

In contrast, consumers were least satisfied with public water quality and sanitary landfill facilities. Over 13% viewed water quality inadequate, and 20% found sanitary landfill facilities unsatisfactory.

The comparative distribution of consumer opinion for public works services among the counties is depicted in Table 35.

Special Services

Due to the general low level of response among the special services, the results were not statistically reliable. The following discussion, therefore, will focus only on those services that were found to be statistically reliable.

Huron County--Among the special services in Huron County with a sufficient level of response, that viewed as most adequate was financial aid to low income families (all persons responding felt this service to be adequate).

The special service found least adequate in Huron County was family counseling for personal problems. Twenty-five percent felt this service to be inadequate.

Table 35.--Comparison of Service Consumers' Opinions on Public Works Services for Huron, Sanilac, and Tuscola Counties, 1974.

	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Public Works Service																		
Garbage Disposal	105	90.5	11	9.5	116	100	118	93.7	8	6.3	126	100	121	88.3	16	11.7	137	100
Sanitary Landfill	87	82.9	18	17.1	105	100	110	84.0	21	16.0	131	100	108	80.0	27	20.0	135	100
Quality of Public Water	111	92.5	9	7.5	120	100	92	87.6	13	12.4	105	100	98	86.7	15	13.3	113	100
Public Sewer System	92	93.9	6	6.1	98	100	72	85.7	12	14.3	84	100	106	96.4	4	3.6	110	100

Sanilac County--The level of response was sufficient in Sanilac County for reporting on only one service. It was found that 83% of the consumers viewed family counseling for personal problems adequate.

Tuscola County--In Tuscola County, all respondents found financial aid to low income families, special care for the retarded, and training-education for the physically handicapped to be adequate. The service that consumers found least adequate was family counseling for personal problems. Over 11% found this service inadequate.

The comparative distribution of consumer opinion for special services among the three counties is depicted in Table 36.

The discussion of research findings in Parts II, III, V, and VI of this section will deal with the following two services in each major service category that consumers in the area as a whole found least adequate: (as noted earlier, three services in the health service category will be discussed since two of the three services viewed least adequate by consumers had the same distribution of response) Education Services--preschool services and high school; Health Services--alcohol rehabilitation, family planning and mental health services; Recreation Services--school recreation facilities for community use and swimming facilities; Public Safety Services--court system and juvenile correction; Transportation Services--condition of local roads and condition of county roads; Public Works Services--quality of public water and sanitary landfill facilities; and Special Services--training-education for the physically handicapped and special care for the retarded.

Table 36.--Comparison of Service Consumers' Opinions on Special Services for Huron, Sanilac, and Tuscola Counties, 1974.

Special Service	Service Consumers' Opinions																	
	Huron County						Sanilac County						Tuscola County					
	Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total		Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Fin. Aid to Low Inc.	7	100	-	-	7	100	5	71.4*	2	28.6*	7	100*	6	100	-	-	6	100
Fam. Counseling-Pers. Prob.	9	75.0	3	25.0	12	100	5	83.3	1	16.7	6	100	8	88.9	1	11.1	9	100
Tng-Ed. Phy. Handicapped	7	77.8	2	22.2	9	100	2	40.0*	3	60.0*	5	100*	6	100	-	-	6	100
Spec. Care for Retarded	3	75.0*	1	25.0*	4	100*	1	25.0*	3	75.0*	4	100*	7	100	-	-	7	100
Housing Fac-Low Income*	3	75.0	1	25.0	4	100	2	100	-	-	2	100	2	100	-	-	2	100
Job Tng-Low Income*	2	66.7	1	33.3	3	100	3	100	-	-	3	100	3	75.0	1	25.0	4	100
Child Day Care*	2	66.7	1	33.3	3	100	1	50.0	1	50.0	2	100	3	100	-	-	3	100
Fam. Counseling-Financial*	-	-	-	-	-	-	2	100	-	-	2	100	1	50.0	1	50.0	2	100
Housing Fac-Elderly*	3	50.0	3	50.0	6	100	1	100	-	-	1	100	4	57.1	3	42.9	7	100
Legal Srvc-Low Income*	1	100	-	-	1	100	-	-	2	100	2	100	-	-	-	-	-	-
Provision Food Ser-Elderly*	2	100	-	-	2	100	-	-	2	100	2	100	3	75.0	1	25.0	4	100

*Denotes results that were statistically unreliable due to a low level of response.

Part II
Comparison of Consumers' Opinions Among
Counties and Living Area Location

The discussion in this part centers on an analysis of consumers' opinions by county and by living area location. Particular attention is given to comparing consumers' opinions that were found to be statistically significant at a $\alpha = .10$. This analysis, therefore, identifies which socio-economic characteristics (i.e., county residence and living area location) are most closely associated with consumer dissatisfaction with the services mentioned above. Thus, possible opportunities for improving services to people in a given geographic location are identified.

Education Services

High School Services--Consumer opinion differences concerning the adequacy of high school services among the three counties and among urban, rural non-farm, and farm residences were not found to be statistically significant.

Preschool Services--Opinion differences among the three counties regarding the adequacy of preschool services were not found to be statistically significant; the level of response, however, was insufficient for determining whether differences in opinions among urban, rural non-farm, and farm residents were statistically significant.

Health Services

Alcohol Rehabilitation and Family Planning Services--The level of response for alcohol rehabilitation and family planning services was insufficient for determining whether opinion differences among the three

or among urban, rural non-farm, and farm residents were statistically significant.

Mental Health Services--The level of consumer response for mental health services was insufficient for determining whether differences in opinions among the three counties or among urban, rural non-farm, and farm residents were statistically significant.

Recreation Services

School Recreation Facilities for Use by Whole Community--Consumers' opinions regarding the adequacy of school recreation facilities for community use were analyzed. No statistically significant difference in opinions among the three counties or among urban, rural non-farm, or farm residents was discovered in the analysis.

Swimming Facilities--The differences in consumers' opinions concerning swimming facilities among the three counties were found to be statistically significant. The distribution of response for swimming facilities showed that Tuscola County consumers felt least satisfied with the adequacy of swimming facilities compared with consumers in Huron or Sanilac Counties. Almost 48% of Tuscola County consumers felt dissatisfied with the adequacy of swimming facilities. Similarly, neither Huron nor Sanilac County respondents were particularly satisfied with swimming facilities as well. In Huron County more than 31% felt that swimming facilities were inadequate while over 25% of the consumers in Sanilac County expressed dissatisfaction. Table 37 details a comparison between service consumers' opinions on swimming facilities and county residence.

Table 37.--Comparison of Consumers' Opinions on Swimming Facilities for Huron, Sanilac, and Tuscola Counties, 1974.

County Residence ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Huron County	81	69.2	36	30.7	117	100
Sanilac County	70	73.7	25	26.3	95	100
Tuscola County	52	52.5	47	47.5	99	100

^aDifferences in consumers' opinions among county residences were found to be statistically significant at the .10 probability level.

Differences in opinions among urban, rural non-farm, and farm residents regarding the adequacy of swimming facilities were not found to be statistically significant.

Public Safety Services

Court Services--Consumer opinion differences among the three counties regarding court services were found to be statistically significant. The proportion of Sanilac County consumers expressing dissatisfaction with the adequacy of the court system was almost four times larger than that in Huron County. Twenty-five percent of the Sanilac County consumers considered the court system inadequate for meeting their needs compared with only 7% in Huron County. In Tuscola County, 17% viewed the court system inadequate. Table 38 details a comparison between service consumers' opinions on the court system and county residence.

Differences in consumers' opinions among urban, rural non-farm, and farm residents regarding the adequacy of the court system were not found to be statistically significant.

Table 38.--Comparison of Consumers' Opinions on Court Services for Huron, Sanilac, and Tuscola Counties, 1974.

County Residence ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Huron County	42	93.3	3	6.7	45	100
Sanilac County	36	75.0	12	25.0	48	100
Tuscola County	45	83.3	9	16.7	54	100

^aDifferences in consumers' opinions among county residences were found to be statistically significant at the .10 probability level.

Juvenile Correction Services--The level of response from consumers for juvenile correction services was insufficient for determining whether differences in opinion among counties or among living area locations were statistically significant.

Transportation Services

Local Roads--Consumer opinion differences among the three counties regarding local road conditions were found to be statistically significant. The distribution of responses among the three counties showed that Tuscola and Sanilac County consumers viewed local road conditions less adequate than consumers in Huron County: among consumers in Tuscola and Sanilac Counties, 38% felt local roads were inadequate; and of consumers living in Huron County, 28% viewed local road conditions inadequate. Thus, it seems that consumers felt local road conditions to be somewhat of a problem in all three counties--particularly in Tuscola and Sanilac Counties. Table 39 details a comparison between service consumers' opinions on local road conditions and county residence.

Table 39.--Comparison of Consumers' Opinions on Local Road Conditions for Huron, Sanilac, and Tuscola Counties, 1974.

County Residence ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Huron County	128	71.5	51	28.5	179	100
Sanilac County	110	61.8	68	38.2	178	100
Tuscola County	126	61.5	79	38.5	205	100

^aDifferences in consumers' opinions among county residences were found to be statistically significant at the .10 probability level.

Consumer opinion differences on the condition of local roads among urban, rural non-farm, and farm residents were also found to be statistically significant. Although there was a considerable amount of dissatisfaction expressed by all groups, about 47% of the farm respondents viewed local road conditions inadequate and 36% of rural non-farm residents felt dissatisfied. In contrast, 27% of the urban consumers expressed dissatisfaction with local road conditions. Table 40 is a comparison between consumers' opinions on local road conditions and living area location.

County Road Conditions--Consumer opinion differences among the three counties regarding the adequacy of county roads were also found to be statistically significant. The variation in response showed that, as in the case of local road conditions, Tuscola and Sanilac county respondents felt least satisfied with the adequacy of county road conditions. Over 40% of Tuscola County consumers and 37% of the Sanilac County respondents expressed dissatisfaction. However, a fairly large proportion of Huron respondents were also dissatisfied with the adequacy

Table 40.--Comparison of Consumers' Opinions on Local Road Conditions Among Living Area Locations for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Living Area Locations ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Urban	168	73.0	62	27.0	230	100
Rural Non-farm	114	64.0	64	36.0	178	100
Farm	86	53.4	75	46.6	161	100

^aDifferences in consumers' opinions among living area locations were found to be statistically significant at the .001 probability level.

of county road conditions (28%). Table 41 details a comparison of consumers' opinions on county road conditions and county residence.

Table 41.--Comparison of Consumers' Opinions on County Road Conditions for Huron, Sanilac, and Tuscola Counties, 1974.

County Residence ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Huron County	125	72.2	48	27.7	173	100
Sanilac County	105	61.4	66	38.6	171	100
Tuscola County	119	59.2	82	40.8	201	100

^aDifferences in consumers' opinions among county residences were found to be statistically significant at the .05 probability level.

Similarly, consumer opinion differences among urban, rural non-farm, and farm respondents concerning county road conditions were found to be statistically significant. The distribution of consumer response for opinions on county road conditions followed the same general pattern

of those for local road conditions. It was found that farm respondents were least satisfied (44%) followed by rural non-farm (40%) and urban respondents (29%). Table 42 is a comparison between consumers' opinions on county road conditions and living area location.

Table 42.--Comparison of Consumers' Opinions on County Road Conditions Among Living Area Locations for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Living Area Locations ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Urban	155	70.5	65	29.5	220	100
Rural Non-farm	105	62.1	64	37.9	169	100
Farm	90	55.9	71	44.1	161	100

^aDifferences in consumers' opinions among living area locations were found to be statistically significant at the .02 probability level.

Public Works

Quality of Public Water--Differences in consumers' opinions among the three counties regarding the quality of public water were not found to be statistically significant. The level of response for public water quality was insufficient for determining whether differences in opinions among urban, rural non-farm, and farm respondents were statistically significant.

Sanitary Landfill Facilities--Consumer opinion differences among the three counties on sanitary landfill facilities were not found to be statistically significant.

Differences in opinions, however, among urban, rural non-farm, and farm respondents were found to differ significantly. In examining the variation in consumer response it was found that over twice the proportion of rural non-farm than urban consumers viewed sanitary landfill facilities inadequate. Over 26% of rural non-farm consumers were dissatisfied with the adequacy of sanitary landfill facilities compared with 13% of the urban consumers. A little over 17% of the farm respondents expressed dissatisfaction with the adequacy of sanitary landfill facilities. Table 43 details a comparison between service consumers opinions on sanitary landfill facilities and living area location.

Table 43.--Comparison of Consumers' Opinions on Sanitary Landfill Facilities Among Living Area Locations for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Living Area Locations ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Urban	134	87.4	20	12.6	159	100
Rural Non-farm	82	73.9	29	26.1	111	100
Farm	86	82.7	18	17.3	104	100

^aDifferences in consumers' opinions among living area locations were found to be statistically significant at the .02 probability level.

Special Services

The level of response from consumers regarding services for the physically handicapped and special care for the retarded was insufficient for determining whether differences in opinions were statistically significant.

Part III
Comparison of Consumers' Opinions
Among Selected Socio-economic Groups

The discussion in Part III focuses on an examination of consumers' opinions among age, length of residence, occupation, sex, marital status, familial status, income, and education groups in the study area. As in Part II, particular attention is given to opinion differences among these socio-economic groups that were found to be statistically significant (at $\alpha = .10$). Centering on these opinion differences, therefore, identifies which socio-economic characteristics are most closely associated with consumer dissatisfaction for those services that were selected for analysis (i.e., the two services in each service category that consumers found least satisfactory). This analysis, in turn, helps to focus attention on possible opportunities for improving services to socio-economic groups.

Education Services

High School Services--In an analysis on the adequacy of high school services, differences in consumers' opinions among sex and education groups were found to be statistically significant.

Almost twice the proportion of females compared to males found high school services unsatisfactory. Over 22% of the female respondents expressed dissatisfaction with the adequacy of high school services compared with 12% of the males. Table 44 details a comparison between the opinions of males and females regarding the adequacy of high school services.

In differing levels of educational attainment, it was generally found that those who had education beyond high school were less satisfied with high school services than those who did not. Almost 29% of those

Table 44.--Comparison of Consumers' Opinions on High School Services Between Males and Females for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Sex ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Male	247	88.2	33	11.8	280	100
Female	169	77.2	50	22.8	219	100

^aDifferences in opinions between males and females were found to be statistically significant at the .001 probability level.

who graduated from college and 23% who completed vocational training school were dissatisfied with high school services. In contrast, only 8% of those who completed grades 9-11 and 15% who graduated from high school were dissatisfied with high school services. Table 45 depicts a comparison between consumers' opinions on high school services and level of education.

Consumer opinion differences among occupation, marital status, familial status, and income groups were not found to be statistically significant for high school services. The level of response was insufficient for determining whether differences were statistically significant.

Preschool Services--In examining preschool services, opinion differences between males and females and between those with children living at home and those with no children living at home were not found to be statistically significant; the level of consumer response was insufficient for determining whether differences in consumers' opinions among age, length of residence, occupation, marital status, income, and educational groups in the study area were statistically significant.

Table 45.--Comparison of Consumers' Opinions on High School Services Among Levels of Education for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Levels of Education ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Grades 0-8	51	82.3	11	17.7	62	100
Grades 9-11	54	91.5	5	8.5	59	100
High School Graduate	204	85.4	35	14.6	239	100
Completed Voc. School	17	77.3	5	22.7	22	100
College 1-3 Yrs.	43	84.3	8	15.7	51	100
College Graduate	45	71.4	18	28.6	63	100

^aDifferences in consumers' opinions among educational groups were found to be statistically significant at the .10 probability level.

Health Services

Alcohol Rehabilitation and Family Planning Services--The level of consumer response for alcohol rehabilitation and family planning services was insufficient for determining whether opinion differences among socio-economic groups were statistically significant.

Mental Health Services--Differences in male and female opinions concerning mental health services were found to be statistically significant. Almost four times the proportion of female consumers (42%) to male consumers (11%) viewed mental health services inadequate. Table 46 is a comparison of opinions between males and females regarding the adequacy of mental health services.

The level of response for mental health services was insufficient for determining whether differences in consumers' opinions among age,

Table 46.--Comparison of Consumers' Opinions on Mental Health Services Between Males and Females for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Sex Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Male	23	88.5	3	11.5	26	100
Female	15	57.7	11	42.3	26	100

^aDifferences in consumers' opinions between males and females were found to be statistically significant at the .02 probability level.

length of residence, occupation, marital status, familial status, income and educational groups were statistically significant.

Recreation Services

School Recreation Facilities for Use by Whole Community--Concerning school recreation facilities for community use, respondent differences between males and females and among familial status groups were not found to be statistically significant. The response level was insufficient for determining whether consumer opinion differences among age, length of residence, occupation, marital status, income and educational groups were statistically significant.

Swimming Facilities--Differences in opinions on swimming facilities between those people who have had children and those who have not were found to be statistically significant. A greater proportion of service consumers who have had children felt less satisfied with the adequacy of swimming facilities (36%) when compared to those who have never had children (20%). Table 47 details a comparison between the opinions of those who have had children and those who have not had children.

Table 47.--Comparison of Consumers' Opinions on Swimming Facilities Between Familial Status Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Familial Status Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Consumers Who Have Had Children	181	64.2	101	35.8	282	100
Consumers Who Never Had Children	24	80.0	6	20.0	30	100

^aDifferences in consumers' opinions between familial status groups were found to be statistically significant at the .10 probability level.

Differences regarding swimming facilities among length of residence, occupation, sex, marital status, income, and educational groups were not found to be statistically significant.

Public Safety Services

Court System--For the court system, consumers' opinions between males and females and whether the respondent had children living at home were not found to be statistically significant. The level of response was insufficient for determining statistical significance of age, length of residence, occupation, marital status, familial status, income and educational groups in the study area.

Juvenile Correction Services--The level of consumer response for juvenile correction services was insufficient for determining whether opinion differences among socio-economic groups were statistically significant.

Transportation Services

Condition of Local Roads--Differences between male and female

consumers on local road conditions were found to be statistically significant. A larger proportion of females than males viewed the condition of local roads inadequate. Almost 40% of the female respondents viewed local road conditions not adequate versus 32% of the male respondents. Table 48 details a comparison between males and females regarding local road conditions.

Table 48.--Comparison of Consumers' Opinions on Local Road Conditions Between Males and Females for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Sex Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Male	225	67.6	108	32.4	333	100
Female	141	60.3	93	39.7	234	100

^aDifferences in consumers' opinions between males and females were found to be statistically significant at the .10 probability level.

Consumer opinion differences on local road conditions, based on length of residence, occupation, marital status, familial status, income and educational groups were not found to be statistically significant.

County Road Conditions--In occupational and family status groups opinion differences on county road conditions were found to be statistically significant.

Of the occupational groups, housewives were found to be least satisfied with county road conditions with over 45% of the respondents

expressing dissatisfaction. Table 49 depicts a comparison of consumers' opinions on county road conditions among occupational groups.

Table 49.--Comparison of Consumers' Opinions on County Road Conditions Among Occupational Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Occupational Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Professional/Technical	52	60.5	34	39.5	86	100
Mgr./Adm.	17	56.2	13	43.3	30	100
Sales and Clerical	38	67.9	18	32.1	56	100
Craftsmen/Factory	72	63.7	41	36.3	113	100
Farmers	33	62.3	20	37.7	53	100
Service Workers	24	88.9	3	11.1	27	100
Retired	47	70.1	20	29.8	67	100
Unemployed/Handicapped	5	55.6	4	44.4	9	100
Housewife	56	54.9	46	45.1	102	100

^aDifferences in consumers' opinions among occupational groups were found to be statistically significant at the .10 probability level.

It was also found that for familial status groups, those with children living at home were slightly less satisfied with county road conditions (39%) than those without children living at home (31%).

Table 50 depicts a comparison of opinions of these two groups.

Differences in consumers' opinions based on age, length of residence, sex, marital status, income, and educational groups for county road conditions were not found to be statistically significant.

Table 50.--Comparison of Consumers' Opinions on County Road Conditions Between Family Status Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Familial Status Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Children Living at Home	217	61.1	138	38.9	355	100
No Children Living at Home	133	68.6	61	31.4	194	100

^aDifferences in consumers' opinions between familial status groups were found to be statistically significant at the .10 probability level.

Public Works Services

Quality of Public Water--Differences in consumers' opinions on water quality between those with children living at home and those with no children living at home were found to be statistically significant. It was found that those who had no children living at home were least satisfied with water quality (15%) when compared to families with children living at home (8%). Table 51 depicts the percentage distribution of this variable.

Respondent opinion differences on public water quality, however, between sex and marital status groups were not found to be statistically significant. The level of response was insufficient for determining whether differences in opinions among age, length of residence, occupation, income and educational groups were statistically significant.

Sanitary Landfill Facilities--Consumer opinion differences on sanitary landfill facilities in length of residence groups were found to be statistically significant. Those who had lived in their county a

Table 51.--Comparison of Consumers' Opinions on Water Quality Among Family Status Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Familial Status Groups ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Children Living at Home	181	92.3	15	7.7	196	100
No Children Living at Home	121	84.6	22	15.4	143	100

^aDifferences in consumers' opinions between familial status groups were found to be statistically significant at the .05 probability level.

longer period of time (40-70+ yrs.) felt comparatively more satisfied with sanitary landfill facilities than those who had lived in the county a shorter period of time (0-39 yrs.). Table 52 details a comparison of consumers' opinions among length of residence groups regarding the adequacy of sanitary landfill facilities.

Differences in consumers' opinions on the adequacy of sanitary landfill facilities among age, sex, marital status, familial status, and educational groups were not found to be statistically significant. The level of response was insufficient for determining whether differences in opinions among occupation and income were statistically significant.

Special Services

The level of consumer response for training-education for the physically handicapped or special care for the retarded was insufficient for determining whether difference in opinion among all socio-economic groups were statistically significant.

Table 52.--Comparison of Consumers' Opinions on Sanitary Landfill Facilities Among Length of Residence Groups for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Length of Resident Groups ^a (years)	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
0-9	56	74.7	19	25.3	75	100
10-29	98	81.0	23	19.0	121	100
30-39	38	74.5	13	25.5	51	100
40-49	56	94.9	3	5.1	59	100
50-59	30	90.9	3	9.1	33	100
60-69	18	85.7	3	14.3	2	100
70+	12	85.7	2	14.3	14	100

^aDifferences in consumers' opinions among length of residence groups were found to be statistically significant at the .10 probability level.

Part IV Overview of Local Public Official Opinions

The discussion in this part concerns how local public officials as a group, viewed the adequacy of the community services for the area as a whole. (The level of response from local public officials was insufficient for reporting statistically reliable survey results by county.) This discussion emphasizes two services that local public officials thought were most and least adequate in each major service category; the discussion also focuses on officials' opinions for the other services as well. Consistent with the order of discussion in the prior section, each major service category is presented in the same order as it appeared in the survey instrument.

Education Services

The two community services local public officials found most adequate were the cooperative extension services and public library facilities. Almost 98% viewed cooperative extension services adequate. while 93% viewed public library facilities adequate. The distribution of response for opinions on elementary education and community college education was not however markedly different from the two services viewed elementary and community college services adequate.

The two services viewed least adequate were preschool and high school services. Over 15% of the officials felt dissatisfied with preschool services while over 18% were critical of high school services. Also, 12% of the respondents felt dissatisfied with adult education in high schools. The distribution of opinion for the education services is given in Table 53.

Health Services

Of the health services surveyed, local public officials felt most satisfied with general hospital services (97%) and hospital emergency room services (95%). Public officials also seemed satisfied with immunization, dentist, nursing, ambulance, and maternal and child health care. Over 90% were satisfied with these services.

On the other hand, local public officials felt least satisfied with doctor services with 12% viewing this service not adequate and mental health services with 17% dissatisfied with this service. Table 54 details the opinions on health services.

Table 53.--Distribution of Local Public Officials' Opinions on Education Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Education Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Cooperative Extension	45	97.8	1	2.2	46	100
Public Library	72	93.5	5	6.5	77	100
Elementary Education	88	92.6	7	7.4	95	100
Community College Ed.	20	90.9	2	9.1	22	100
Adult Ed. in High School	30	88.2	4	11.8	34	100
Preschool	16	84.2	3	15.8	19	100
High School	75	81.5	17	18.5	92	100
Adult Ed. in Comm. College*	9	81.8	2	18.2	11	100
Vocational Education*	7	77.8	2	22.2	9	100

*Denotes results that were statistically unreliable due to low level of response.

Table 54.--Distribution of Local Public Officials' Opinions on Health Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Health Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
General Hospital	111	97.4	3	2.6	114	100
Hospital Emergency Room	84	95.4	4	4.5	88	100
Immunization	36	94.7	2	5.3	38	100
Dentist	103	94.5	6	5.5	109	100
Nursing	17	94.4	1	5.6	18	100
Ambulance	48	94.1	3	5.9	51	100
Maternal and Child Health	9	90.0	1	10.0	10	100
Doctor	99	87.6	14	12.4	113	100
Mental Health	10	83.3	2	16.7	12	100
Alcohol Rehabilitation*	4	80.0	1	20.0	5	100
Drug Rehabilitation*	4	80.0	1	20.0	5	100
Family Planning	-	-	-	-	-	-
Home Health Nursing	-	-	-	-	-	-

* Denotes results that were statistically unreliable due to a low level of response.

Recreation Services

Local public officials felt most satisfied with organized adult recreation and organized recreation for youth. Over 93% found organized adult recreation adequate and 88% viewed organized recreation for youth adequate.

The two recreation services that this group viewed least adequate were picnic areas and camping areas. In both cases, over 17% of the officials found these services not adequate for meeting their individual or family needs. In addition, 14% expressed dissatisfaction with school recreation for community use. Table 55 further details local public officials' opinions for recreation services.

Table 55.--Distribution of Local Public Officials' Opinions on Recreation Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Recreation Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Organized Adult Rec.	14	93.3	1	6.7	15	100
Organized Rec. for Youth	36	87.8	5	12.2	41	100
School Rec. Fac. for Community Use	37	86.1	6	13.9	42	100
Picnic Areas	63	82.9	3	17.1	76	100
Camping Areas	28	82.4	6	17.6	34	100
Organized Rec. for Sr. Citiz.*	5	71.4	2	28.6	7	100
Swimming Facilities*	29	59.2	20	40.8	49	100

*Denotes results that were statistically unreliable due to low level of response.

Public Safety Services

Of the public safety services, local public officials viewed fire and police protection most adequate. Over 96% of the officials were satisfied with the adequacy of fire protection, and over 88% found police protection services adequate.

In contrast, court services and juvenile correction services were viewed least adequate. Thirteen percent of the officials were critical of court services while over 18% were dissatisfied with juvenile correction services. Table 56 details the distribution of opinions for public safety services.

Table 56.--Distribution of Local Public Officials' Opinions on Public Safety Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Public Safety Services						
Fire Protection	55	96.5	2	3.5	57	100
Police Protection	53	88.3	7	11.7	60	100
Court Services	20	87.0	3	13.0	23	100
Juvenile Correction	9	81.8	2	18.2	11	100

Transportation Services

In surveying transportation services, local officials felt most satisfied with school bus services and scheduled airline services. In both cases, 95% of the local public officials viewed these services as adequate. Other transportation services that officials found comparatively adequate were commercial trucking (95%), road plowing for local roads (90%), and the condition of state highways (89%).

In contrast, the condition of county roads and the condition of local roads were viewed least adequate by local public officials. Almost 24% felt dissatisfied with the condition of county roads and over 27% were critical of local road conditions. Table 57 depicts the distribution of opinion for the transportation services.

Table 57.--Distribution of Local Public Officials' Opinions on Transportation Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Transportation Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
School Bus	79	95.2	4	4.8	83	100
Scheduled Airline	38	95.0	2	5.0	40	100
Commercial Trucking	55	94.8	3	5.2	58	100
Rd. Plowing for Local Roads	85	89.5	10	10.5	95	100
Condition of State Highways	75	89.3	9	10.7	84	100
Condition of County Roads	67	76.1	21	23.9	88	100
Condition of Local Roads	67	72.8	25	27.2	92	100
Bus Service Between Towns*	4	66.7	2	33.3	6	100
Freight Rail*	22	57.9	16	42.1	38	100
Condition of Bridges*	42	53.2	37	46.8	79	100

*Denotes results that were statistically unreliable due to low level of response.

Public Works Services

In the public works category, no opinions were given for garbage disposal services; therefore, since there are only three services in this

category with a sufficient level of response, the one service found most adequate and least adequate will be discussed.

Public sewer was the service viewed most adequate by local public officials with almost 90% of the respondents satisfied with this service. The quality of public water, on the other hand, was viewed least adequate with almost 15% dissatisfied with public water quality (although the question on water quality did not designate use, e.g., drinking, industrial, it is assumed that most respondents evaluated water quality for household purposes). Complete distribution of opinions for public works services is given in Table 58.

Table 58.--Distribution of Local Public Officials' Opinions on Public Works Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Public Works Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Public Sewer System	34	89.5	4	10.5	38	100
Sanitary Landfill Facil.	66	86.8	10	13.2	76	100
Quality of Public Water	47	85.5	8	14.5	55	100
Garbage Disposal	-	-	-	-	-	-

Special Services

The level of officials' response was insufficient for drawing statistically reliable conclusions for all but one of the special services. It was found that for special care for the retarded, 70% of the local officials found this service adequate while 30% were dissatisfied with the service. Table 59 depicts the results for this service category.

Table 59.--Distribution of Local Public Officials' Opinions on Special Services for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Special Services	Officials' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Special Care for the Retarded	7	70.0	3	30.0	10	100
Financial Aid to Low Income Families*	4	80.0	1	20.0	5	100
Family Counseling for Personal Problems	-	-	-	-	-	-
Trng.-Ed. for Physically Handicapped*	4	80.0	1	20.0	5	100
Housing Facilities for Low Income	-	-	-	-	-	-
Job Training for Low Income Adults	-	-	-	-	-	-
Child Day Care	-	-	-	-	-	-
Family Counseling for Financial Problems*	1	50.0	1	50.0	2	100
Housing Facilities for the Elderly	-	-	-	-	-	-
Legal Services for Low Income	-	-	-	-	-	-
Provision of Food Service to Elderly	-	-	-	-	-	-

*Denotes results that were statistically unreliable due to low level of response.

Part V
Comparison of Opinions Between
Consumers and Local Public Officials

An examination of consumer opinions and local public officials' opinions is explored in this part. As in Parts II and III, particular attention will be given to opinion differences between these groups that were found to be statistically significant (at $\alpha = .10$). Centering on these opinion differences pinpoints, with a high degree of probability (90%), the relative distribution of opinions between these two groups for a given service.

An analysis of the differences between consumers and local public officials' opinions was undertaken for the preceeding services that consumers found least adequate: (i.e., preschools, high school, alcohol rehabilitation, family planning, mental health, school recreation facilities for community use, swimming facilities, courts, juvenile correction, local road conditions, county road conditions, public water, sanitary landfill, training/education for physically handicapped, special care for the retarded).

Differences regarding the adequacy of high school services, preschool services, court services, local road conditions, water quality, and sanitary landfill facilities were not found to be statistically significant (at $\alpha = .10$). (That is, this author can not say that there is a high degree of certainty--90%--that these are actual opinion differences and not due to chance.) Both consumers and local public officials, however, found these services least adequate among the services in each service category.

The level of response was not sufficient for determining whether opinion differences between service consumers and local public officials

for the following services were statistically significant: alcohol rehabilitation, family planning, mental health, school recreation facilities, swimming facilities, juvenile correction, training/education for the physically handicapped or special care for the retarded.

In examining opinions of consumers and officials concerning the adequacy of county roads, opinion differences between the two respondent groups were found to be statistically significant.

In examining the variability in opinions between these two groups, it was found that a fairly large proportion of both groups seemed to be dissatisfied with the condition of county roads. A larger proportion of service consumers, however, expressed greater dissatisfaction with county road conditions than did local public officials. Almost 37% of the consumers felt dissatisfied with county roads compared with 23% of the officials. Table 60 details a comparison of response between service consumers and local public officials for this service.

Table 60.--Comparison Between Consumers and Local Public Officials' Opinions on County Road Conditions for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Study Respondent Groups ^a	Respondents' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Service Consumers	358	63.3	208	36.8	566	100
Local Public Officials	66	76.7	20	23.2	86	100

^aDifferences in opinions between consumers and local public officials were found to be statistically significant at the .02 probability level.

Part VI
Suggestions for Community
Service Improvements

Discussion here focuses upon suggestions from consumers and local public officials for improving the two services in each service category that consumers viewed least adequate. These suggestions are not necessarily representative of the total sample due to a minimal number of respondents who offered suggestions. They do, however, help to identify improvement alternatives to local public officials for those services in each service category that seem to offer the greatest opportunity for improvement.

Education Services

Preschool Services--Of the eighteen suggestions for improving preschool services, eight respondents referred to a need to improve the availability of the service by increasing the number of centrally located preschool services. Four respondents indicated that the services should be available to all children regardless of family income (respondents were referring to the fact that several federally subsidized preschool services were not available to children from middle and upper income classes); two respondents referred to a need for better teachers; one said that there should be more parental interest; one indicated a need for more discipline; and one referred to a need for a broader curriculum.

High School Services--There were thirty-six suggestions for improving high school services in the Thumb Area. The largest proportion of respondents (12) referred to a general need to have a greater variety of courses taught in high schools; four respondents indicated that college preparatory courses such as English or math should be improved and

five respondents indicated that vocational-education classes in high schools should be made more readily available. These suggestions may reflect the higher levels of criticism by persons who have completed a vocational-education program and those who have graduated from college. In addition, four of the respondents centered on a need for better guidance counseling, two centered on a need for more teachers, two indicated that there should be more classrooms, three respondents related that more money for high schools was needed, and three indicated a need for better qualified teachers.

Health Services

Alcohol Rehabilitation--Only one respondent commented on alcohol rehabilitation, indicating that there was "poor success" in rehabilitation in relation to the money spent.

Family Planning--One respondent commented that there should be "more openmindedness" in serving the family planning needs of people.

Mental Health Services--There were eight suggestions for improving mental health services. Of these, all but one indicated there was a need for better qualified personnel. One respondent suggested the need for more mental health services.

Recreation Services

School Recreation Facilities for Use by Whole Community--Of the six improvement suggestions for school recreation facilities for community use, four indicated that school recreation facilities should be more accessible to the general public. In addition, two respondents commented that there was a need for better coordination and communication with the public regarding recreation activities.

Swimming Facilities--There were eighty-five suggestions for improving swimming facilities, and the largest proportion of respondents (33) indicated the need for more public swimming pools; six respondents indicated a need for expanding existing facilities. Seven respondents suggested that an enclosed area should be built over pools to permit year-round swimming. Also, fourteen respondents suggested that lake water should be cleaned up, seven suggested that beaches should be cleaner, two suggested that additional public beaches should be provided, and seven respondents indicated that there should be better supervision around pools and beaches.

Public Safety Services

Court Services--There were only six suggestions for improving the court system, four of which indicated that judges were too lenient on criminals, and two respondents suggested that cases should be adjudicated more quickly.

Juvenile Correction Services--There were nine suggestions for improving juvenile correction services. Three respondents suggested that foster home care for delinquents should be more readily available, two respondents indicated that there should be more understanding of juvenile problems, and one suggested that there should be job training and placement, family and individual counseling, recreation opportunities, and remedial help in school work for juvenile delinquents.

Transportation Services

Condition of Local Roads--Of the seventy-two suggestions for improving local road conditions, the largest proportion indicated that

general road repair was needed (i.e., filling chuck holes and resurfacing). Twelve respondents suggested that more road grading was needed, and ten indicated that additional gravel should be used. Also, three respondents indicated that black top should be used on more roads and one indicated that better road drainage was needed.

Condition of County Roads--Suggestions for improving county roads were similar to the improvement suggestions for local roads. Of the seventy-seven suggestions for improving county roads, fifty respondents suggested the need for better road repair (i.e., filling chuck holes and resurfacing), fifteen indicated that more gravel on roads was needed, and six respondents suggested that roads should be graded more often. Additionally, four respondents suggested that blacktop should be used on more roads, one indicated that there should be better shoulders on the roads, and one indicated a need for better drainage.

Public Works Services

Quality of Public Water--There were thirteen suggestions for improving water quality. Seven respondents indicated a general improvement in water quality was needed, two said that the water tasted bad, and two said that bad odor should be eliminated. Also, one respondent said that water pressure was poor, and one said that rust should be removed.

Sanitary Landfill Facilities--Of the twenty-two suggestions for improving sanitary landfill facilities, a large majority of respondents (15) suggested that the hours of usage should be extended. Three respondents said that there was a need to develop additional facilities, one said that sanitation around the facilities should be improved, one indicated that bad odor should be minimized, and one respondent suggested that additional room should be provided for existing facilities.

Special Services

There were no improvement suggestions regarding special care for the retarded. With respect to training-education for the physically handicapped, one respondent indicated that there was a need for physical therapy programs.

Section IV Corroboration of Survey Findings

The following discussion focuses on a comparison between actual conditions of services included in this study as obtained from secondary sources (reviewed in Chapter IV) with consumers' opinions for those same services. This comparison helps corroborate these survey findings on service adequacy, since consumers' opinions may not always reflect prevailing service conditions. A majority of consumers, for example, may consider sanitary landfill facilities generally "adequate" for meeting their needs while, on the other hand, the state health department closes the facilities because of potentially dangerous health conditions. Therefore, if disparities arise between actual service conditions and people's opinions of those same services, doubts should be raised concerning the validity of the survey findings as a basis for suggesting service improvements for rural development. Disparities, however, may also suggest to local public officials that their constituents need to be better informed of actual service conditions.

As noted earlier in Chapter IV, secondary information assessing the conditions of community services was limited and was available for only a small number of services included in this study. Nevertheless, some general observations on relating actual service conditions as assessed in secondary sources to respondents' opinions on those same

services can be made for public library facilities, general hospital services, doctor services, nursing services, dental services, fire protection and sanitary landfill facilities.

Public Library Facilities

Reports that assessed public library facilities in Huron, Sanilac, and Tuscola Counties¹ indicated that although some facilities needed additional shelving space, seating and parking space, the general condition of public library facilities were adequate for meeting people's needs. This same conclusion seemed to be reflected in the overall opinions of service consumers where almost 94% of the consumers in the three counties viewed these facilities adequate for meeting their individual or family needs.²

General Hospital Services

General hospital services for Huron, Sanilac, and Tuscola Counties were assessed in several studies³ in terms of the number of hospital bed care facilities per 1,000 population. (The reader should be reminded that this is only one of several criteria that might be used for assessing the adequacy of general hospital services. Other criteria may

¹For a review of this information see Vilican-Leman Assoc., General Development Plan, Huron County, Michigan, p. 53; Vilican-Leman Assoc., General Development Plan, Sanilac County, Michigan, p. 47; and East Central Michigan Planning and Development Commission, Community Facilities of Tuscola County, Michigan, p. 52.

²See Table 23.

³See Vilican-Leman Assoc., General Development Plan, Huron County, Michigan, p. 47; East Central Michigan Planning and Development Commission, Community Facilities of Sanilac County, Michigan, p. 33; and Vilican-Leman Assoc., General Development Plan, Tuscola County, Michigan, p. 45.

include such things as the availability of diagnostic equipment or professional qualifications of hospital staff.) It was found that the number of hospital bed care facilities in all three counties was sufficient for meeting patient needs.

The survey data also seemed to reflect this somewhat limited assessment of general hospital services. It was found that over 93% of the consumers⁴ viewed general hospital services as "adequate" for meeting their needs.

Doctor Services

In reviewing the information on recommended per capita number of doctors in an area, it was revealed that all three counties had about one-half the per capita number of doctors that is generally recommended by the Michigan State Medical Society. This recommended standard is one doctor per 650 population.⁵ Also, when compared to the state as a whole, the Thumb Area counties had a markedly lower number of doctors immediately available to residents.⁶ Findings on the lack of doctor services also coincided with the survey findings. Of the respondents who viewed doctor services not adequate (19%),⁷ it was found that the overwhelming reason for dissatisfaction was a lack of available doctor services for meeting individual or family needs.

⁴See Table 24.

⁵Michigan Medical Society, telephone interview with John Anthony, Director of the Bureau of Research, East Lansing, Michigan, March 1976.

⁶See Table 8.

⁷See Table 24.

Nursing Services

In contrast to doctor services, it was found that the per capita number of nurses for each of the three counties pretty much coincided with the state average per capita number of nurses⁸ suggesting an adequate number of nurses for serving the health needs of study area residents.

The findings of the survey data seemed to coincide with this data and revealed that respondents found no problems with the numbers of nurses or with nursing services in general. It was, in fact, one of the two health services that consumers viewed most adequate. Almost 95% of the consumers were found to be satisfied with the adequacy of this service.⁹

Dental Services

Although the per capita number of dentists in the study area was not as low as the per capita number of doctors, the ratio of dentists to population was found to be lower than the state figure.¹⁰ This condition was also revealed in the survey findings. Of those respondents dissatisfied with this service, the overwhelming reason given was a lack of available dental services for meeting their individual or family needs.

Fire Services

Studies of fire protection services for two of the three counties in the study area (Huron and Tuscola) indicated a noticeable lack of farm and rural non-farm residences that were not located within the optimum fire protection radius as recommended by the American Insurance

⁸See Table 8.

⁹See Table 24.

¹⁰See Table 8.

Association.¹¹ The study also revealed that people living in towns and villages were much more adequately covered.¹²

The survey findings seemed to coincide with the conclusions of the study on fire services. An analysis regarding the adequacy of fire protection services revealed that consumers' opinions among urban, rural non-farm, and farm residents were statistically significant (at $\alpha = .10$). In reviewing the distribution of consumer response, those living in rural areas were markedly less satisfied with fire protection services than those living in urban areas. Twice the proportion of farm respondents and over four times the proportion of rural non-farm residents compared to urban residents found fire protection services not adequate for meeting their needs. The major complaint of rural residents was that it took fire personnel too long to get to the fire. Table 61 details the distribution of response.

Table 61.--Comparison of Consumers' Opinions on Fire Protection Services Among Living Area Locations for Huron, Sanilac, and Tuscola Counties Combined, 1974.

Living Area Locations ^a	Consumers' Opinions					
	Service Adequate		Service Not Adequate		Total	
	N	%	N	%	N	%
Urban	85	96.6	3	3.4	88	100
Rural Non-farm	35	85.4	5	14.6	41	100
Farm	68	91.3	6	6.9	73	100

^aDifferences in consumers' opinions among living area locations were found to be statistically significant at the .10 probability level.

¹¹See Table 9.

¹²See Vilican-Leman Assoc., General Development Plan, Huron County,

Sanitary Landfill Facilities

Sanitary landfill facilities were assessed in a Vilican-Leman research report for Huron and Tuscola Counties. It was found that a majority of facilities in these counties were "not licensed," were "eye sores," and "health hazards" to residents.¹³ The survey findings, on the other hand, revealed that a majority of the respondents (82%) viewed these facilities adequate.¹⁴ Of those who viewed sanitary landfill facilities not adequate, improvement suggestions centered around hours of usage and the need for additional facilities. In contrast, the major problems of these facilities cited in the Vilican-Leman study focused on potential health hazards and the need to meet the following state licensing criteria as found under Public Acts, 1965, Solid Waste Disposal Act, #87:

A landfill operation shall be under the direction of a responsible individual at all times.

Refuse shall be spread so that it can be compacted in layers not exceeding a depth of two feet of compacted material.

A compacted layer of at least six inches of suitable cover material shall be placed on all exposed refuse by the end of each working day.

Hazardous materials, including liquids and sewage, shall not be disposed of in a sanitary landfill unless special provisions are made for such disposal.

No garbage or refuse containing garbage shall be burned at a sanitary landfill.

The entire site, including the fill surface, shall be graded and provided with drainage facilities.

Consumer improvement suggestions, therefore, did not reflect the more technical service related problems that need to be considered in public decision making.

Michigan, p. 46; and Vilican-Leman Assoc., General Development Plan, Tuscola County, Michigan, p. 26.

¹³ See Vilican-Leman Assoc., General Development Plan, Huron County, Michigan, p. 49; and Vilican-Leman Assoc., General Development Plan, Tuscola County, Michigan, p. 55.

¹⁴ See Table 28.

Summary

On the basis of this information comparing actual service conditions as obtained in secondary sources with opinion information, the survey findings in this study coincided with findings on prevailing service conditions in all but one case (i.e., sanitary landfill facilities). This suggests that, generally speaking, consumers' opinions do seem to reflect prevailing service conditions as measured by other criteria. The exception was in the case of sanitary landfill facilities where the service problems were not obvious to respondents since they had no understanding of state licensing criteria or an awareness of potential health hazards.

Based on this limited information, it is suggested that respondents' opinions do reflect, on a superficial level, actual service conditions, but that their opinions and suggestions for service improvements are based more on immediately obvious conditions than on the more technical considerations.

CHAPTER VI

SUMMARY, CONCLUSIONS, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Introduction

The introductory chapter indicated that the overall intent of this study was to provide some general insights on the adequacy of community services in rural areas of the United States by surveying the opinions of the people in a predominantly rural area of Michigan. It is hoped that these insights will help identify possible service improvement opportunities in rural communities and thus assist in rural community development. To meet the intent of this research, the opinions of 965 consumers and 145 local public officials were analyzed in the three counties of Huron, Sanilac, and Tuscola. These counties are located in Michigan's "Thumb Area." Using identical mailout questionnaires for both consumers and local officials, information was gathered on the following four objectives that were used in guiding this study:

1. To determine consumers and local officials' satisfaction with selected community services.
2. To identify reasons consumers and local officials were dissatisfied with selected community services.
3. To identify socio-economic characteristics most closely associated with consumers' dissatisfaction of selected community services.

4. To determine the differences between consumer and local officials' dissatisfaction with selected community services.

Focusing on consumer satisfaction with specific kinds of services helps, in turn, to identify those services that residents viewed inadequate. Thus, services that are possible barriers to social and economic rural development are pinpointed. Determining local public officials' satisfaction with services was done to compare their opinions with those of the consumers.

Identifying reasons why consumers and officials were dissatisfied with services helps local officials understand some possible opportunities for improving services to rural residents.

The third research objective--that of identifying socio-economic characteristics most closely associated with consumer dissatisfaction--helps to determine whether some segments of the community (e.g., aged, low income, farm residents) view certain services less adequate than other segments; identifying these segments who view a service comparatively less adequate, therefore, helps to pinpoint those groups in the community who may have possible service needs that should be considered in planning rural development efforts.

Identifying service dissatisfaction differences between consumers and local officials helps to determine whether officials reflect the consumers' opinions in their decision making. Identifying differences in viewpoints between consumers and local officials can serve as a basis for dialogue between these two groups which, in turn, could help officials gain a better understanding of possible consumer service needs.

Summary of Findings

The findings for the research objectives will be summarized in three parts. The first part will include a summary of findings for the first and second objectives of this research and will cover (1) a discussion of the two services in each major service category that consumers viewed least adequate for the areas as a whole; (2) a review of the services in each major service category that consumers viewed least adequate in each of the three counties; and a summary of why consumers and local officials were dissatisfied with these services.

The discussion in the second part focuses on findings for the third objective and identifies socio-economic characteristics most closely associated with consumer dissatisfaction of selected services.

The third part of this section is a summary of the differences between consumers' opinions and local officials' opinions of service adequacy.

The community services included in this study were categorized according to the following seven major service categories: education, health, recreation, public safety, transportation, public works, and special services (for a listing of the specific services examined in this study, see pp. 35 and 36).

Part I

Of the two services in each major service category that consumers viewed least adequate, the largest proportion of consumers were least satisfied with the following: local and county roads, swimming facilities, mental health, special care for the retarded, training-education for the physically handicapped, alcohol rehabilitation, family planning, school

recreation for community use, juvenile corrections, sanitary landfill facilities, high school services, court system, preschool services, and quality of public water.

Condition of Local and County Roads

Of the preceding services, the two with the largest proportion of consumer dissatisfaction area were local roads and county roads. Thirty-six percent of the consumers expressed dissatisfaction with road conditions in the study area.

Chuckholes, grading, and the need for more gravel on gravel roads were the major reasons cited for respondents' dissatisfaction with local and county road conditions.

Swimming Facilities

The third largest proportion of consumers in the study area felt dissatisfied with swimming facilities. Almost 35% of the Thumb Area consumers were critical of swimming facilities.

The major problem cited by respondents concerning swimming facilities was a lack of available swimming pools.

Mental Health

Mental health was the service with the fourth largest proportion of consumers expressing dissatisfaction (over 27%).

The largest proportion of respondents felt that people who worked in the field of mental health lacked professional training.

Special Care for the Retarded

The service with the fifth largest proportion of consumer dissatisfaction was special care for the retarded. Almost 27% of the consumers

were dissatisfied with special care for the retarded. No problems for this service, however, were mentioned by respondents.

Training-Education for the Physically Handicapped, Alcohol Rehabilitation, and Family Planning

Training-education for the physically handicapped, alcohol rehabilitation, and family planning were the services with the sixth largest proportion of consumer dissatisfaction. Twenty-five percent of the consumers expressed dissatisfaction with these services.

No problems with training-education for the physically handicapped were mentioned by respondents. With respect to alcohol rehabilitation services, one respondent indicated that there was little success in alcohol rehabilitation in relation to the money spent. With regard to family planning, one respondent indicated that there should be more "open-mindedness" in serving the family planning needs of the people.

School Recreation Facilities for Community Use

School recreation facilities for community use had the seventh largest percentage of service consumers expressing dissatisfaction. Twenty-three percent found this service inadequate.

Juvenile Correction Services

Juvenile correction had the eighth largest proportion of consumers expressing dissatisfaction, with 18% viewing the services not adequate.

Major reasons given for the lack of satisfaction included the need for more foster home care, job training and placement, family and individual counseling, recreational opportunities, and remedial help in school work.

Sanitary Landfill Facilities

The ninth largest proportion of consumers expressed dissatisfaction with sanitary landfill facilities. Almost 18% felt the service to be inadequate.

The major reason given by respondents for their dissatisfaction with sanitary landfill concerned the short hours these facilities were available for public use.

High School Services

The tenth largest proportion of consumers expressed dissatisfaction with high school services (almost 17%).

The major reason that respondents cited for their dissatisfaction involved a lack of variety of courses offered in high school. Respondents felt that additional vocational education and college preparatory courses (e.g., English, mathematics) should be available.

Court Services

Court services had the eleventh largest proportion of service consumers expressing dissatisfaction with over 16% viewing the service inadequate.

Respondents were most critical of leniency on criminals and the length of time it took to adjudicate court cases.

Preschool Services

The twelfth largest proportion of service consumers viewed preschool services least adequate with 14% expressing dissatisfaction.

Respondents felt the number of these services should be increased and should be centrally located within the population centers.

Quality of Public Water

Of the services viewed least adequate among the major service categories, the smallest proportion of service consumers expressed dissatisfaction with public water quality. Eleven percent viewed public water quality inadequate.

Cleaning up the drinking water to eliminate rust and bad odor was the major problem cited.

The following table depicts, in order of magnitude, the proportion of service consumers dissatisfied with the two services in each major service category that were found least adequate.

Variation of Response by County

The following discussion focuses on the two services in each major service category that consumers viewed least adequate in each of the three study area counties. Since many of the same services mentioned in the prior section are included in this discussion, the reasons for consumer dissatisfaction with these services will not be repeated. However, for those services that are mentioned for the first time, the discussion will include reasons that consumers gave for their dissatisfaction.

Huron County

Of the two services considered least adequate in each of the major categories, the largest proportion of consumers in Huron County viewed bridge conditions, swimming facilities, and local roads inadequate. Thirty-three percent of the Huron County consumers viewed bridges inadequate, 31% expressed dissatisfaction with swimming facilities, and 28% were critical of local road conditions.

**Table 62.--Ranking of Selected Services in the Thumb Area of Michigan
According to Consumer Respondent Dissatisfaction.**

Ranking of Selected Services	Consumers Indicating Service NOT Adequate ^a	
	N	%
1. Condition of County Roads	208	36.8
2. Condition of Local Roads	209	35.8
3. Swimming Facilities	112	34.9
4. Mental Health Services	15	27.8
5. Special Care for the Retarded	4	26.7
6. Training-Education for the Physically Handicapped	5	25.0
7. Alcohol Rehabilitation	4	25.0
8. Family Planning	4	25.0
9. School Recreation Facilities for Community Use	46	23.0
10. Juvenile Correction	6	18.2
11. Sanitary Landfill Facilities	67	17.6
12. High School Services	86	16.7
13. Court System	25	16.5
14. Preschool Services	20	13.8
15. Quality of Public Water	38	10.8

^aEach percentage figure is that proportion of the total consumer response for that service indicating dissatisfaction with the service.

With respect to poor bridge conditions, respondents mentioned that many bridges needed repair or replacement. They also mentioned that some needed to be widened to permit an easy flow of traffic, particularly farm machinery.

The services that had the next largest proportion of consumers expressing dissatisfaction in Huron County were family counseling for personal problems, mental health and doctor services. It was found that 25% considered family counseling for personal problems inadequate, and 24% of the consumers considered mental health and doctor services inadequate.

Although no reasons for respondent dissatisfaction were found for family counseling for personal problems, this finding may suggest a lack of qualified personnel in this field. Rural areas, as pointed out in the literature, have had trouble attracting professional people.

With respect to doctor services, respondents felt that there was a significant lack of doctor services for meeting their individual or family needs.

Other services that Huron County consumers considered least adequate among the major service categories were organized recreation for youth, high school services, sanitary landfill facilities, preschool services, police protection, garbage disposal, and the court system.

The problem associated with organized recreation for youth was simply the lack of available activities. No major problems were mentioned by respondents concerning police protection. With respect to garbage disposal, two respondents indicated a general lack of available services.

Table 63 details the percentage ranking for the services that Huron County consumers found least adequate.

Table 63.--Ranking of Selected Services in Huron County According to Consumer Respondent Dissatisfaction.

Ranking of Selected Services	Consumers Indicating Service NOT Adequate ^a	
	N	%
1. Condition of County Roads	47	32.9
2. Swimming Facilities	36	30.8
3. Condition of Local Roads	51	28.5
4. Family Counseling for Personal Problems	3	25.0
5. Mental Health Services	5	23.8
6. Doctor Services	55	23.8
7. Organized Recreation for Youth	17	22.7
8. High School	36	20.7
9. Sanitary Landfill Facilities	18	17.1
10. Preschool Services	8	15.1
11. Police Protection	11	10.7
12. Garbage Disposal	11	9.5
13. Court System	3	6.7

^aEach percentage figure is that proportion of the total consumer response for that service indicating dissatisfaction with the service.

Sanilac County

County roads, bridges, and swimming facilities were three services among the major service categories that Sanilac County consumers considered least adequate. Over 38% of the consumers viewed county roads and bridges inadequate, and 26% expressed dissatisfaction with swimming facilities.

The services with the next largest proportion of consumer dissatisfaction were school recreation facilities for community use, the court system, and vocational education. Over 22% of the respondents were dissatisfied with school recreation facilities for community use while 17% were critical of the court system and vocational education.

The major criticism respondents had with vocational education was the general lack of vocational educational opportunities for residents.

Other services that Sanilac County consumers considered least adequate among the major service categories were adult education in community colleges, police protection, public sewer system, hospital emergency room services, doctor services, and the quality of public water.

Several respondents expressed their dissatisfaction with adult education in community colleges based on the lack of course selection as well as the need to have adult education courses count towards a college degree.

The major criticism respondents had with hospital emergency room services was that doctors were not readily available to treat emergency cases.

Table 64 depicts the percentage ranking for the services that Sanilac County consumers found least adequate.

Table 64.--Ranking of Selected Services in Sanilac County According to Consumer Respondent Dissatisfaction.

Ranking of Selected Services	Consumers Indicating Service NOT Adequate ^a	
	N	%
1. Condition of County Roads	66	38.6
2. Condition of Bridges	46	38.2
3. Swimming Facilities	25	26.3
4. School Recreation Facilities for Community Use	11	22.5
5. Court System	9	16.7
6. Vocational Education	2	16.7
7. Adult Education in Community College	2	15.4
8. Police Protection	13	15.1
9. Public Sewer System	12	14.2
10. Hospital Emergency Room	24	14.2
11. Doctor Services	29	12.9
12. Quality of Public Water	13	12.4

^aEach percentage figure is that proportion of the total consumer response for that service indicating dissatisfaction with the service.

Tuscola County

The three services among the major service categories that consumers in Tuscola County considered least adequate were: swimming facilities, county road conditions, and school recreation facilities for community use. Over 47% viewed swimming facilities inadequate while 41% expressed dissatisfaction with county roads. Almost 26% of the consumers felt school recreation facilities for community use to be inadequate.

A relatively high proportion of Tuscola County consumers also expressed dissatisfaction with the court system, juvenile correction, and mental health services. Twenty-five percent were critical of the court system and juvenile correction, and 21% were critical of mental health services.

Other services among the major service categories that were considered least adequate were doctor services, adult education in high schools, quality of public water, and garbage disposal.

With respect to adult education in high schools, the major complaint of respondents concerned the general lack of course selection.

Table 65 details the percentage ranking for the services that Tuscola County consumers found least adequate.

Part II

A summary of socio-economic characteristics most closely associated with consumer dissatisfaction for selected services--the third study objective--is presented in this part of the discussion. Included in the analysis are the two services in each service category that consumers as a group found least satisfactory for meeting their individual and family needs. Focusing on these services helps to pinpoint several

Table 65.--Ranking of Selected Services in Tuscola County According to Consumer Respondent Dissatisfaction.

Ranking Selected Services	Consumers Indicating Service NOT Adequate ^a	
	N	%
1. Swimming Facilities	47	47.5
2. Condition of County Roads	82	40.8
3. Condition of Local Roads	79	38.5
4. School Recreation Facilities for Community Use	17	25.8
5. Court System	12	25.0
6. Juvenile Correction	3	25.0
7. Mental Health	3	21.4
8. Doctor Services	47	19.0
9. Adult Education in High School	11	15.7
10. High School Services	24	13.6
11. Quality of Public Water	15	13.3
12. Garbage Disposal	16	11.7

^aEach percentage figure is that proportion of the total consumer response for that service indicating dissatisfaction with the service.

alternative services in each category that seem to offer the greatest opportunity for improvement. The socio-economic variables used in this analysis were as follows: county residence, living area (i.e., town or village, farm, rural non-farm), age, length of residence, occupation, sex, marital status, familial status, income, and education. Consistent with the analysis undertaken in this study, the following discussion focuses upon those findings where differences were statistically significant (at $\alpha = .10$).

Living Area Location

Opinion comparisons were made for consumers living on farms, in rural non-farm areas, and in towns. Farm respondents were the group least satisfied with local and county roads. Almost 47% of those living on farms were dissatisfied with local roads while 44% were dissatisfied with county roads. It was also found that rural non-farm residents were least satisfied with sanitary landfill facilities. Over 26% of these respondents found sanitary landfill facilities unsatisfactory.

Sex

Male and female responses were compared and females were found to be least satisfied with mental health services, local roads, and high school services respectively. Over 43% of the females were dissatisfied with mental health services, 40% were dissatisfied with local roads, and 23% felt dissatisfied with high school services.

Familial Status

Consumers who have had children were less satisfied with swimming facilities than those without children. Almost 35% of this group felt

that swimming facilities were inadequate for their individual and family needs.

It was also found that those consumers with children living at home were the most critical of county road conditions. Almost 39% of this group were dissatisfied with county road conditions.

Education

Lastly, college graduates were found to be the group least satisfied with high school services. Almost 29% of the college graduates found high school services unsatisfactory.

Part III

The identification of differences between consumers and local officials concerning dissatisfaction with services, the final objective of this research, is the focus of this discussion. Selected for analysis for this study objective were the two services in each service category that consumers found least satisfactory. The level of response from local officials for some services, however, was insufficient for drawing conclusions. In all cases where sufficient data were available, however, it was found that, among the three counties, local public officials generally reflected the opinions of consumers on those services that consumers viewed least adequate. In the cases where sufficient data were available, consumers and local public officials agreed that, among the major service categories, the following were least adequate for meeting their individual or family needs: high school services, preschool services, mental health services, court services, juvenile correction, local road conditions, county road conditions and public water quality.

In addition to the findings of this research for each of the study objectives, it was also found that consumers' opinions on service adequacy coincided, for the most part, with prevailing service conditions. Prevailing service conditions were assessed by reviewing secondary information as reported in the last half of Chapter IV. Although secondary information on services in the study area was limited and the information was available for only a small number of services included in this study, some general comparisons between people's opinions of service adequacy and prevailing service conditions could be made for public library facilities, general hospital services, doctor services, nursing services, dental services, fire protection, and sanitary landfill facilities.

It was found that consumers' opinions on public library facilities, general hospital services, doctor services, nursing services, dental services, and fire protection services did reflect the prevailing service conditions. Consumers' opinions, however, did not reflect the prevailing service conditions concerning sanitary landfill conditions. On the one hand, a large majority of consumers felt that sanitary landfill facilities were adequate while on the other hand, it was indicated in a research report that most of the existing facilities did not meet state licensing criteria and were potential health hazards.

Conclusions

Based upon the findings of this study, the following conclusions are drawn concerning the adequacy of community services for meeting the individual and family needs of rural residents:

1. Among the services that were selected for analysis, consumers in rural areas tended to be most critical of local and county roads, swimming facilities, and mental health services.

Of the services analyzed, consumers were least satisfied with local and county roads. It is, in fact, a common observation that many rural roads are gravel and often bumpy with numerous chuck holes. Dissatisfaction with local and county conditions may be due to the long distances that rural residents often have to travel over these types of road conditions to obtain services; consequently, they may feel that road conditions over long distances constitute dangerous driving conditions and costly automotive repairs.

The dissatisfaction rural residents expressed with swimming facilities was, according to findings of this study, due to the lack of available swimming pools. This dissatisfaction seems to reflect their preference for swimming as a recreational activity.

Mental health services also had a comparatively high level of dissatisfaction among rural consumers. The background literature also indicated that Kraenzil and MacDonald found inadequacies in rural mental health care as well as a high incidence of mental health problems in rural areas.¹

In this study, the major reason for dissatisfaction with mental health care was that respondents felt that workers in the field lacked professional training. Moreover, rural areas were found to have general difficulty in attracting highly qualified professional people because of relatively low salary levels or a lack of opportunity to associate with colleagues.² Thus, the provision of adequate mental health services may

¹As reported by Anne S. Williams, "Planning Service Delivery Systems for Rural-Sparsely Areas," North Central Regional Center for Rural Development, Aspects of Planning for Public Services in Rural Areas (Ames: Iowa State University, 1976), p. 207.

²Committee on Agriculture and the Environment, National Academy of Sciences, Productive Agriculture and a Quality Environment (Washington, D.C.: National Academy of Sciences, 1974), p. 106.

be a significant problem to rural residents in general because of a lack of professional people to serve the mental health needs of rural residents.

2. Of the problems associated with providing adequate educational services to youth and adults in rural areas, a general lack of course selection is a major problem.

The major criticism consumers had of high school services for both youth and adults as well as adult education in community colleges, was a lack of available course offerings. Kenneth Rainey, in his analysis of rural education, also found a general lack of course selection to be a major problem in providing adequate education to rural residents.³

3. The opinions of service consumers regarding the adequacy of services are generally an accurate reflection of actual service conditions in rural areas.

This study revealed that consumers' opinions generally reflected prevailing service conditions for all but one service (sanitary landfill facilities). Consumers' opinions on the adequacy of public library facilities, general hospital services, doctors' services, nursing services, dental services, and fire protection generally coincided with actual conditions.

4. People living in more rural or sparsely settled areas are less satisfied with a greater number of services than are people living in more urban areas (i.e., cities, towns, or villages).

³Kenneth Rainey, "Public Services in Rural Areas," p. 18.

Rural consumers were found to be less satisfied with roads and sanitary landfill facilities than were those living in more urban areas (i.e., towns or villages).

This general association was also found in three previous studies: John Bollens found that county residents were less satisfied with sewage disposal than were city residents.⁴ Don Dillman found, as in this study, that those living in rural areas viewed streets as less adequate than urban people;⁵ he also found rural residents less satisfied than urban residents with medical care. In addition, Johnson and Knop found rural residents less satisfied than urban residents with shopping, medical care, and employment opportunities.⁶

In the case of roads, sanitary landfill facilities, medical care, or shopping centers, the distances, effort, time, and expense that rural residents incur in obtaining these kinds of services is often greater than their urban counterparts face. Kenneth Rainey also identified these same problems in his article entitled "Public Services in Rural Areas."⁷ These problems would very likely be contributing factors to the dissatisfaction that rural residents expressed with these services.

5. Females are less satisfied with a greater number of services than are males in rural areas.

⁴See John Bollens, Exploring the Metropolitan Community (L.A.: University of California Press, 1961).

⁵See Don Dillman, Public Values and Concerns of Washington Residents (Washington State University: Agriculture Experiment Station Bulletin, 1970).

⁶See Ronald Johnson and Edward Knop, "Rural-Urban Differences in Community Satisfaction" Rural Sociology, Vol. 35, No. 4, December 1970.

⁷See Kenneth Rainey, "Public Services in Rural Areas."

In this study, females were found to be less satisfied than males with high school services, mental health services, and road conditions. It was also found in the Wisconsin study that more women than men generally favored expansion of health, mental health, police protection, and adult education, suggesting that a greater proportion of women than men were dissatisfied with the adequacy of these services.⁸

The dissatisfaction that females expressed with high school services may be the result of their role as mothers in which they may have a greater sensitivity and concern for the educational needs of their children than do men.

This same sensitivity may also be reflected in their general dissatisfaction with mental health services. Women may be more sensitive to the emotional needs of their children as well as to the rest of their family than men. This result may also suggest that women have mental health needs that are not met.

The finding that women expressed greater dissatisfaction with roads than men may be due to several reasons: First, women traditionally do a fair amount of driving, particularly in doing family errands such as taking the children to various activities or shopping. They may have a greater fear than men of bad road conditions because of a concern for the safety of their children or themselves. A woman's concern for the safety of her children on rough roads may also be suggested by the findings in this study that a larger proportion of those families with children living at home were less satisfied with road conditions than those families with no children living at home. A second possible reason why

⁸See Virginia Lambert et al., Public Service, Programs and Policy in Farm Northwestern Wisconsin Counties (Madison: Institute for Environmental Studies, 1974).

women were more critical of road conditions than men may be that women feel less prepared to deal with emergency road situations than do men.

6. Local public officials' opinions may reflect consumers' opinions of service adequacy in rural areas.

A similarity in views of service adequacy between officials and consumers found in this study might be due to a close interaction local public officials in rural areas may have with their constituents; thus, local officials can empathize with the views of their constituents.

Implications of the Study for the
Development of Rural Communities

This section focuses on the implications of conclusions for development in rural communities. Rural communities, as pointed out, have experienced problems of outmigration of young people, along with deteriorating economies. Improving services, on the other hand, is an important prerequisite for encouraging economic and social development of rural areas. It is hoped that the implications of these findings may suggest opportunities for improving rural community services and, thus, the quality of life for rural people.

Among the services that were analyzed in this study, it was concluded that consumers were least satisfied with local and county roads, swimming facilities, and mental health services. These services represent a broad range of services related to transportation, recreation, and health; this conclusion may suggest that local community leaders and citizens should be conscious of a broad range of service improvement opportunities.

It was also concluded that of the problems associated with providing adequate education services to youth and adults in rural areas, a

general lack of course selection is a major problem. The provision of adequate educational curricula is essential for the social and economic development of rural communities. The availability of craft or hobby related courses, for example, serves to enrich many peoples' lives. A wide range of vocational courses is important for job preparation and changing employment opportunities for rural residents. Also, a wide range of educational courses (i.e., English, mathematics, social studies) is an important foundation for further learning. Thus, it is suggested that rural leaders identify what rural residents desire in the way of educational courses, what seems feasible in the way of human and other resources available to a rural area, and what types of curricula might be important as a prerequisite for future employment to rural residents. Undertaking these efforts would enhance the general well-being of people living in rural areas as well as encourage the economic development of rural communities.

Another conclusion of this study indicated that the opinions of service consumers regarding the adequacy of services are generally an accurate reflection of actual service conditions in rural areas. This conclusion implies that consumers' opinions of service adequacy are useful indicators of actual service conditions in rural areas and, thus, useful for assessing and planning future service improvements in rural communities. Rural leaders, therefore, should consider obtaining periodic insights from consumers on service adequacy to supplement their planning and decision making.

It was also concluded that people living in more rural or sparsely settled areas are less satisfied with a greater number of services than are people living in more urban areas (i.e., cities, towns, villages).

Given that consumers' opinions of service adequacy are a general indicator of actual service conditions as indicated above, the implication of this conclusion helps to confirm the observation made in the review of literature--that services to rural residents are generally inferior to those for urban residents. Thus, this conclusion has particularly relevant implications for developing national growth policies in the United States. If, in fact, rural services are generally inferior to urban services, and if providing adequate services is an important prerequisite to the social and economic development of rural communities, then rural areas on the whole are at a competitive disadvantage in developing socially and economically. To help insure equitable opportunities for rural development, national and state leaders may want to reexamine their public spending priorities and make greater efforts for improving rural services.

The study concluded that females are less satisfied with a greater number of services than are males in rural areas. This finding may suggest that women, as a group, have sensitivities and insights that would be of benefit to rural development practitioners for improving services. Women may bring critical insights to a situation as a consequence of their roles as mothers, homemakers, or working women. Being a mother and homemaker, for example, a woman may have a better understanding of a child's educational or health needs than would a father. Rural leaders, therefore, should be advised to consult with concerned women in order to gain a greater understanding of service improvement opportunities.

A final conclusion of this study indicated that local public officials' opinions may serve as a general indicator of consumers' opinions of service adequacy in rural areas. The implication of this conclusion

for rural development is that those who want to better understand service conditions (i.e., community development workers) could get a general understanding of service conditions in rural areas by contacting the local public officials. This conclusion, however, does not suggest that local public officials could provide insights into specific service problems or needs of various clientele groups. These insights and support for improving services to rural residents could be obtained through citizen participation in decision making.

Direct Implications of the Findings for the Development of the Thumb Area of Michigan

Of the two services in each major service category that consumers found least adequate, the largest proportion of study area consumers felt least satisfied with local and county roads, swimming facilities, and mental health services respectively. Moreover, a large proportion of consumers in Huron and Sanilac Counties were critical of bridge conditions. Thumb Area officials, therefore, may want to pay particular attention to improving these services.

Improvement of local and county roads should be given special attention, particularly in Tuscola County. However, problems with roads seemed to be indicated by residents in Huron and Sanilac Counties as well. Patching chuck holes, grading gravel roads in rural areas, and using asphalt surfacing where possible were the major improvement suggestions.

Tuscola County officials particularly should also consider improving swimming facilities, since the largest proportion of respondents in this county felt least satisfied with this category. The provision of additional facilities for year round swimming was the major suggestion

for improvement. Improvement opportunities might be investigated in Huron and Sanilac Counties as well since a relatively large proportion of people in these counties also expressed dissatisfaction with swimming facilities. In addition, for the area as a whole, families with children living at home were least satisfied with this service. Families with children would be expected to be more familiar with swimming facilities since a larger proportion of children than adults usually go swimming. Planning for the improvement of swimming facilities, therefore, might include the specific needs of children, such as water safety training, swimming lessons or the insuring of safe swimming conditions.

Mental health should also be given special attention for possible improvement in all three counties since this service had the fourth largest proportion of consumer dissatisfaction. A significantly larger proportion of females than males expressed dissatisfaction with this service. This result may be due to the fact that females may be more sensitive to mental problems than males, and/or that the mental health needs of females are not being met. It is suggested that Thumb Area officials give particular attention to investigating whether, in fact, the mental health needs of females are being met. The major improvement suggestion given by respondents involved the need for additional staff training to better meet the mental health needs of patients.

With regard to improving bridge conditions in Huron and Sanilac Counties, special attention should be given to repairing delapidated bridges, widening those that inhibit the free flow of traffic and farm machinery, and replacing those that are beyond repair.

In addition to these services, Thumb Area officials may also want to work toward improving special care for the retarded, training-education

for the physically handicapped, alcohol rehabilitation, family planning, and school recreation facilities for community use. These services had the next largest proportion of consumers expressing dissatisfaction. The small number of respondents to these special services made statistical analysis impossible. The identification of socio-economic characteristics most related to dissatisfaction with the services was therefore not possible. Also, no suggestions for service improvements were provided by the respondents for special care for the retarded or training-education for the physically handicapped, and only one suggestion was given for improving alcohol rehabilitation or family planning. Since these services had comparatively large proportions of consumers dissatisfied, it is suggested that Thumb Area officials should further investigate the needs of people using these services. In addition, a case study approach concerning each service is recommended in order to acquire sufficient information for making additional conclusions.

The number of responses for school recreation facilities for community use was also limited. However, based on suggestions for service improvement, it is recommended that Thumb Area officials consider improving the availability of these facilities by providing extended hours and/or supporting an individual responsible for coordinating community recreational activity in high schools.

Other services that were found to be comparatively less adequate by consumers among the major service categories were: juvenile correction, sanitary landfill facilities, high school services, court services, pre-school services, and quality of public water.

Thumb Area officials might also consider improving juvenile correction services such as improving foster home care, job training and

placement, family and individual counseling, recreational activity and remedial help in school work for delinquents.

Thumb Area officials might consider improving sanitary landfill facilities for residents in the three counties, particularly in rural areas. Both the respondents and the secondary information reflected a need for improving this service by extending hours of usage, providing additional sanitary landfill facilities and, as noted earlier, meeting state statutory requirements.

Since high school and preschool services were considered comparatively less adequate by respondents, Thumb Area officials might consider the alternatives suggested by respondents for improving these services to local residents. For high schools, this might particularly include upgrading vocational-educational programs such as expanding course offerings or informing students of the different vocational opportunities. For preschool services, respondents emphasized the need to have additional preschool services.

Thumb Area officials may want to pay special attention to improving court services, particularly in Sanilac County since residents in this county were least satisfied with this service. Adjudicating court cases more quickly and minimizing leniency on criminals were the major improvement suggestions.

For improving public water quality, Thumb Area officials should filter out insolubles, eliminate bad odors, and improve water pressure where possible.

Policy Recommendations for Thumb Area Officials

There were a number of possible service needs expressed by Thumb Area residents. However, as in many rural communities, resources for

meeting people's needs are limited. Therefore, priorities for service improvement need to be identified by Thumb officials. The results of this research suggest that for the three counties as a whole, Thumb Area officials should concentrate on improving county and local roads, swimming facilities, and mental health services. These results, therefore, may serve as a possible guide for improving Thumb Area services.

Concern for improving community services seemed to be indicated by people's willingness to respond to this study and suggest service improvements. Thumb Area officials, therefore, should identify and utilize the wide variety of resources and talents of interested citizens and leaders for improving services in the community.

The activities undertaken in upgrading community service should include a working relationship with members representing the different organizations in the community including, for example, business, government, religious, cultural and educational organizations in order that the community service needs from a variety of groups be considered. The establishment of a citizens' committee made up of people representing these different organizations is recommended.

Educational programs by Extension or other adult educational units to inform Thumb Area residents of the results of this research should be undertaken with the guidance, encouragement, and support of county commissioners, Human Development Commission staff members, regional officials, community-wide organizations, and other interested leaders representing various segments of the community. Such education programs could be a part of other on-going community gatherings such as county commission meetings, civic club luncheons, or regional hearings concerning subject matter that may be relevant to this research. Disseminating

this type of information is important for helping local leaders and citizens understand alternative development possibilities for improving their services.

Types of federal or state assistance for improving local services that fit within the priorities for local program development should be explored. Further, Thumb Area officials should explore the possibility of acquiring professional help to identify, prepare, and follow through on possible federal or state financial/technical assistance.

Limitations of the Study

This was an exploratory study designed to help local public officials gain insights for improving rural services. Although this study was scientific in its approach and involved a significant amount of in-depth research, there are limitations to the generalizability of the findings. The following discussion, therefore, focuses on several limitations involved with this study.

One Area at One Point in Time

The first limitation of the study relates to the fact that it was undertaken in one area at one point in time; people's opinions, however, may differ from one region to another, or from one year to another. A replication of this study, therefore, would be necessary to generalize these findings over different regions and time periods.

Bias of the Sample

A second limitation of the study was the bias of the sample. The study respondents, when compared to the population at large, were found to be older, and to include a greater proportion of professional workers, males, and those of higher incomes and levels of education. This bias

may be due to the use of a mail-out approach in collecting data; these types of people may be more inclined to express themselves in written form. This bias limits one's ability to generalize from these findings.

Reliability of Local Public Officials Response

Another limitation of this study involved surveying the opinions of local public officials without instructing them to respond as "local public officials;" their response may have been more as a "service customer" than as a public official or policy maker (i.e., one whose opinion is from the point of view of the "public interest" vs. his own interest). The finding that there is a high degree of similarity between consumers and officials on opinions on service adequacy, therefore, is tentative, particularly since it is contrary to the finding in a previous study.⁹ Therefore, it is recommended that, for future studies comparing the opinions of consumers and officials, local public officials are specifically instructed to respond in their capacity as policy makers.

Limited Responses

A fourth limitation involved a limited response from consumers and local public officials for some of the services included in this study. This limited response precluded drawing statistically reliable conclusions for some services. The time and resource limitations of this study permitted two follow-up attempts to acquire as many returns as possible; however, given the stipulation of this research that a respondent had to use a service before an opinion could be given, it is recommended that future similar research attempt additional follow-ups to assure as close to a total response as possible.

⁹See Harold L. Nix et al., "Views of Leader Respondents Compared With Random Respondents' Views," Journal of the Community Development Society 5, No. 1 (1974).

Limited Corroboration of Survey Findings

A final limitation of this study is concerned with a lack of secondary information for indicating whether consumers' opinions reflected prevailing service conditions in the area. This lack of secondary information that focuses upon an examination of service adequacy in rural areas may be due to several things: first, rural communities often lack money to undertake extensive evaluation efforts of their services; second, many rural communities do not have the professional expertise to undertake program evaluation efforts that urban areas, for example, might have; and third, leaders in rural communities may not see the need to expend money for evaluation efforts.

Being able to compare people's opinions on services with secondary data on those same services depends largely on whether evaluation efforts had been made in the past; otherwise the opinion researcher, given enough time and resources, would have to gather the appropriate secondary data.

Recommendations for Further Research

It is recommended that additional similar research be undertaken to corroborate the findings of this research. Socio-economic characteristics most closely associated with consumer dissatisfaction and services were identified in this study. It was found, for example, that consumers living in the more rural sections of the study area viewed a larger number of services inadequate than those living in the more urban areas. Female respondents were also found to view a larger number of services inadequate than male respondents. Although similar conclusions were drawn in other studies, more research needs to be undertaken to further (1) substantiate these findings; and (2) obtain additional insights as to how various segments of the population perceive services. Identifying

these relationships would be useful for better understanding possible service needs of various segments of the population. It would also aid in planning rural development efforts.

Similar research is also needed to determine whether or not the views of consumers and local officials are the same on questions of service adequacy. Although it was concluded in this research that consumers and officials held similar viewpoints on questions of service adequacy, further research is needed to substantiate the finding, particularly since a contrary conclusion was arrived at in previous research.¹⁰

Other research is also suggested on the basis of this research. Future research might focus on income levels most related to dissatisfaction with services in rural areas. Prior studies, for example, have indicated that lower income groups are less satisfied with some services than higher income groups. Unfortunately, the level of response from low income groups in this study was insufficient for drawing conclusions for a variety of services. It is recommended that future research investigate possible relationships between opinions on service adequacy and income levels to see if the service needs of low income people are being met.

In this study it was found that among the two services in each major service category that consumers found least adequate, they were most critical of local and county roads, swimming facilities, and mental health services. Additional research should be undertaken in other rural areas to determine specific kinds of services viewed least adequate by consumers as a means for determining some possible priorities for service improvements generally.

¹⁰See Harold Nix et al.

Since the largest proportion of consumers in this study were dissatisfied with local and county roads, it is suggested that additional research be undertaken to identify ways to improve driving conditions in rural areas. Such topics as rural safety conditions or causes of accidents in rural areas might be explored.

A comparatively large proportion of consumers in this study were also dissatisfied with swimming facilities. Additional research might be undertaken into the costs and benefits of building and maintaining swimming facilities in rural areas, for example, or planning and developing water safety programs.

Mental health was another service in rural areas that seemed to offer opportunities for major improvement. Additional research might include (1) identifying the different mental health problems and needs of rural residents; (2) identifying alternative mental health treatments (e.g., alternatives to institutionalization) and the cost and benefits associated with each; (3) determining alternative means to insure adequate financing and staffing of professional personnel in mental health; or (4) identifying performance standards in the field to help in evaluating progress and performance.

Another general problem concerning rural services that seemed to emerge in this study was the lack of variety in educational curricula. This was found to be true in consumers' criticisms of adult education in community colleges, high school services, and adult education in high schools. It is recommended that additional research be undertaken to identify some specific learning needs of rural youth and adults. What are the basic curricula needs in high schools, for example, that are important for higher education? What kinds of vocational skills do rural

residents need to meet the changing job requirements in society? These are examples of questions that could be further explored.

It is important for these and other research needs to be identified so that systematic and orderly rural development planning can occur. Systematic research and planning are critical for the proper growth and development of rural America.

QUESTIONS 1 THROUGH 7 ARE TO DETERMINE YOUR VIEWS ON THE ADEQUACY OF PUBLIC, PRIVATE, AND CHARITABLE SERVICES FOR SERVING YOUR NEEDS. THE FOLLOWING FOUR STEPS HAVE BEEN INCLUDED TO GUIDE YOU IN ANSWERING THESE SEVEN QUESTIONS.

For step 1 Please check (✓) YES if you or your immediate family (generally, spouse, children, brothers and sisters, parents and grandparents) with whom you have close contact, have used the service.

For step 2 If yes to step 1, please give the name of the community where the service is located.

For step 3 Please check (✓) YES if you are generally satisfied with the adequacy of the service (BY "ADEQUACY", IT MEANS THAT YOU ARE SATISFIED WITH THE AMOUNT OF THE SERVICE IN YOUR AREA; THAT THE SERVICE IS AVAILABLE AND ACCESSIBLE TO YOU AND YOUR FAMILY IN MEETING YOUR NEEDS; AND THAT YOU ARE SATISFIED WITH THE QUALITY OF THE SERVICE.) If you check YES in step 3, do not go to step 4.

For step 4 If you are NOT SATISFIED with the adequacy of the service and check NO in step 3, please write in step 4 (1) the name of the SERVICE CATEGORY you are referring to (for example, "elementary education" etc.), (2) where possible, the name of the service (i.e., Marshall Elementary School, etc.) (3) AND then what improvements you recommend (for example, your recommendations for improving the amount, availability or accessibility, and/or the quality of the service).

THE FOLLOWING RESPONSE IS INCLUDED AS AN EXAMPLE FOR QUESTIONS 1 - 7.

(1) **EDUCATION SERVICES**

	Step 1 HAVE YOU OR YOUR IMMEDIATE FAMILY USED THE SERVICE YES NO DON'T KNOW (If YES, go to steps 2&3)	Step 2 NAME OF COMMUNITY WHERE SERVICE IS LOCATED	Step 3 SERVICE ADEQUATE YES NO (If NO, go to step 4)	PLEASE DO NOT MARK IN THIS SPACE
a. Pre-school education	✓ — —	Cairo	— ✓	— — —
b. Elementary education	✓ — —	Cairo	✓ —	— — —
c. High school education	— ✓ —		— —	— — —
Step 4				
Service category (and name if possible)	Improvement needed			
Preschool Education (Marshall School)	More schools of this type are needed			

Step 1

HAVE YOU OR YOUR IMMEDIATE
FAMILY USED THE SERVICE
YES NO DON'T KNOW
(If YES, go to steps 2&3)

- a. Pre-school education
- b. Elementary education
- c. High school education
- d. Vocational education
- e. Community college education
- f. Adult education offered in high schools
- g. Adult education offered in community college
- h. Cooperative extension services
- i. Public library facilities

Step 2

NAME OF COMMUNITY WHERE
SERVICE IS LOCATED

Step 3

SERVICE ADEQUATE
YES NO
(If NO, go
to step 4)

PLEASE DO NOT
MARK IN THIS
SPACE

Step 4

Service category (and name if possible)

Improvement needed

Step 1

Step 2

Step 3

HAVE YOU OR YOUR IMMEDIATE
FAMILY USED THE SERVICE
YES NO DON'T KNOW
(If YES, go to steps 2&3)

NAME OF COMMUNITY WHERE
SERVICE IS LOCATED

SERVICE ADEQUATE
YES NO
(If NO, go
to step 4)

PLEASE DO NOT
MARK IN THIS
SPACE

- a. General hospital services
- b. Hospital emergency room services
- c. Mental health services
- d. Ambulance services
- e. Nursing services
- f. Doctor services
- g. Dentist services
- h. Alcohol rehabilitation services
- i. Drug rehabilitation services
- j. Immunization services
- k. Family planning services
- l. Maternal and child health care
- m. Home health nursing

Step 4

Service category (and name if possible)

Improvement needed

(3) **RECREATION SERVICES**

Step 1

HAVE YOU OR YOUR IMMEDIATE
FAMILY USED THE SERVICE
YES NO DON'T KNOW
(If YES, go to steps 2&3)

- a. Picnic areas
- b. Camping areas
- c. Swimming facilities
- d. School recreation facilities
for use by whole community
- e. Organized recreation programs
for youth
- f. Organized adult recreation programs
- g. Organized recreation programs
for Senior Citizens

Step 2

NAME OF COMMUNITY WHERE
SERVICE IS LOCATED

Step 3

SERVICE ADEQUATE
YES NO
(If NO, go
to step 4)

PLEASE DO NOT
MARK IN THIS
SPACE

Step 4

Service category (and name if possible)

Improvement needed

(4) **PUBLIC SAFETY SERVICES**

Step 1

HAVE YOU OR YOUR IMMEDIATE
FAMILY USED THE SERVICE
YES NO DON'T KNOW
(If YES, go to steps 2&3)

- a. Fire protection services
- b. Police protection services
- c. Court system
- d. Juvenile correction services

Step 2

NAME OF COMMUNITY WHERE
SERVICE IS LOCATED

Step 3

SERVICE ADEQUATE
YES NO
(If NO, go
to step 4)

PLEASE DO NOT
MARK IN THIS
SPACE

Step 4

Service category (and name if possible)

Improvement needed

(5) **TRANSPORTATION SERVICES**

	Step 1	Step 2	Step 3	
	HAVE YOU OR YOUR IMMEDIATE FAMILY USED THE SERVICE YES NO DON'T KNOW (If YES, go to steps 2&3)	NAME OF COMMUNITY WHERE SERVICE IS LOCATED	SERVICE ADEQUATE YES NO (If NO, go to step 4)	PLEASE DO NOT MARK IN THIS SPACE
a. School bus service	____	_____	____	____
b. Bus service between towns	____	_____	____	____
c. Scheduled airline service	____	_____	____	____
d. Freight rail service	____	_____	____	____
e. Commercial trucking services	____	_____	____	____
f. Road plowing for local roads	____	_____	____	____
g. Condition of local roads	____	_____	____	____
h. Condition of county roads	____	_____	____	____
i. Condition of state highways	____	_____	____	____
j. Condition of bridges	____	_____	____	____

Step 4

Service category (and name if possible)

Improvement needed

(6) **PUBLIC WORKS FACILITIES AND SERVICES**

	Step 1	Step 2	Step 3	
	HAVE YOU OR YOUR IMMEDIATE FAMILY USED THE SERVICE YES NO DON'T KNOW (If YES, go to steps 2&3)	NAME OF COMMUNITY WHERE SERVICE IS LOCATED	SERVICE ADEQUATE YES NO (If NO, to to step 4)	PLEASE DO NOT MARK IN THIS SPACE
a. Garbage disposal services	____	_____	____	____
b. Sanitary land fill facility	____	_____	____	____
c. Quality of public water	____	_____	____	____
d. Public sewer system	____	_____	____	____

Step 4

Service category (and name if possible)

Improvement needed

Step 3

**HAVE YOU OR YOUR IMMEDIATE
FAMILY USED THE SERVICES**

YES NO DON'T KNOW
(IF YES, go to steps 2&3)

NAME OF COMMUNITY WHERE
SERVICE IS LOCATED

SERVICE ADEQUATE

YES NO

(If NO, go
to step 4)

PLEASE DO NOT
MARK IN THIS
SPACE

- a. Training/education for rehabilitation of physically handicapped adults
- b. Job training for low income adults
- c. Special care for the retarded
- d. Child day care services
- e. Family counseling for financial problems
- f. Family counseling for personal problems
- g. Financial aid to low income families
- h. Housing facilities for elderly
- i. Housing facilities for low income families
- j. Legal services for low income families
- k. Provision of food service to elderly

Step 4

Service category (and name if possible)

Improvement needed

(8a) Of the services listed in questions 1-7, are there any that you or your family need, but which are not available to you?

YES NO

(8b) if YES, please indicate the needs that are not being met.

(9.) Please (✓) the one service category MOST in need of attention or action for improvement

(9b) Please (✓) the one service category LEAST in need of attention or action for improvement

MOST

Education Services
Health Services
Recreation Services
Public Safety Services
Transportation Services

LEAST

ARE ASKED TO FIND OUT HOW YOU FEEL ABOUT THE ADEQUACY OF SERVICES FOR OTHERS IN YOUR COUNTY.

MARK IN THIS
SPACE

(10a.) Of the services listed in questions 1-7, are there any that others need but which are not available to them? YES ___ NO ___ NO OPINION ___

(10b.) If YES, please indicate the needs that are not being met _____

(11) Generally speaking, how do you feel about services provided to others in your county? (Please check)

a. Education Services	Adequate	___	Not Adequate	___	Don't Know	___
b. Health Services		___		___		___
c. Recreation		___		___		___
d. Public Safety Services		___		___		___
e. Transportation		___		___		___
f. Public Works		___		___		___
g. Special Services		___		___		___

THE NEXT TWO QUESTIONS ARE CONCERNED WITH HOW WELL INFORMED YOU FEEL YOU ARE WITH THE SERVICES MENTIONED IN THIS QUESTIONNAIRE.

(12) Do you feel adequately informed about the community services that were mentioned in this questionnaire? YES ___ NO ___

(13) If there are services you need more information about, please list _____

QUESTIONS 14 THROUGH 23 WILL PROVIDE US WITH ADDED INFORMATION TO INSURE THAT WE HAVE A CROSS SECTION OF RESPONSES ON SERVICE NEEDS.

(14) In which community do you live? _____

(15) In which county do you live (Please check) Huron ___ , Sanilac ___ , Tuscola ___ , Other ___ .

(16) Please indicate your age. Years ____.

(17) How long have you lived in this county? Years ____.

(18) What is your present occupation at which you spend most of your time? Occupation _____

(19) Please check the type of area in which you have your home

- a. ___ Live on a farm
- b. ___ Live in a rural area but not on a farm
- c. ___ Live in an urban area, a city or village

(20) Please check (a) Male ___ (b) Female ___

(21) Please check (a) Married ___ (b) Single ___

(22) Please check (a) Have you had any children YES ___ NO ___

(b) Do you have any children living at home? YES ___ NO ___

PLEASE DO NOT
MARK IN THIS
SPACE

(23) Which of the following categories includes your total family income before taxes in 1972? (Please check)

- a. ☐ up to \$ 3,000
- b. ☐ \$ 3,001 - \$ 6,000
- c. ☐ \$ 6,001 - \$ 9,000
- d. ☐ \$ 9,001 - \$12,000
- e. ☐ \$12,001 - \$25,000
- f. ☐ \$25,001 - \$50,000
- g. ☐ over \$50,000

(24) Please check the level of education you have completed

- a. 8th grade or less ☐
- b. Grades 9 - 11 ☐
- c. High school graduate ☐
- d. Completed Vocational Training school ☐
- e. College 1 - 3 years ☐
- f. College graduate ☐

If you would like a copy of the survey results, please indicate your name and address.

THANK YOU FOR YOUR COOPERATION!

Fritz Sauer, 323 Natural Resources Building, MSU, East Lansing, Michigan 48824

APPENDICES

APPENDIX A

SURVEY QUESTIONNAIRE AND

MAIL-OUT MATERIALS

DEPARTMENT OF RESOURCE DEVELOPMENT
NATURAL RESOURCES BUILDING

EAST LANSING • MICHIGAN • 48824

February 26, 1974

Dear Resident:

Your help is needed in understanding community services in your area. Community services include education, health care, safe transportation, and so forth. People throughout the state are working toward improving the kinds and quality of services available to Michigan residents.

The enclosed questionnaire is the basis of a survey designed to aid community groups and leaders make possible community service improvements in your area. This survey is being undertaken in Huron, Sanilac, and Tuscola Counties. It is a joint effort between Michigan State University, Cooperative Extension offices, County Commissioners, and the Thumb Area Human Development Commission.

Please complete the enclosed questionnaire. A summary of the results will be made available to you if you request it.

If you are married, either you or your spouse may fill out the questionnaire. In either case, names will not be identified with individual or combined data.

Your cooperation will be greatly appreciated. Thank you for your time.

Sincerely,

Fritz Sauer
Research Coordinator
Thumb Area Community
Services Study

FS/jo

DEPARTMENT OF RESOURCE DEVELOPMENT
NATURAL RESOURCES BUILDING

EAST LANSING • MICHIGAN • 48824

May 24, 1974

Dear Thumb Area Resident:

Several weeks ago a questionnaire concerning issues in community development was mailed to you from Michigan State University. If you have not had a chance to respond, I hope you will take a few minutes to fill it out and return it to us. A greater number of responses will make the results of the study much more useful.

I am enclosing an extra copy of the questionnaire for your convenience.

Thank you very much for your help.

Sincerely,

Fritz Sauer
Research Coordinator
Thumb Area Community
Services Survey

FS/jo

**DEPARTMENT OF RESOURCE DEVELOPMENT
NATURAL RESOURCES BUILDING**

EAST LANSING • MICHIGAN • 48824

Dear Resident:

A questionnaire concerning your community services was recently mailed to you from Michigan State University. A number of people have returned their completed questionnaires, and I need your response in order to make accurate conclusions.

If you have not yet responded, I hope you will please take a few minutes now to fill out the questionnaire and return it in the prepaid envelope.

Thank you.

**Fritz Sauer
Research Coordinator
Thumb Area Community
Services Survey**

FS/jo

APPENDIX B

**CONFIDENCE INTERVALS FOR CONSUMERS AND
LOCAL PUBLIC OFFICIALS' RESPONSES
TO THE SURVEY QUESTIONS**

APPENDIX B

CONFIDENCE INTERVALS FOR CONSUMERS AND
LOCAL PUBLIC OFFICIALS' RESPONSES
TO THE SURVEY QUESTIONS

Formula:

$$p \pm z \sqrt{\left(\frac{pq}{n-1}\right)\left(\frac{N-n}{N}\right)^1}$$

$z = 1.65$ (calculated at a significance level of $\alpha = .10$, or a z score of 1.65).

n = number who answered question.

N = total population size (total household population of Thumb Area-- 34,585).

p = decimal proportion of yes.

q = decimal proportion of no.

Example: (Taken from question on preschool services.)

Consumers who indicated preschool services adequate = 86.2% (frequency = 125).

Consumers who indicated preschool services NOT adequate = 13.8% (frequency = 20).

$$862 \pm 1.65 \sqrt{\left(\frac{.862 \times .138}{144}\right)\left(\frac{34,585 - 145}{34,585}\right)} =$$

$$(.0287) (.9979) = .0286 \times 1.65 = \underline{.047}$$

Thus, $.047 + .862 = 90.0$ or $.047 - .862 = \underline{81.5}$ for a $\pm 4.7\%$ confidence interval.

¹William Cochran, Sampling Techniques (New York: John Wiley and Sons, Inc., 1953), pp. 59-60.

Explanation:

One can be 90% certain that the true percentage (i.e., the percentage not due to chance) of those who feel preschool services are adequate and not adequate are within $\pm 4.7\%$.

Table 66.--Calculated Confidence Intervals for Local Public Official Responses to Survey Questions on Community Services.

Community Service	Confidence Intervals (Percentages±)
I. Education Services	
Preschool	14.2
Elementary	4.4
High School	6.7
Vocational*	24.2
Community College Education	10.3
Adult Education in High School	9.2
Adult Education in Community College*	20.1
Cooperative Extension	3.6
Public Library	4.7
II. Health Services	
General Hospital Services	2.5
Hospital Emergency Room Service	3.7
Mental Health Services	18.5
Ambulance Services	5.5
Nursing	9.2
Doctor	5.1
Dentist	3.6
Alcohol Rehabilitation*	33.0
Drug Rehabilitation*	33.0
Immunization	6.0
Family Planning Service*	-
Maternal and Child Health Care	16.5
Home Health Nursing*	-
III. Recreation Services	
Picnic Areas	7.1
Camping Areas	10.9
Organized Adult Recreation	11.0
Organized Recreation for Youth	8.5
School Rec. Fac. Used by Community	8.9
Swimming Facilities*	11.7
Organized Rec. for Senior Citizens*	30.4
IV. Public Safety	
Fire Protection	2.9
Police Protection	3.4
Court System	5.0
Juvenile Correction	11.2

Table 66.--Continued.

Community Services	Confidence Intervals (Percentages±)
V. Transportation	
School Bus Service*	1.9
Bus Service Between Tns.	12.4
Scheduled Airline Service	3.1
Freight Rail Service	7.1
Commercial Trucking Service	3.1
Road Plowing for Local Road	2.7
Condition of Local Roads	3.3
Condition of County Roads	3.4
Condition of State Highways	2.6
Condition of Bridges	3.2
VI. Public Works	
Garbage Disposal Service	2.5
Sanitary Landfill Facility	2.3
Quality of Public Water	2.7
Public Sewer System	3.2
VII. Special Services	
Financial Aid to Low Income Families	11.3
Family Counseling for Personal Problems	12.6
Training/Educ. for Physically Handicapped	16.4
Special Care for the Retarded	19.5
Housing Facilities for Low Inc. Families	20.6
Job Training for Low Income Adults	22.0
Child Day Care*	27.0
Family Counseling for Financial Problems*	41.2
Housing Facilities for the Elderly*	21.8
Legal Services for Low Income*	54.9
Provision of Food Service to Elderly*	30.2

*Denotes results that were statistically unreliable due to a calculated confidence interval large enough to change the direction of opinion distribution.

Talbe 67.--Calculated Confidence Intervals for Consumer Responses to Survey Questions on Community Services.

Community Service	Confidence Intervals (Percentages±)
I. Education Services	
Preschool	4.7
Elementary	1.8
High School	2.7
Vocational	6.7
Community College Education	3.9
Adult Education in High School	4.0
Adult Education in Community College	5.6
Cooperative Extension	2.7
Public Library	1.9
II. Health Services	
General Hospital Services	1.5
Hospital Emergency Room Service	2.2
Mental Health Services	10.1
Ambulance Services	2.8
Nursing	2.9
Doctor	2.4
Dentist	1.8
Alcohol Rehabilitation	18.4
Drug Rehabilitation*	47.6
Immunization	1.8
Family Planning Services	18.4
Maternal and Child Health Care	5.9
Home Health Nursing	14.1
III. Recreation Services	
Picnic Areas	2.3
Camping Areas	4.1
Organized Adult Recreation	6.5
Organized Recreation for Youth	4.7
School Recreation Fac. Used by Community	4.9
Swimming Facilities	4.3
Organized Recreation for Senior Citizens	10.4
IV. Public Safety	
Fire Protection	4.0
Police Protection	6.9
Court System	11.8
Juvenile Correction	20.1

Table 67.--Continued.

Community Service	Confidence Intervals (Percentages±)
V. Transportation	
School Bus Service	3.9
Bus Service Between Tns.*	34.8
Scheduled Airline Service	5.7
Freight Rail Service*	13.4
Commercial Trucking Service	4.8
Road Plowing for Local Road	5.2
Condition of Local Roads	7.7
Condition of County Roads	7.5
Condition of State Highways	5.6
Condition of Bridges*	9.3
VI. Public Works	
Garbage Disposal Service*	
Sanitary Landfill Facility	6.4
Quality of Public Water	7.9
Public Sewer System	8.3
VII. Special Services	
Financial Aid to Low Income Families*	33.0
Family Counseling for Personal Problems*	
Training/Educ. for Physically Handicapped*	33.0
Special Care for the Retarded	25.0
Housing Facilities for Low Income Families*	
Job Training for Low Income Adults*	
Child Day Care*	
Family Counseling for Financial Problems*	82.5
Housing Facilities for the Elderly*	
Legal Services for Low Income*	
Provision of Food Service to Elderly*	

*Denotes results that were statistically unreliable due to a calculated confidence interval large enough to change the direction of opinion distribution.

APPENDIX C

DETERMINATION OF SAMPLE SIZE

APPENDIX C
DETERMINATION OF SAMPLE SIZES

The sample size determination was based on the following formula:

$$N = \frac{Z^2 (pq)}{Z^2 (pq) + E^2} \quad ^1$$

n

The formula is defined as follows:

N = Minimum number of households that must return questionnaire.

n^1 = number of households in Huron County = 10,325

n^2 = number of households in Sanilac County = 10,551

n^3 = number of households in Tuscola County = 13,709

Z^2 = Z value for 90% confidence level = $1.65^2 = 2.72$

p = chance of answering yes to survey question = .5%

q = chance of answering no to survey question = .5%

E = significance level = .10 α

¹Dr. Mary Ellen McSweeney, Professor of Statistics, Department of Education, Michigan State University.

Based on the formula, sample size determination for each county was calculated as follows:

1. Huron County sample size determination:

$$\frac{2.72 (.25)}{2.72 (.25) + .0025} = \frac{.68}{.0025658} = \underline{\underline{265}} \text{ N}$$

10,325

2. Sanilac County sample size determination:

$$\frac{.272 (.25)}{.272 (.25) + .0025} = \frac{.68}{.0025644} = \underline{\underline{265}} \text{ N}$$

10,551

3. Tuscola County sample size determination:

$$\frac{.272 (.25)}{.272 (.25) + .0025} = \frac{.68}{.00025496} = \underline{\underline{266}} \text{ N}$$

13,709

Thus, the minimum total number of usable questionnaires should be 265 for Huron County, 265 for Sanilac County, and 266 for Tuscola County.

SELECTED BIBLIOGRAPHY

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Books

- Blalock, Hubert M. Social Statistics. New York: McGraw-Hill Book Company, 1960.
- Bogart, Leo. Silent Politics: Polls and the Awareness of Public Opinion. New York: John Wiley and Sons, 1972.
- Bollens, John C. Exploring the Metropolitan Community. Los Angeles: University of California Press, 1961.
- Childs, Harwood. Public Opinion: Nature, Formulation and Role. Princeton: D. VanNostrand Company, Inc., 1965.
- Cochran, William. Sampling Techniques. New York: John Wiley and Sons, Inc., 1953.
- Hatry, Harry P., and Webb, Kenneth. Obtaining Citizen Feedback: The Application of Citizen Surveys to Local Government. Washington, D.C.: The Urban Institute, 1973.
- Hatry, Harry P.; Winnie, Richard; Risk, Donald. Practical Program Evaluation for State and Local Government Officials. Washington, D.C.: The Urban Institute, 1973.
- Rolls, Charles, and Cantril, Albert. Polls: Their Use and Misuse. New York: Basic Books, Inc., 1972.
- Sharkansky, Ira. Perspectives in Developmental Change, Art Gallaher, Editor, Lexington: University of Kentucky Press, 1968.
- _____. Selected Perspectives for Community Resource Development, Edited by Raymond D. Vlasin, Luther Wallace, and Daryl Hobles, Raleigh: North Carolina State, 1969.
- _____. Public Administration: Policy Making in Government Agencies. Chicago: Rand McNally Publishing, 1975.

Journals

- Frederickson, George H. "Exploring Urban Priorities: The Case of Syracuse." Urban Affairs Quarterly (September 1969), 31-43.
- Johnson, Ronald, and Knop, Edward. "Rural-Urban Differences in Community Satisfaction." Rural Sociology 35 (December, 1970), 544-48.
- Nix, Harold; Singh, Ram; and Cheatham, Paula. "Views of Leader Respondents Compared with Random Respondents' Views." Journal of Community Development Society 5 No. 1 (Spring 1974), 81-91.

Reports

- A Report by the President's National Advisory Commission. The People Left Behind. Washington, D.C.: U.S. Government Printing Office, 1967.
- Adrian, Charles. "Public Attitudes and Metropolitan Decision Making." Eighth Annual Werrett Lecture on Local Government. University of Pittsburgh: Institute of Local Government, 1962.
- Christenson, James A. "A Procedure for Conducting Mail Surveys with the General Public." Paper presented at the Annual Meeting of the Community Development Society, Wilmington, N.C., 7 August 1974.
- Committee on Agriculture and the Environment. National Academy of Sciences, Productive Agriculture and a Quality Environment. Washington, D.C.: National Academy of Sciences, 1974.
- Dillman, Dan. Public Values and Concerns of Washington Residents, Washington State University: Agricultural Experiment Station Bulletin, 1970.
- East Central Michigan Economic Development District on Cooperation with Huron County Advisory Council and Huron County Planning Commission. Overall Economic Development, Huron County, Michigan. April 1972.
- East Central Michigan Planning and Development Commission, and Sanilac County Planning Commission. Physical Elements of Sanilac County. Report #2. December 1973.
- Community Facilities of Sanilac County. Report #3. March 1974.

. Development Objectives of Sanilac County. Report #4.
September 1974.

First Annual Report of the Secretary of Agriculture to the Congress.
Papers of the Workshop on Current Regional Development, Regional
Research in the Northeast, Ithaca: Cornell University, 1972.

. Proceedings of a Conference sponsored by Center for Rural
Manpower and Public Affairs, Manpower Services in Rural America,
E. Lansing: Michigan State University, 1973.

. Proceedings of the Public Policy Forum on Alternatives for
Michigan Local Government, E. Lansing: Michigan State University,
1973.

. Rural Development Goals, Washington, D.C.: U.S. Government
Printing Office, 1974.

. Second Annual Report of the Secretary of Agriculture to the
Congress, Rural Development Goals, Washington, D.C.: U.S. Govern-
ment Printing Office, 1975.

. Central Regional Center for Rural Development, Aspects of Plan-
ning for Public Services in Rural Areas, Ames: Iowa State Univer-
sity, 1976.

Lambert, Virginia; McGraphan, David; Martinson, Oscar; Wilkening, E. A.
Public Service, Programs, and Policy in Four Northwestern Wisconsin
Counties. Madison: Institute of Environmental Studies, 1974.

Price, Leighton A., and O'Hare, William P. "Analysis of Contingency Table
(ACT)." Computer Institute for Social Science Research, Michigan
State University, 72-8. May 1972.

. "Percentage and Frequency Distribution (PF COUNT)." Computer
Institute for Social Science Research, Michigan State University,
72-6. June 28, 1972.

Vilican-Leman, Assoc., Inc. General Development Plan, Huron County,
Michigan. Detroit, Michigan, June 1973.

. General Development Plan, Sanilac County, Michigan. Detroit,
Michigan. June 1974.

General References

Barkely, Paul. Public Goods in Rural Areas: Problems, Policies and
Population. Oregon State University: Western Rural Development
Center.

- Barlowe, Raleigh. Changing Demand for Local Public Services. Paper presented at North Central Land Economics Research Committee's Seminar on Supplying and Financing Public Services in Rural Areas of the Midwest. Chicago, Illinois. October 27, 1966.
- Brunn, Betro, and Jones, Connie. "Supply and Demand of Community Services in Rural Areas: A Conceptual Analysis." Public Services for Rural Communities: Some Analytical and Policy Considerations. Texas A & M: Department of Agricultural Economics. Publication #70. January 1975.
- Carruthers, Garrey, and Urquhart, Scott. Some Methodological Considerations for Rural Community Services Research. Paper presented at National Workshop on the Delivery of Community Services. Lincoln, Nebraska. December 13-16, 1971.
- Fuguitt, Glen. "The Places Left Behind: Population Trends and Policy for Rural America." Rural Sociology, 36 (December 1971), 449-70.
- Gessaman, Paul, and Rose, Gordon. Problems of Measurement and Assessment of the Adequacy of Community Services: A Naive Viewpoint. Paper presented at a National Workshop on the Delivery of Community Services. Lincoln, Nebraska. December 13-16, 1971.
- Hatry, Harry P. "Reflecting the Consumer Viewpoint on State and Local Government Fiscal and Expenditure Decisions." National Tax Journal, 25 (September 1972).
- Horton, John E., and Thompson, Wayne E. "Powerlessness and Political Negativism: A Study of Defeated Local Referendums." The American Journal of Sociology, 67 (March 1962), 485-93.
- Husch, Werner. "Local Versus Areawide Urban Government Services." National Tax Journal, 17 (December 1964), 331-39.
- Malt, Bradford, and Oates, W. E. "The Raising Cost of Local Public Services: Some Evidence and Reflections." National Tax Journal, 22 (June 1969), 185-202.
- Masotti, Louis, and Bowen, Donald R. "Communities and Budgets: The Sociology of Municipal Expenditures." Urban Affairs Quarterly (December 1965), 39-58.
- _____. Quality of Life Indicators: A Review of the State-of-the-Art and Guidelines Derived to Assist in Developing Environmental Indicators. Environmental Protection Agency: Environmental Studies Division. December 1972.
- Wilkinson, Kenneth P. "A Field Theory Perspective for Community Development Research." Rural Sociology, 37 (March 1972), 43-52.