FAMILY - COMMUNITY RESOURCE LINKAGES
AND THEIR RELATION TO SELECTED FAMILY
VARIABLES

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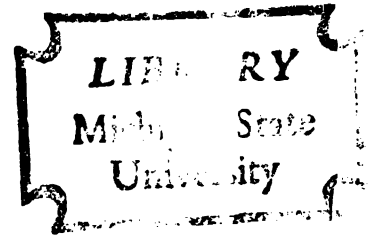1973

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ABSTRACT

FAMILY-COMMUNITY RESOURCE LINKAGES AND
THEIR RELATION TO SELECTED
FAMILY VARIABLES

By

Barbara Kenrick Miller

This study focused on the family's linkage to com-
munity resources. It had a two-fold purpose: to expand the
knowledge of the family system beyond its immediate boun-
daries to include the environment from which it derives
resources, and to provide community decision makers with
these data as a factual contribution to the assessment of
community resources. More specific objectives were: (1) to
devise a system for measuring family-community resource
linkages; (2) to determine the relationship among scope,
penetration, and flow dimensions of family-community resource
linkages and selected family variables: social position,
size of family, stage of family life cycle, income, length
of residence in the community, and hours spent in home pro-
duction; and (3) to determine broadly the families' unmet
resource needs in the community.

Since the community is the locus of a range of
resources including food, health services and social groups,
their presence, or absence, can influence developmental

patterns of the family and its members. For the purpose of analysis, this range of resources was classified into nine subsystems, each having a functional relationship to the family: business, employment, recreation, culture, religion, education, health, civic, and welfare. There were three dimensions to the linkages families make with these subsystems which can be quantified by use of standard scores: scope, penetration, and flow. Scope described the number of subsystems families contact; penetration, the number of contact hours; and flow, the relative use of or contribution to the community. It was hypothesized that these linkages would be related to the selected family variables.

Questionnaires were administered to a stratified random sample of 140 families in adjoining towns of Owosso and Corunna, Michigan, over a three-month period. The procedure was to call on the family in person, leaving detailed questionnaires for all family members 14 and over and summary questionnaires for children 13 and under, and arranging the return for the completed ones.

For analysis, the community was divided into two areas separated by the city limits. The geographical area within the city limits was designated internal, while the area outside the limits at whatever distance was designated external. As would be expected, greater use was made of the internal subsystems; however, external contact hours were substantial indicating that internal community resources were insufficient to meet residents' needs. Families

entered from three to nine subsystems with seven the mean number. Employment accounted for the highest mean contact hours both within and without the community. Business was second in hours, but was utilized by all families. Within the community, penetration was positively related to family size, while externally no relationship with family variables was significant.

Selected elements from the penetration scores were formulated into an equation quantifying flow: the relative use of or contribution to the community. Internal flow was significantly related to the family variables with life cycle most prominent although marginally significant. The mean score for internal flow was slightly negative, within a narrow range of scores. There was no significant relationship between the external flow score and family variables.

Families with children tended to make greater use of and participate more in the community. They had more income either from internal or external employment, and supplemented this through home production. In the one and two person households there appeared to be differing characteristics. The older families with long years of residence in the community depending upon fixed incomes, shopped primarily in the local community and were entertained at home through hobbies and television. Others with high scores in volunteer health activities penetrated the internal civic and recreational subsystems as well as local employment. The third cluster of small households with

higher income made use of the external community through business and culture.

Analysis of the contact hours in the leisure sub-systems of culture and recreation indicated a large amount of time allocated to these pursuits by some segments of the community. In addition, more suggestions were made in relation to community recreation facilities than for other categories of community resource development as municipal improvements, education, or employment.

Previous research relating individual and family participation to selected subsystems was supported in relation to activity of families across many subsystems. The range of contact hours in different subsystems by home production, internal community, and external community for different family members can also be utilized in relation to individual behavior as well as providing an empirical base for future study.

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Barbara Kenrick Miller

A DISSERTATION

Submitted to
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DOCTOR OF PHILOSOPHY

Department of Family Ecology

1973

DEDICATION

To my husband

Donald Merrill Miller

who inspired and supported

this commitment

to further education

and

To my mother

Elsie P. Kenrick

who fostered the joy of living

that made it possible.

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CHAPTER I

INTRODUCTION

Advances in the technology of building, food produc-
tion, transportation, and communication have made it possible
for millions of people to live in great density in our
largest megalopoli. Such concentrations have their advan-
tages. The individuals and families in the large centers
support a great diversity of goods and services, thus satis-
fying specialized needs such as ethnic religions, the fine
arts, and exotic foods.

The differential use individuals and families make
of these resources is manifest in a "life style," a generic
term describing the selective utilization of resources.
Many families appear to have access to sufficient resources
so that they are clothed, fed, and housed in comfort. These
resources include employment providing disposable income as
well as the desired goods and services. Other families
appear so deficient in these resources that they rely on
linkers, either paid or volunteer, to improve their flow.

Communities differ in the range of resources they
can provide for families. Some have so few resources that
families either go without or extend their linkages to other
communities. In large metropolitan areas, the advantages of

diversity of resources have been jeopardized by symptoms of deterioration: increasing crime rates, rising costs of services, pollution and congestion, to mention a few.

Statement of the Problem

In modern times, large cities become larger, and small hamlets disappear. Inasmuch as the dysfunctional characteristics of the large cities seem almost incurable, there is interest in moderating this trend by retaining populations in smaller communities.

There are a number of bases on which decisions to effect this goal could be made. The one most typical of the American culture has been the economic or efficiency model (Howard, 1969).

Looking to frameworks other than economic is supported by Chapin (1968, p. 11), who says:

> . . . that a disposition to rely wholly on one system of thought (economic) simply because it is so highly developed and directly translatable into widely understood units of measurement may obscure important dimensions of urban phenomena that could lead to more complete theoretical systems for the study of urban structure and processes.

One such dimension is the community as an environment for providing family resource needs. The knowledge of the family's use of the community could provide criteria for allocating community resources.

Given that families need certain resources to function, do families differ in the number of community subsystems they enter to meet their needs? Are there

differences in the depth to which they may penetrate any particular subsystem? In what instances do families contribute to the functioning of a community subsystem to meet some psychological or humanitarian need as well as relying on subsystems to supply the overt needs of food, clothing, shelter, and education? Can these resource linkages be conceptualized and measured? How well do communities meet the social needs of families as well as physical needs? Is this family-community interaction related to family variables as social position, stage of family life cycle, income, family size, length of residence, and home production of goods and services? This study attempts to provide an informed basis for answering the foregoing questions.

The present study comprises the initial phase of a research project of the Michigan Agricultural Experiment Station in conjunction with the Department of Family Ecology in the College of Human Ecology. The master project is entitled, "Family-Community Linkages in Meeting Resource Development Needs in Rural Michigan."

Direction of Research

Investigation of this area of family functioning represents a response to a social problem affecting families today. Even as early researchers in the field of home economics responded to fundamental problems of an adequate and healthful food supply, clothing needs, and family relations (Schlater, 1970), so today's researchers are extending

their research goals to "improving the quality and availa-
bility of community services which enrich family life." In
1967 efforts in this direction represented only 4 per cent
of the scientist-man-years spent in all research programs
in the field of home economics (Schlater, 1970, p. 90).
Therefore, it is imperative to focus research directly on
family functioning: the availability and utilization of com-
munity resources.

Not only is the frontier of research in home econ-
omics extending beyond the internal functioning of the family
to the externalities of public programs, but it is moving
from the description of relationships among disparate ele-
ments to analysis and simulation of operations. This is
conceptualized in the cybernetic mode of research described
by Black and Broderick (1972), which focuses on system beha-
viors. In their model adaptive relationships such as those
between the family and community can be analyzed.

The present study focuses on family behavior as
related to utilization of the community. Since there is
little precedent for the holistic approach this concept
involves, this study is limited to the quantifying of what
in the long term are adaptive behaviors, but in the short
term are descriptive elements of the linkages families
form with the community subsystems. This method is in
the direction of research in relationships as discussed by
Etzioni and Lehman (1967), who point out some difficulties

in researching a functional unit such as the community composed of families and community subsystems. These dif-ficulties exist because of the dual nature of an organi-zation. On the one hand, a functional system is goal oriented. For example, the basic goal of a business sub-system is the primary one of providing goods and services at a profit; the goals of families may not be so singular or so easily evaluated; the goals of the community may not be articulated at all.

On the other hand, some resources must be diverted from the functional goal to nongoal processes of system maintenance. Hence there is some distortion if only "out-put goals" are analyzed, for this overlooks some important relationships that are better analyzed through a system-model.

> This [system-model] approach involves the analy-sis of relationships which must exist for organizations to operate at various levels of effectiveness. It asks what is the balance among the various component-parts which will make for higher achievements as compared to other combinations (Etzioni and Lehman, 1967, p. 7).

The system-model basis for research is more exact-ing and expensive to implement than the goal-model. As a first step it "requires that the analyst specify what he considers to be a highly effective allocation of resources" (Etzioni and Lehman, 1967, p. 8). To arrive at this nor-mative standard, there must be knowledge about the effects of the behavioral and aggregate mix of community components. It is in this context that the results of this study will

apply. By focusing on contact hours of families in the local community in contrast to contact hours in outside communities or in home production, there will be some understanding of the use of the community by families to relate to other perspectives about the viability of the community.

As explained by Etzioni and Lehman (1967, p. 7), the criteria for analyzing the system-model are different from those relating to the goal-model.

> For the system-model explicitly recognizes that the organization needs to solve certain recurrent problems other than those directly related to the achievement of the goals, and that excessive concern with the latter may result in insufficient attention to other necessary activities and in a lack of articulation between the inflated goal-activities and the de-emphasized nongoal activities.

From an historical perspective it is understandable how the meeting of family resource needs becomes a nongoal activity for many communities. Cities originate and develop at critical geographic locations, associated with three stages of the extraction and distribution of resources (Berry, 1968). The primary stage is the extractive: agriculture, mining, forestry, and fishing. The second is the processing, largely manufacturing. At the tertiary stage, the distributive processes of transportation, wholesaling, retailing, and services support the city. These distribution points also spring up at the nexus of changes in transportation methods, as from water to land. Some of these, as Chicago, remain viable even after change in transportation mode, where less critical centers decline.

Because the economic growth of a community benefits its inhabitants, it has often become an end in itself. However, Winnick (1966) suggests that when place prosperity comes through redistribution rather than growth, there are economic and social costs to be taken into account. For the entrance of a new retail outlet may only draw business from the smaller stores in the area; the new factory may attract a manufacturing process from a depressed locale that cannot afford to lose it. Under such circumstances only a favored few may receive the benefits of increased property values while the taxpayers as a whole share the burden of improved municipal services. A more realistic view of the "place prosperity" motive may be gained by assessing the costs to those who lose through the improvement as well as for those who benefit. This moderating view would touch on those factors that closely affect families: the increased taxes, reduced employment opportunities, safety hazards of traffic congestion.

Another moderating view of community functioning is proposed by Krieger (1972). He views the community as a social system supporting individuals in their development. Relying on Erikson's model of epigenetic development, he suggests that there are measurable indicators of failures for the eight stages of human development affecting community policy decisions. Therefore, the well being of humans becomes a goal activity, rather than a nongoal activity.

A life cycle indicator orients the evaluation of
social policy and the social quality of life towards
the individual and his development. Conventional
indicators are programmatic in orientation. They
look at housing or education or health services. A
life cycle indicator cuts across these programmatic
classifications. It can show the integrated effects
of programs on individuals, suggest tradeoffs among
programs and point up failings in the collective
impact of a set of social programs (Krieger, 1972,
p. 306).

These views are representative of many (Wilcox,

et al., 1972) proposing the need for and approaches to

measurement of social progress. An early spokesman, Bertram

Gross, attributes the interest to "part[ly] from the demands,

or needs, of policy-makers and part[ly] from the probing

intellectual activities of social scientists in various

disciplines" (Gross, 1967, p. 361).

The great value of social systems accounting and of
comprehensive information on varying aspects of struc-
ture and performance is that they provide a conceptual
and information basis for economically scanning the
array of all possible kinds of relevant data and select-
ing those that are most relevant under specific circum-
stances (Gross, 1967, p. 374).

This statement summarizes the basis of this study:

that by inquiring of all family members their total use of

the community over a period of a year, some general patterns

of family utilization of community resources will emerge.

Conceptual Framework

In this study the family is viewed as a unit inter-

acting with the community in an exchange of resources.

These interactions are mutually supporting. Kuhn (1963)

describes these interactions as transactions. And so it

can be seen in the family interaction in the community: the family's need for food and clothing, for instance, can be satisfied by internal production or by patronizing the appropriate store in the community. The decision to link with the store contributes to its functioning, and the degree of acceptance of this outlet by many families will determine the level of its activity over time.

The family may need to link with a variety of community subsystems. For the purposes of this study, community services are classified as relating to the following subsystems: business, employment, welfare, recreational, cultural, religious, civic, health, and educational. Not only will families differ in the scope of subsystems they contact, but will also differ in the amount of time they spend acquiring the resources they are seeking.

The process of acquiring resources involves not only the desired resource, but the medium of exchange and allocation of time. Since the amount of time is a constant for all, this was employed as a measure of the need for and utilization of community resources. This approach masks the differences in effectiveness: the time spent in comparison shopping, or the satisfaction with the resource. Further study would be needed to assess if the resource is functional to the family system. Recording of hours only indicates activity by the family in acquiring resources.

In this functional relationship between the community and the family, a distinction will be made between those

transactions primarily benefiting the family and those primarily benefiting a community subsystem. For instance, the family with many children will benefit more from the public school than the childless family. Although at the societal level, it is desirable that all be educated to a minimal level to insure continued technological and social development, in this study linkage with the public school is treated solely as a family benefit. Also, some families require assistance of social services. These come in many forms, including payments for child support or reduced interest rates in subsidized housing.

In other linkages, the community subsystems gain through participation of individuals or families. While participants may benefit in various ways such as satisfying psychological needs, in the context of this study the resource flow moves from the individual or family to the community. Many organizations, such as youth groups, could not exist without the aid of citizen contributions. Also, in the health subsystem, volunteers contribute time to conducting classes, soliciting funds, and performing services in hospitals.

In addition, in other subsystems of society where market conditions prevail, the transaction is based on an exchange of money for goods and services. The time spent in the subsystem may or may not be related to income, but the transaction itself will be considered an even exchange in terms of resource flow.

Thus, in this description of interactions of families with the community there are in general three types: situations where the family receives a resource for which it does not contribute in equal value (negative flow); situations where voluntary contributions by individuals and families determine the continued functioning of a community subsystem (positive flow); and situations where economic values are the basis for the transaction that is mutually beneficial (neutral flow).

One important subsystem of the community not being examined in this study is the friendship and extended family network. A large body of data establishes the importance of this network, especially with blue-collar workers. According to Axelrod (1956), this pattern includes all segments of the population except for a small group with exceptionally high status, high income, or some college education.

It is acknowledged that the exchange of resources among members of a family and their friends can contribute a great deal to the viability of a particular family system. And it may be that community decision makers need to incorporate such strengths into the community development process. However, this study is limited to documenting those exchanges with the public community, whether profit making or public supported, that are currently within the realm of community decision making.

Theoretical Definitions

Community: A territorial and resource unit with a
minimal population co-existing in an enduring temporal pat-
tern. This population must include representatives of
three generations and both sexes "capable of re-enacting
in the present and transmitting to the future the cultural
and institutional inventory of their distinctive and his-
toric tradition" (Arensberg, 1961, p. 253). Though various
subcultures are represented in the community, they are not
dominant as in a slum or wealthy bedroom community.

Family: A corporate unit of interacting and inter-
dependent personalities who have a common theme and goals,
have a commitment over time, and share resources and living
space (Hook and Paolucci, 1970).

Linkages: Pathways through which flow energy as
matter, or patterned energy as information (Odum, 1971).

Human resource needs: The inputs of energy and
information required by a human system to fulfill its func-
tions.

System: A set of elements interacting with one
another in a discernible pattern for the fulfilling of a
particular function.

Subsystem: A system essential to the functioning
of a larger system, but with a functional or physical boun-
dary that makes it possible to be examined separately.

Operational Definitions

Community: The incorporated cities of Owosso and Corunna, Michigan, representing small communities with far fewer resources than a large city such as Detroit. According to the 1970 census, Owosso has a population of 17,179 and Corunna 2,829. They fulfill the theoretical definition of a community by including diverse cultural and institutional elements.

Family: One person or a group of individuals living together in one household and performing many family functions (Schlater, 1970).

Linkages: Reported contacts between the family subsystem and community subsystems.

Scope: Family contacts with different sybsystems.

Penetration: The number of hours a family contacts a subsystem.

Flow of resources: Index of the dominant direction of the family-community flow of resources, whether to the community or from the community. Three dimensions of flow are under study:

Positive: Where temporal or financial contributions to the community support a viable community. The score is derived from selected data on penetration of cultural, civic, religious, health, education, and employment subsystems. In addition, information on local assessed valuation of the

residence is included to represent a family's contribution through property taxes.

Negative: Instances of a family's use of community resources where this use exceeds temporal or financial contributions. This includes selected penetration scores from education, culture, health, civic, and recreation subsystems.

Neutral: Penetration scores for the business subsystem, and selected data from education, if private or parochial, health, recreation, and culture, where families exchange money for goods and services of equal value.

Human resource needs: Represented by contact hours in the community subsystems.

Community system: The institution of activities enclosed within the territorial limits of market places designated by residents in the adjoining towns of Owosso and Corunna, Michigan.

Family subsystem: Families from lower to upper socio-economic classes as these represent diverse relationships to resources (Hollingshead, 1967).

Community subsystems: Community institutions of business, employment, recreation, culture, religion, education, health, civic (municipal), and welfare.

Objectives

The objectives of this study are:

1. To devise a system of measurement for the family's linkage with community resources.

2. To determine the relationships among scope, penetration, and flow dimensions of family-community resource linkages and selected family variables: social position, size of family, stage of family life cycle, income, length of residence in the community, and hours spent in home production.

3. To determine broadly the families' unmet resource needs in the community.

Assumptions

The assumptions underlying this study are:

1. Communities are composed of various subsystems and their elements which provide resources to the family system as well as other subsystems within the community, such as the fire department protecting business and industry as well as families.

2. Contact hours of families represent a linkage through which resources flow between the family and community.

3. Families utilize community resources in a typical pattern that enables them to estimate the number of contact hours they spend in community subsystems.

Hypotheses

The hypotheses formulated for this study are:

Hypothesis 1: Scope and Family Variables

H_O: There is no relationship between scope and social position, family size, income, stage of family life cycle, length of residence, and home production.

H_A: Scope is positively related to social position, family size, income, stage of family life cycle, length of residence, and home production.

Hypothesis 2: Penetration and Family Variables

H_O: There is no relationship between penetration within the community and social position, family size, income, stage of family life cycle, length of residence, and home production.

H_A: Penetration within the community is positively related to social position, family size, income, stage of family life cycle, and length of residence.

H_O: There is no relationship between penetration without the community and social position, family size, income, stage of family life cycle, length of residence, and home production.

H_A: Penetration without the community is positively related to social position, family size, and income.

Hypothesis 3: Flow and Family Variables

H_O: There is no relationship between flow within the community and social position, family size, income, stage of family life cycle, length of residence, and home production.

H_A1: Flow within the community is positively related to social position and income.

H_A2: Flow within the community is negatively related to family size.

H_O: There is no relationship between flow without the community and social position, income, family size, stage of family life cycle, length of residence, and home production.

H_A: Flow outside the community is positively related to income and social position.

Hypothesis 4: Suggestions for Community Development and Family Variables

H_O: There is no relationship between numbers of suggestions for community resource development and social position, family size, income, stage of family life cycle, length of residence, and home production.

CHAPTER II

REVIEW OF LITERATURE

The research discussed in this chapter has been
selected to illustrate dimensions associated with the
family's linkage to the community. The topics are arranged
in the following order: family, linkages, and community.

Family

The emphasis in the research described below is the
methodology of studying the family as it relates to the
community. Half utilized the technique of participant
observer, half an interview schedule.

Kunkel (1967) employed a behavioral model to com-
pare the relationship of a tribe of Amazon Indians with
different environments. Since behaviors are learned and
are combined to form activities, then appropriate behaviors
can be learned in adapting to the environment. In the sit-
uation under study, the fundamental relationship among
individuals centered around the sustenance activity.

The two environments with which this tribe has
interacted were the high plateaus, or savannahs, an area of
some jungle and relatively scarce game. The dominant social
unit was the village, for all the men were required to

cooperate in the hunt and in clearing for the gardens.
The group hunt could consume 12 hours a day. Although it
was recognized that game belonged to the one who had killed
it, it was always immediately shared with all other families
in the village. This sharing received strong reinforcement
from the fact that the game may be so large that one fam-
ily could not eat it before spoiling in the hot climate.
In addition, one family may not be successful enough to
meet its own needs. Strict division of labor and extreme
male dominance prevailed. The women cultivated gardens
and prepared food under many taboos, spending, therefore,
much time with other women. The men spent free time with
each other when not procuring food. Consequently the
nuclear family was unimportant.

At the time of this report, almost two-thirds of the
families had moved permanently to the banks of the Amazon.
The sustenance activities here were the gathering of rub-
ber and catching fish. The gardens near the river did not
have to be rotated every two years as on the savannah: a
requirement that dictated heavy manual labor in clearing the
forest. All these activities tended to reinstate the nuclear
family and reinforce individual effort. Trading the rubber
for manufactured goods also reinforced the smaller unit.
There was little general socializing among families, and
interpersonal hostility became more common among the
river people.

This illustrates in a marked degree the adaptability of individuals and families to environmental sustenance activity. The same possibilities of adaptation exist for families in the present resource linkage study when some men worked nights and others left home about 4:00 a.m. to work in a distant city.

Kunkel (1967) also discussed a problem that arose in relation to this study: how to treat individual behavior so as to represent family behavior. "Activities do not exist by themselves, in limbo--persons act, and thus concern with behavior necessitates concern with individuals" (Kunkel, 1967, p. 13). For instance, in the example above, the women in the savannahs were seen to do one activity and men another, and these combined to represent activity by sex and organization at the village level. However, the individual behaviors by men and women of families living on the river combined in activities organized at the level of the nuclear family.

In a study of migration in Canada, Abramson (1968) noted some similarities and differences from those described above. The subjects were 100 former farmers now moved to the city with their families. To be eligible for inclusion they must:

> (a) have owned or operated a farm for at least three years before their removal; (b) have left their farms within 10 years of the interview; and (c) have been below retirement age and still in the labour force at the time of removal (Abramson, 1968, p. 5).

Although the focus of the study was on the adjustment problems of former farm operators and their families, their reasons for migrating do indicate the quality of some linkages with resources that contributed to their leaving and their feelings about the move.

In most of the cases it appeared that it was a combination of unsatisfactory levels of living to be gained from the farm and the desire for better services, primarily education and health, that prompted the movement from isolated farms to the city of Saskatoon. Before the move the mean distances of families for some of the services were: 10.2 miles from a trade center; 6.9 miles from grain delivery; 8.9 miles from a high school; 8.8 miles from church; 15.7 miles from a doctor. The friction of distance appeared to become more important when children were ready for high school, or health problems required frequent medical attention.

The sample was divided into three adjustment groups, identified as the integrating group, the accommodating group, and the isolated group. The number of memberships in organized social groups was used as an index of participation in group and community activities. The subjects were evenly divided among the three groups. One conclusion of the report could involve a community resource: pre-migration counseling aid in the adjustment of the isolated group. The integrating group had made more linkages with organized

is capable of serving all his needs" (Goldschmidt, 1947, p. 41). It may be that families did not expect a diversity of resources, so this illustrated a case of mutual adaptation, where residents restricted their needs to what was available, or of assuming that no other needs existed.

The technique of data collection through the participant-observer, represented here in the studies of the Amazon and the California farming community, would seem to be useful in studying family-community linkages. It would enable a researcher to detect a pattern of resource utilization in families who claim to have no discernable pattern. An example is the wife of a factory worker who declined to participate in the present study because family members shopped spontaneously.

There have been many studies on community participation that link that activity with higher socio-economic levels. One such study (Anderson, 1946) suggests there is an element of self-qualification. This research on the family relates their participation in community organizations with self-ratings. The male and female heads of 344 New York farm families ranked themselves from one to four in relation to five factors. Two of these factors were indicators of social status: "amount of money for family living" and "living comfortably in the home." The three indicators of social participation were: "leadership in community affairs," "participation in formal organizations," and

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Kunkel (1967) also discussed a problem that arose in relation to this study: how to treat individual behavior so as to represent family behavior. "Activities do not exist by themselves, in limbo--persons act, and thus concern with behavior necessitates concern with individuals" (Kunkel, 1967, p. 13). For instance, in the example above, the women in the savannahs were seen to do one activity and men another, and these combined to represent activity by sex and organization at the village level. However, the individual behaviors by men and women of families living on the river combined in activities organized at the level of the nuclear family.

In a study of migration in Canada, Abramson (1968) noted some similarities and differences from those described above. The subjects were 100 former farmers now moved to the city with their families. To be eligible for inclusion they must:

> (a) have owned or operated a farm for at least three years before their removal; (b) have left their farms within 10 years of the interview; and (c) have been below retirement age and still in the labour force at the time of removal (Abramson, 1968, p. 5).

Although the focus of the study was on the adjustment problems of former farm operators and their families, their reasons for migrating do indicate the quality of some linkages with resources that contributed to their leaving and their feelings about the move.

In most of the cases it appeared that it was a combination of unsatisfactory levels of living to be gained from the farm and the desire for better services, primarily education and health, that prompted the movement from isolated farms to the city of Saskatoon. Before the move the mean distances of families for some of the services were: 10.2 miles from a trade center; 6.9 miles from grain delivery; 8.9 miles from a high school; 8.8 miles from church; 15.7 miles from a doctor. The friction of distance appeared to become more important when children were ready for high school, or health problems required frequent medical attention.

The sample was divided into three adjustment groups, identified as the integrating group, the accommodating group, and the isolated group. The number of memberships in organized social groups was used as an index of participation in group and community activities. The subjects were evenly divided among the three groups. One conclusion of the report could involve a community resource: pre-migration counseling aid in the adjustment of the isolated group. The integrating group had made more linkages with organized

social groups as well as employment compared with the
other two.

Another approach to the study of the family's
linkages with the environment was made by Goldschmidt
(1947). As a participant observer for eight months in the
farming community of Wasco, California, he endeavored to
participate in every level of the Wasco community. And
there were distinct levels of social organization, asso-
ciated primarily with the length of time in this community.
The nuclear group consisted primarily of landowners and
farmers who had come early to homestead the area. They
linked with particular stores, churches, and social groups.
The established farm workers linked with parallel organ-
izations, while the late comers and transients were iso-
lated.

The farms were large, mechanized, and dependent on
many field workers, hence the dichotomy of population. In
this direct contact with the extractive process, wealth was
associated with the land and dominated the social values of
the community. The cleavage in church, clubs, and interest
groups was along occupational lines. This economic orien-
tation so permeated the community that sharing of imple-
ments and labor was controlled by renting, not need as
with the Amazon Indians (Kunkel, 1967).

In the 1940's, Wasco, a town of 4,000, was "the
smallest town to which the local farmer can go, [and] it

is capable of serving all his needs" (Goldschmidt, 1947,
p. 41). It may be that families did not expect a diver-
sity of resources, so this illustrated a case of mutual
adaptation, where residents restricted their needs to what
was available, or of assuming that no other needs existed.

The technique of data collection through the
participant-observer, represented here in the studies of
the Amazon and the California farming community, would
seem to be useful in studying family-community linkages.
It would enable a researcher to detect a pattern of resource
utilization in families who claim to have no discernable
pattern. An example is the wife of a factory worker who
declined to participate in the present study because family
members shopped spontaneously.

There have been many studies on community participa-
tion that link that activity with higher socio-economic
levels. One such study (Anderson, 1946) suggests there is
an element of self-qualification. This research on the fam-
ily relates their participation in community organizations
with self-ratings. The male and female heads of 344 New
York farm families ranked themselves from one to four in
relation to five factors. Two of these factors were indi-
cators of social status: "amount of money for family living"
and "living comfortably in the home." The three indicators
of social participation were: "leadership in community
affairs," "participation in formal organizations," and

"participation in informal social affairs." Less than 10 per cent placed themselves in the first rank on any factor. Only 5 per cent felt they had enough money for family living to place themselves in the first rank. Fifty per cent placed themselves in the top two rankings regarding living comfortably in the home. The families tended to rate themselves higher in level of living than in participation.

These self-ratings were compared with social characteristics of size of farm, land class, tenure status, number of years family was established in the community, a socio-economic score developed for farm families, and a formal participation score. As expected there was replication of the findings of earlier studies that high participation in formal community activities was correlated with high social position, high economic position, owning the farm, and family maturity. In addition, however, participation was related to the self-ratings: "Families accept for themselves a status position and participate in accordance with these self-judgments." And as Anderson concludes, "promoting wider social participation is not simply a matter of getting families to join in activities, but also a problem of overcoming attitudes toward themselves that block such participation" (Anderson, 1946, p. 258). Thus, according to this research, the linkages families make with the community are a manifestation of a gatekeeping mechanism.

As the family adapts to the environment, it is mod-
ifying the resources it utilizes and the behavior it employs.
The formation of linkages is not only a dimension of this
behavior, but fundamentally describes individuals and fami-
lies in our society.

Linkages

Chapin recognized that linkages determine land
use as expressed in household activity patterns (Chapin,
1968). The study of behavior of families will predict
changes in uses of the community and the consequent demand
for different kinds of services and their land use require-
ments. In the study described below (Chapin and Hightower,
1965), the interest focused on how families would use "extra"
time, such as would become available in a shortened work
week. This utilization pattern could predict a need for
increased community resources.

The households under study were selected at random:
half from a census tract in the lower half of the income
distribution of Durham, North Carolina, the other half from
a census tract in the upper half. One member from each of
121 families was interviewed. At least half were the work-
ing head of the household; the other half were the spouse
or other adult member of the household.

The study yielded data about distribution of time
allocated by various members of the household over the
previous 24-hour period as reported by the interviewee

within predetermined activity systems consisting of:
(1) income-producing activities, other than the principal
job; (2) child-raising and family activities; (3) educa-
tional and intellectual development activities; (4) reli-
gious activities; (5) socializing activities; (6) activities
involving recreation and relaxation; (7) participation in
club activities; (8) participation in community service and
political activities. The actual time allocated to these
activity systems was described in terms of duration, and
the destination located on a 1,000-foot grid. Information
was also secured about satisfaction with these activities,
as well as the basic demographic variables.

The second major portion of the study was designed
to determine preferences for use of leisure time, on the
premise this would become more important in the family
activity pattern. The individual was asked to determine
his ideal (preferred) use of time given 16 daylight hours
and 28 evening hours. These represented the hours avail-
able after all "necessary activities" were accounted for.
He recorded his preferences by pasting stamps next to the
categories he chose. Then he was asked to imagine that
it was ten years later, and because of automation and a
shorter work week he has more time off (dividend hours)
in the form of two afternoons. Then with marked stamps he
recorded his choice. This was to reveal the marginal
choices that may be operating in the change mechanism.

Inasmuch as the general categories were goal oriented rather than activity oriented, there was apparently some difficulty in categorizing some hours.

> For example, a PTA meeting may be simply "work" for the teacher, a chance to be of "service to the community" for one mother, a necessary part of good "child-raising" for another, an opportunity for "social interaction" with others of similar age and interests for a third, and in most cases will be some combination of these (Chapin and Hightower, 1965, p. 227).

One serious drawback of this study was the lack of statistical treatment. The researchers considered this an hypothesis-generating study, instead of hypothesis testing, and sufficient reason for not treating the data statistically. Consequently it lacks rigor which would in fact contribute to its claim as hypothesis generating. Statistical treatment would also enhance a pattern found among the respondents.

> For a number of people, 44 hours of discretionary time seemed to be all that was desired or required. From comments by respondents it appears that some of the hours allocated to the categories mentioned above, particularly the at-home recreation-relaxation category, were placed there not through positive preference but simply because the respondent did not want to allocate them anywhere else and chose to regard these as residual categories (Chapin and Hightower, 1965, p. 226).

Another drawback could be the accuracy of estimates of the amount of time spent by all members of the family as provided by one head, one of whom had a full-time job. This is especially questionable if the time were to be given in hours. Perhaps other family members were there to verify the record. In the absence of that assurance, it seems a

possibility that there was opportunity for socially approved responses even though the time limit of 24 hours would invite accurate detail.

One may also question how realistic the preferred and dividend hour allocations were. These were secured through the application of stamps representing free hours to the desired activity. The original 24-hours record represented the actual allocation of time practiced by individuals within the context of the family. The preferred and dividend hours represented individual choices, apparently by-passing the family decision-making process. Thus they may not be as predictive as the authors claim, since the individual preferences could be modified by group decisions.

An example is the desire for more active recreation, which could be translated into land use for recreation areas. The present pattern of the passive, at home, recreation-relaxation which accounts for 68 per cent of the actual recreation and relaxation activities reported, would decrease to 58 per cent under preferred time, and to 50 per cent under dividend time, while active, away from home recreation would increase from 9 per cent of actual time to 23 per cent in preferred time and 29 per cent in dividend time. Some family influence may be operating that inhibits the present participation in active recreation, given the more than 10 per cent differential between actual and preferred.

On the other hand, these preferences may be moderated by habit. As Monane (1967) states:

> It is because of the power of past socialization, that is, the tendency for old-system norms to persist so that they may interfere with proper action in a new system, that students of industrial and other production units often recommend a thorough change of personnel in a new system rather than a retraining of the old.

Would the marginal desire for active recreation be strong enough to overcome the present habit of passive recreation? The accuracy of this analysis of the desired resource linkage for families has implications for community expenditures.

Following Chapin's model, Hemmens (1970) analyzed data from interviews in the home with 55,000 members of 16,000 households on a selected weekday in Buffalo, New York, about their out-of-home travel. Since the original purpose of the study had been to determine the utilization of modes of transportation, such as car, bus, truck, those trips by walking or bicycle were not included. The 92,000 out-of-home activities were coded to 43 distinct activities. The findings of interest to the researchers were the use of multiple activity journeys and the time of day and duration of these trips. They found that "members of households that are young, white, and well-to-do are middle class, live in single family houses and own several cars are most likely to link activities in complex out-of-home journeys." Members of households whose characteristics are the opposite

of these are least likely to make multiple activity journeys.
Mostly their out-of-home activities are done one at a time
with a return home before another is undertaken (Hemmens,
1970, p. 61).

In analyzing their data it appears that time spent
in the social-recreation category accounts for more hours
than the categories covering personal business and shopping,
and follows hours for work and education. Thus the interest
in recreation noted in the study described above (Chapin
and Hightower, 1965), is reinforced from another perspec-
tive. It is difficult to compare the data between these two
studies, for one is oriented to the activity and the other
to the family.

Another approach to the understanding of the family's
relation to recreation and leisure is taken by Havighurst
and Feigenbaum (1958), based on role patterns derived from
an earlier study by Havighurst (1957). These orientations
were located in a group of adult men and women as follows:

	Male	Female
Community centered	19	14
Home-centered high	22	12
Home-centered medium	35	48
Low level	18	17
Ungrouped	6	9

According to their pattern of using community
facilities, about 80 per cent of the men and a few more of

the women centered their activities in the family system.
Activities were conceptualized as indicating movement from
the family system to community subsystems in nine levels of
distance from the family. The home-centered high, home-
centered medium, and low level focus their activity on the
four levels closest to the family system:

1. Radio, conversation

2. Sewing, TV, cards, fixing

3. Gardening

4. Movies, church, union, sports events

The community centered group extended to level 9,
the activity focused outside the family system.

5. Fishing, hobbies

6. Boy Scout leader, ladies auxiliary

7. Concerts, theatre

8. Country club

9. Men's business clubs, Chamber of Commerce, women's
   charity organizations

When there was overlap, subjects were placed in the dominant
area. Middle-class individuals chose to be either community
centered or home centered, but working-class people were
rarely community centered.

The Havighurst study (1957) called the Kansas City
Study of Adult Life described the activities of adult men
and women between 40 and 70. Of the 234 individuals inter-
viewed, 110 were men and 124 women. The objective was to
quantify performance in the social roles of worker, parent,

spouse, homemaker, user of leisure time, friend, citizen, club or association member, and church member. Scores ranging from low to high were assigned to each role based on information on activity patterns acquired through interview. These were related to social variables as sex, age, social class, education, personal adjustment, manifest complexity, social mobility, and motivation.

Results were that performance was more frequent in the roles of worker, parent, and spouse than in the roles of citizen, church member, friend, and association member. Out of 27 patterns of role performance, six groupings emerged: upper middle class A; upper middle class Al; family centered middle class B; common man C; family centered common man D; lower class F; and mixed pattern. The titles given these classifications coincide with the finding that performance is closely related to socio-economic status and not to age. In both of these studies, the individual is identified by his behavior relative to the environment. Inasmuch as these behaviors include exchanging resources with the community in particular patterns, these concepts of social role and life style are parallel to the term linkage in this study.

The relation of community linkage patterns to socio-economic class was reinforced by a study restricted to aged Spanish-Americans. It was found that traditional orientations had been diluted regarding the role of family in helping this group. The sample of 291 individuals were asked

about where they might receive help: their families, the church, or social services. Nearly one-half felt the church should be doing more than it is now doing, while one-third of both men and women felt that it should continue its present course. There was little knowledge about resources available in the community. Since their leading problem was one of health, it would appear to this reviewer that specialized services would be required beyond what families or church could offer.

Although interviews with resource people in the community disclosed that officials operating within the Spanish-American enclave were more aware of their needs than the city officials, the barriers of reticence on the part of the indigent individual, the language barrier, and lack of transportation operated to inhibit contact with community resources.

This group appeared to be caught in the interface between the loosened family obligations and limited access to community facilities. Specific proposals to remedy this situation in the report (Steglich, Cartwright, Crouch, 1968) were either to make contact with individuals in a door-to-door canvass or make announcements over the Spanish radio station. The first alternative is not so effective for even with Spanish literature, illiteracy would limit understanding.

The family network appears to have some importance to most families in the urban setting. In a study of 749

subjects, not identified as to sex, Axelrod (1956) found there was a relationship between participation in formal groups and informal contacts. Only 10 per cent of those who were members of a formal group belonged to four or more groups; 50 per cent belonged to only one group. And as has been shown by previous research, those individuals with a better education and higher income belonged to more and participated more actively than those with less educa‑ tion and income.

In contradiction to many predictions about the effects of urbanization, Axelrod found nearly two-thirds of the subjects met with friends or relatives more than once a week. With these groups relatives ranked above friends for all except the highest status group. There was a tendency toward a relationship between participation in formal organizations and informal contacts. And 39 per cent of his sample belonged to no formal organization.

An intriguing aspect of linkage is its relation to migration. Migration essentially is the disconnecting of linkages in one geographical area and re‑establishing them in another. Sly (1972) employing the POET model of sociological ecology (Population, Organization, Environment, Technology) proposed that changes in organization reflect changes in technology and environment. The focus of the study was on the negro population from the "old cotton belt," a sample of 235 counties stretching from South Carolina to Texas. Two decades, 1940‑1950 and 1950‑1960

were compared on multiple bases to see the relation of
factors of technology, organization, and environment
on migration of black males.

> Under the organizational rubric we included (1) the
> differential stability of positions in the agricul-
> tural labor force, and (2) lack of access of nonagri-
> cultural employment; under the environmental rubric
> we included (1) the exigencies of cotton production,
> (2) acreage control programs, (3) competition from
> whites, (4) concentration of land holdings and (5)
> increasing farm size; and under the technological
> rubric we included the mechanization of agriculture
> (Sly, 1972, pp. 619-620).

In general there appeared to be substantiation for
the hypotheses of the effect of technology and environment
on organization. Because of increased mechanization of
larger holdings primarily in the hands of whites, there
were no niches for the black male to work. Although if
there were non-agriculture jobs available there was evi-
dence the worker would stay in the area. In the second
decade the average rate of migration continued to rise and
the standard deviation continued to decrease, leading to
the conclusion that this migration was more random with per-
haps an element of attraction to another system.

Bell (1968) and Michaelson (1970) discussed a dif-
ferent kind of migration, that of the one to the suburbs.
Families were attracted to a new, more congenial, environ-
ment leaving a congested area that no longer had the space
to accommodate the increasing population. A study of 100
individuals encompassed two adjacent suburbs of Chicago;
one of these, Park Ridge, housed individuals with higher

average income, occupation, and education, than did those
in Des Plaines; although between the two there was a rela-
tively wide range in respect to socio-economic status. Of
the sample, 32 per cent were blue collar, 24 per cent lower
white collar, and 44 per cent upper white collar.

Most of the reasons for the move revolved around the
physical features of the environment; more space for child
play, cleaner air. There were also social implications of
not being close to neighbors as in the apartments many
of them had left. Some of them mentioned the opportunities
for informal networks; children playing with others the same
age, adults with children knowing how to treat children;
the formal community organizations of better churches for
the children and schools with smaller classes, more individ-
ual attention given by the teachers.

The life style most prevalent was that of familism,
the others being consumerism and career. These three did
not appear to be adequate to account for all the responses.
A fourth called "quest-for-community" was apparent. This
included friendly neighbors, greater community participation,
and a sense of belonging to a community. These motives
appear to correlate with other studies indicating that par-
ticipation is more prevalent among higher socio-economic
classes.

Michaelson (1970) also is researching the moves that
families make. His sample includes 900 and will extend over
a five-year period, contrasting the residents of an inner

city location and suburban location. Interviews before the move are to be followed by others at intervals of two months, a year after, three years after, and five years. Only families of child-bearing age, with or without children, are being included. They are also in the higher income levels because of the opportunity for choice. By holding economic levels constant, there would be greater visibility of the life-style component: the self-selected linkages with the other subsystems in the community. Time and money budgets will be the basis for determining life-style orientations through reporting a "yesterday" and "last Sunday." For each phase there are separate interview schedules in a household for husband, wife, and one child, age 10 to 17.

Initially, wives are to be compared with wives and husbands with husbands. Ultimately, there will be comparison of individual patterns with family patterns. It is expected that suburban families will emphasize physical activity and urban residents the linkages with community facilities. Like Chapin and Hightower (1966), Michaelson (1970) is basing the typology on activity patterns.

Anderson (1955) and Anderson and Sibley (1957) also examined an effect of migration. Their interest focused on linkages: of participation by families in community organizations. Both studies examined the linkages of families living on the fringe area of Ithaca, New York. One study (Anderson, 1955) examined the participation of families moving from the city of Ithaca to the fringe within a

period of ten years; the other, the families moving to the
fringe from another area.

The majority of families were in the child-rearing
years and had lived in the fringe less than ten years. A
section dominated by post-child families was in proximity
to the Cornell campus and appealed to professional and busi-
ness families. In the narrative Anderson does not discrim-
inate along the variables of income, social position, stage
of the family life cycle, or length of residence but holis-
tically reports that 51 per cent of the families said no
new relationships had been established. Only 3 per cent
said their previous linkages had been replaced altogether.

In contrast, fringe residents who had moved from
other locations in New York state, out-of-state, or other
fringe areas of Ithaca belonged on the average to fewer
organizations than those who had moved out of Ithaca to
the fringe. Even these were concentrated in the families
in the child-rearing stages. Church membership accounted
for the highest membership, but attendance was higher in
farm or home organizations, sports organizations, profes-
sional societies, and social clubs. On the whole the
newcomers to the area attended more meetings than the ones
moving from Ithaca.

In this study in the early 50's the television set
was in the initial stages of diffusion. About 65-70 per
cent of the families of child-rearing age had a television

set. It appeared that viewing television was substituted for community linkages for some families, particularly the post-child.

The Community

The U.S. Census is a valuable source of data for information about the community, central to four of the five studies discussed in this section.

The community in the present study is viewed as the locus of resources for the family. Table 1 (Metcalf, 1962) illustrates the importance of population in the availability of resources. In effect this points out that the larger the market area, the more variety of goods and services that are available. Inasmuch as these figures are representative of customer demand, they are not static. For instance, they do not seem to reflect the current upsurge of interest in camping vehicles and bicycles. In addition, as national averages, they do not reflect specialized local conditions as feed stores in rural areas and record shops in a college town. But this table is inserted here to enable the reader to associate with population figures, the range of goods and services that may be available.

Besides serving as the locus of goods and services a community represents the mutual effort to provide services of police and fire protection, education, government, and others included in the concept of municipal services. Since costs associated with these services are distributed to the

Table 1. Number of inhabitants per store by selected kinds of business.

(National Averages)

Kind of Business	Number of inhabitants per store	Kind of Business	Number of inhabitants per store
Food stores		**Furniture, home furnishings, appliance dealers**	
Grocery stores, including delicatessens............	667	Furniture, home furnishings stores.	3,181
Meat markets......	7,266	Household appliances, radio TV stores.............	4,227
Fish (seafood markets)..........	39,926	Music stores, records, and musical instruments....	21,725
Fruit stores, vegetable markets.....	13,653		
Candy, nut, confectionery stores....	9,847	**Automotive groups**	
Dairy products stores.............	22,711	Passenger car dealers (franchised)...	4,493
Bakery products stores.............	9,006	Passenger car dealers (non-franchised)	6,839
		Tire, battery, accessory dealers........	8,284
Eating, drinking places		Aircraft, boat, motorcycle dealers.	33,763
Eating places.....	754	Household trailer dealers............	56,411
Drinking places (alcoholic beverages).............	1,507		
		Lumber, building materials, farm equipment dealers	
General merchandise		Farm equipment dealers............	9,114
Department stores.	54,875	Lumber, building materials dealers..	4,969
Dry goods stores..	19,630	Paint, glass, wallpaper stores.......	15,530
Variety stores....	8,243	Heating, plumbing, equipment dealers..	26,392
		Hardware stores....	4,997
Apparel, accessory stores			
Shoe stores.......	7,089		
Women's clothing, specialty stores..	3,882		
Children's, infants-wear stores	23,500		

centrally located in city hall. Each complements the other.
The police department, as well as the fire department, is
an example of a horizontally integrated service. When growth
in community size occurs, deployment is necessary. In the
beginning this may only involve increase in staff, but in
large cities substations are installed to effect sufficient
protection to all parts of the community. Schools, parks,
libraries, health centers, road services, and hospitals
will also be deployed among the population. An example of
the vertically integrated service is the water system. This
system includes the processes of providing the fresh water
to treating the effluent. Each of these has different
implications for costs with growth.

In a study of the municipal services in the St. Louis
area, Hirsch (1959) found that two out of the three types
of services appeared to maintain a constant in per capita
expenditures. One of these, the horizontally integrated
services of public education, fire protection, police pro-
tection, refuse collection accounted for 80 to 85 per cent
of all expenditures. Central administration, the circularly
integrated system accounting for 3 to 6 per cent of the
expenditures, will tend toward decrease in per capita expen-
ditures in early growth, but beyond a point found in medium-
sized communities, growth will tend to increase per capita
expenditures. The water and sewer service accounting for 8
to 10 per cent of expenditures will decrease as volume

Table 1. <u>Continued</u>.

Kind of Business	Number of inhabitants per store	Kind of Business	Number of inhabitants per store
<u>Drug stores, proprietary stores</u>		<u>Other retail stores</u> (Continued)	
Drug stores........	3,367	Florists..........	9,034
Proprietary stores.	36,212	Cigar stores, stands............	32,466
		News dealers, news stands.......	22,979
<u>Other retail stores</u>		Gift, novelty, souvenir stores...	12,386
Fuel, ice dealers..	6,066		
Hay, grain, feed stores.............	10,323	Camera, photographic supply stores.....	49,624
Farm, garden supply stores.............	21,470	Luggage, leather goods stores......	122,344
Jewelry stores.....	7,294	Optical goods	
Book stores........	60,048	stores...........	58,330
Stationery stores..	26,518	Antique stores,	
Bicycle shops......	100,720	second-hand stores	8,189
Sporting goods stores.............	17,620		

Source: Bureau of the Census, U.S. Department of Commerce. Number of establishments from 1958 Census of Retail Trade. Number of inhabitants residing in the United States (excluding Armed Force overseas), as of July 1, 1958.

community through its tax structure, there is interest in determining an economically "efficient" unit size. Hirsch (1959) examining municipal services in St. Louis determined there were three types of services: circular, horizontal, and vertical; each having implications of costs in relation to population growth.

The circularly integrated services are epitomized in the small town where all the municipal services are

centrally located in city hall. Each complements the other. The police department, as well as the fire department, is an example of a horizontally integrated service. When growth in community size occurs, deployment is necessary. In the beginning this may only involve increase in staff, but in large cities substations are installed to effect sufficient protection to all parts of the community. Schools, parks, libraries, health centers, road services, and hospitals will also be deployed among the population. An example of the vertically integrated service is the water system. This system includes the processes of providing the fresh water to treating the effluent. Each of these has different implications for costs with growth.

In a study of the municipal services in the St. Louis area, Hirsch (1959) found that two out of the three types of services appeared to maintain a constant in per capita expenditures. One of these, the horizontally integrated services of public education, fire protection, police protection, refuse collection accounted for 80 to 85 per cent of all expenditures. Central administration, the circularly integrated system accounting for 3 to 6 per cent of the expenditures, will tend toward decrease in per capita expenditures in early growth, but beyond a point found in medium-sized communities, growth will tend to increase per capita expenditures. The water and sewer service accounting for 8 to 10 per cent of expenditures will decrease as volume

increases. Economic efficiency may be highest in medium-sized communities of 50,000-100,000.

This study comes to different conclusions from earlier studies discussed by Howard (1969), which maintained that municipalities could effect large-scale economies developed by industry. On that basis, an "efficient" urban size would be 100,000 to 200,000 population, representing less than 1 per cent of the cities in the United States (Appendix A).

Zelinsky (1962) relies on census data to survey the shift in population from rural to urban between 1790 and 1960. The definition of rural as "anything that is not urban" was an appropriate one when there was a sharp distinction between the dense, clustered urban settlement and the isolated homestead. Thus in 1790, out of a total population of a little over 3,000,000, 5.1 per cent were urban and 94.9 per cent were rural.

By 1910, when urban was defined as a center of 2,500 population and more, the almost 92,000,000 people were now 45.7 per cent urban and 54.3 per cent rural. However, when the definition of urban was modified for the 1950 census, the distinction between territory and function had become blurred. Whereas in 1790, the functionally rural person also lived in the rural area, the development of individual transportation allows many families with linkages to cities through employment and business to live in rural areas.

For census purposes, these families are called
rural and account for 30 per cent of the 178,000,000-plus
population of continental United States. That is, they live
in the urban fringes of towns less than 50,000 or in open
country. The new definition of urban is: all incorporated
or unincorporated places with a population of 2,500 or more
but also the densely settled urban fringe around cities of
50,000 or more.

For management purposes, the important ratio may not
be the nominal one of urban to rural, although it does have
implications for funding, but of population to range of
resources available.

In contrast to Zelinsky's (1962) broad perspective
on population shifts, Fugitt (1965) focuses on the small town
in Wisconsin. By analyzing small towns over an 80-year
period from 1880 to 1960 with a probability model, he deter-
mined that given time all towns would grow to over 5,000.
The rates of growth have changed with the period of 1890
to 1900 the most rapid and 1920 to 1930 the least. The dis-
appearance of small towns under 1,000 both absolutely and
relatively has come about because of the increase in size to
another category and the decline in incorporations of new
towns. However, many towns have not changed their size
category indicating an outmigration of natural increase.

Roterus (1946) noted there are distinct differences
between growing and nongrowing cities. Employing available

statistics on the 18 cities, ranging in size in 1930 from
100,000 to less than 900,000, Roterus used comparative per-
centage changes. The growing cities experienced a 10.9
per cent increase in population in the decade under study,
while the nongrowing cities experienced only a 1.3 per cent
increase. He evaluated this population growth and nongrowth
on four categories of city functions and welfare: (1) secon-
dary employment activities such as building and real estate,
retail trade, transportation, and public utilities;
(2) municipal government; (3) population composition and
social well-being; and (4) physical appearance. As might
be expected, the growing cities compared favorably with
the nongrowing cities on almost every point. The most
dramatic was in new construction. While the value of all
construction permits declined in the United States as a
whole by 11.3 per cent over the decade, decline in the non-
growing cities was 41.1 per cent in contrast to the increase
in growing cities of 22.5 per cent. This growth was attrib-
uted to new residential construction (125 per cent), while
nonresidential construction decreased in both groups, though
more sharply in the nongrowing city. The decline in main-
tenance construction--repairs, additions, alterations, and
the like--was about the same for both.

In like manner, Roterus compares activity in retail
sales and banking as secondary employment activities. Since
the basic employment, whether extractive, processing, or

distributive, was seen to affect the population change, it was not included as an effect of change. It happened that retail sales grew in volume over the decade under study, but at a slower rate in the nongrowing cities. This was accompanied by a decline in absolute number of 18,000 employees in the nongrowing cities in contrast to the increase of 24,000 employees in the growing cities.

> It is interesting to note the change from 1929 to 1939 in sales per retail establishment between the two groups of cities. In 1929, the average sales per establishment were greater in the non-growing group. However, the sales per establishment in the growing group decreased 17 per cent in 1939 as against 1929 and decreased 26 per cent in the non-growing group. Even this differential rate still left the non-growing cities with more sales per establishment (17 per cent) than the growing cities (Roterus, 1946, p. 93).

Roterus attributes this phenomenon to establishing more retail businesses in the favorable economic climate of growing cities, or the survival of marginal businesses that tended to depress the average sales per store. In a less favorable position in the nongrowing cities was the ratio of professionals to the population. Using lawyers and doctors as representative of the professionals who contribute to civic leadership and community well being out of proportion to their numbers, Roterus (1946) found net gains accrued for both these groups only in the growing cities.

In one area the nongrowing cities made gains: in per capita expenditures for municipal government, although not at the same rate as growing cities. Nevertheless, the nongrowing cities entered the decade under study with a higher

(61 per cent) expenditure per capita than the growing
cities. By 1940 the nongrowing cities still expended 52 per
cent more in this area than the growing cities. Although
Roterus (1946) discusses this overhead as a consequence of
nongrowth, it may have been, on the eve of the depression,
a deterrent to growth in the basic industries. Another
compounding effect of slow growth on municipal revenues is
that federal and state grants based on population will
decline throwing more burden on the taxpayers.

There appeared to be effects on the age composition
of cities of growth and nongrowth over a ten-year period.
He noted that a lower birth rate decreased the numbers of
young in both cities, and increased the populations of
45-64 and 65+ in both cities. However, the nongrowing city
lost and the growing city gained in the age group of 30-44,
the age group that is more likely to provide progressive
leadership, while leadership in the nongrowing cities would
be retained in the more aged and conservative hands.

If mankind is to learn from history, it would be
useful to study these communities as evolving systems.
Since the mean founding time of both groups was in the
late 1700's, it may have been events in the system growth
rather than the age of the cities that contributes to the
growth or nongrowth. Of particular interest is the overhead
of municipal costs. If these stem from social services,
it may indicate a breakeven point that goodwill should not

trespass. On the other hand there was a period of graft in city governments that may have diverted public funds from legitimate expenditures that now have their costly after-effects.

The break-even point of public facility investments is more pertinent today, in the face of a plethora of proposals. Research in this area is made possible by computer simulation, whereby tradeoffs can be examined. Friedly (1969) focused on the role of public facility investments that occur in the urban renewal setting. He found that little research of a comprehensive nature had been done to understand and explain the specific contribution to physical and social wellbeing accruing to the residents.

At the outset he located contradictions among the goals of urban renewal as outlined in policy and as practiced in the cities. These objectives are (1) slum elimination, (2) enhancement of the central city vis-a-vis the suburbs, and (3) strengthening of fiscal capacity in the central city. These were rooted in the conflicts between people-oriented goals of "improving life opportunities for slum dwellers" and "increase in low-cost housing" with the social goal of "enticement of middle-income households into central city" and economic and physical goals.

Another dimension of his model was the welfare measurement variables. Eleven are classified in three categories: (I) economic impacts of project variables on

the housing submarket and construction industry, (II) social impacts of project variables on slum dwellers, and (III) over-all intrametropolitan redistribution effects. These lead to functional groupings of public facilities and whether they are community or client oriented.

At some point in the development of the impact model, empirical data are required to define the constraints on the system. As some of the studies examined earlier have shown, there are many sources of available statistics from which to draw. Reasoning through such a model as Friedly's could point out the areas where little is known, and consequently suggest viable research efforts that also identify the linkages with other systems.

CHAPTER III

METHODOLOGY

In attempting to present a broad view of family
contact with the community, three methodological procedures
were initiated: the response to a questionnaire by all
family members, 14 and over; the recording of use of time
over the period of a year; and the inclusion of all resource
linkages with the formal community together with the time
spent at home in supplying comparable goods and services.
Through this approach, a plotting of the territory families
would cover to acquire resources for family use would be
determined as well as what resources, in general, they are
utilizing.

Community Selection

For this study, the selected community was large
enough to fulfill the theoretical definition of representa-
tiveness, yet small enough to be limited in diversity of
resources to satisfy all needs. There would be potential
need for families to go outside the local community for
resources.

Consequently, the adjoining towns of Owosso-Corunna,
Michigan, were selected. Separated by 30 or 40 miles from

cities of larger size, they illustrated the relationship of smaller communities to the needs of families vis-a-vis other community centers. According to the 1970 census, Owosso has a population of 17,179 and Corunna of 2,829.

Sample Selection

A stratified random sample with replacement of 140 families was drawn from the population of Owosso and Corunna. Representing the 6-1 ratio between the two towns, 120 families were selected from Owosso and 20 from Corunna.

In Owosso, a pool of addresses were selected at random using the city directory: 100 north of Main Street, and 100 south of Main Street. A random sample was selected from these two areas in an effort to insure adequate representation from the high and low income groups from this relatively small sample. Both the city assessor and building inspector agreed that Main Street divides the city. The more affluent live on the north side.

The larger homes are located in a section just north-west of the business district. Many of these date from the late 1800's and are three-story brick in good repair. Others were built in the early 1900's by members of families owning and managing the two chief industries supplying parts to the auto industry. Nevertheless, there were many modest frame homes to the east of this section that were comparable to homes found south of Main Street. The newer suburbs were located at the city boundaries in the northwest and northeast

of town. On the southern boundary an apartment complex with
moderate rents was under construction. More expensive
apartment units were nearing completion at the northwest
boundary.

Pretest

The instrument used in this study was the result of
development by research project personnel over a period of
several months. During pretesting it evolved from an
interview with one family member to the questionnaire for
all family members 14 and over.

From the beginning, the goal was to gain a view of
family resource-attaining activity in the community encom-
passing the period of a year to include seasonal use of
facilities such as parks, or infrequent hospital care,
Another distinction was to differentiate between the acquir-
ing resources within the city limits or outside, "Outside"
was not specified in the questionnaire except for location
of employment, but for many families would include trips
of undetermined destination for shopping either outside the
county or to the major food stores and small shopping mall
in the township just over the city line,

In the first pretest of the schedule a research
assistant interviewed a housewife reporting on the activities
of all family members. Since this interview took about two
hours, and may not have been representative of all the family

members, the procedure was changed to include other family members.

Thus in the second pretest an appointment was made by phone for both husband and wife to answer the question- naire about their activities in the community. Forty-two phone calls were made before locating the six who coop- erated in this pretest, and even so in one instance the husband was not present because of a change of plans. Although the precaution was taken to locate at the assessor's office neighborhoods representing upper middle class and lower class, the two consenting to be interviewed in the area of low assessed valuation were not representative. One owned a small business and the other held an administrative post with the National Guard. Therefore, the third low income family was purposely selected: a woman living in sub- sidized housing in the inner city with two boys over 14.

In using the telephone to locate respondents, it appeared that besides not locating anyone at home, individ- uals would refuse, or it was not convenient for both the husband and wife to meet within the time period.

It did not seem to be difficult for the families to estimate how many hours they utilized in the community and they could state with certainty which resource they had not utilized.

The telephone procedures of this pretest appeared to eliminate a number of families. In addition, it seemed an unnecessary complication to attempt to find family members

at home in a particular evening. It would also extend the time in which to secure sufficient completed schedules for a meaningful sample size.

Consequently, another procedure was pretested with ten families. Two areas representing high and low economic status were selected. One was a section near the Lansing Country Club, the other a low income tract in Meridian Township. This time an approach was made in person: a technique approved by one individual who would not partici- pate because in their retirement the family's activity was less predictable, but who commented that a presence at the door evoked trust in contrast to a phone call. This was the only refusal in locating ten families.

The interview schedule was modified to a question- naire by adding explanatory material. After securing con- sent, the questionnaire was explained to an adult, in most cases the wife, and enough copies were left for all family members 14 and over. A single page summary questionnaire was designed for children 13 and under. An appointment was made to collect the family's set of completed questionnaires at a later date. This procedure was adopted.

Instrument

The instrument was a 13-page, self-administered questionnaire with five pages of explanatory material (Appen- dix B), divided into ten sections.

Each of the first nine sections, titled a sub-
system, described a class of resources as goods, services,
or activities, situation-specific to Owosso-Corunna, which
the family may want to utilize. These subsystems are func-
tionally related to the family as well as other systems.
The relationship covered in this study is the contact hours
of families in the subsystem. In some instances, as noted
below, data were secured about the amount of dollars con-
tributed or earned. The contributions were seen as an
alternative to the use of time, and the earnings as a mea-
sure of availability of resources. The resources that
individuals or families spent time acquiring were classi-
fied in the following subsystems:

Business: purchasing of goods and services.

Employment: hours including commuting time in paid
employment. Also hours spent in allied group as union or
professional association. Dollars earned and dollars paid
in dues to named organizations.

Recreation: hours spent in physically oriented
activity associated with sports facilities. Implication of
interest in this area is a particular type of land use.

Culture: passive recreation associated with
intellectual involvement.

Religion: church services and church-sponsored
events.

Civic: political activity and use of municipal ser-
vices. Also civic groups as Rotary, Kiwanis, or Veterans groups.

Health: use of health delivery systems; also vol-
unteer activity.

Education: full time or part time, formal or
informal.

Welfare: use of social services, ADC, and/or
subsidized housing.

The tenth section included demographic material in
addition to a question about "things that are missing."
The activities of children 13 and under were recorded on a
single sheet (see Appendix C). In addition, one sheet
(Appendix D) was used to record family information about
tenure and length of residence in the community.

Field Procedure

The researcher began field work November 21, 1972,
and completed it March 15, 1973. There was a three-week
break for the Christmas holiday. At each address a head
of the household was invited to participate in the study.
An appointment form (Appendix E) was used to reinforce the
identity of the researcher and the institution. When coop-
eration was secured, the questionnaire was explained and
sufficient copies were left for the family members to com-
plete at their convenience. A specific appointment time
was arranged.

Another information form (Appendix F) was retained
by the researcher to record the name and address of the
respondent, the date for returning the completed forms, and

number in family. About 18 per cent of the 220 households
contacted refused to participate; another 18 per cent,
although accepting the forms, returned them blank.

Houses were randomly selected but visited geograph-
ically to expedite the process. In cases where no one was
found at home even after callbacks at different times of
day, a replacement from the random list was made. Over 750
house calls were made either in response to the random
list, or on callbacks for questionnaires.

The usual practice in securing cooperation in the
study was to explain the purpose, verbalize the written
explanatory material, and help the interviewee fill out the
first half page. An appointment time within a week was
suggested, but it was always established at the respondent's
convenience. However, it soom became evident that the
procedure needed to be altered if one segment of the popu-
lation were to be included. This was the older woman
living alone. In early cases it appeared that the ques-
tionnaire would never be completed unless the researcher
conducted an interview. Soon this practice of interviewing
the single person became established.

For the most part this difficulty by older women
appeared to stem from the fact that women at home were not
accustomed to quantifying data. This possibility is illus-
trated by two contrasting cases. In one, the question-
naire was explained to the mother, an older woman keeping
house for her working daughter. By the appointed pickup

time, the daughter had filled one out on the strength of either the mother's explanation or the written explanation, whereas it took two callbacks and then the suggestion that the researcher conduct an interview before the mother's questionnaire was completed. In another situation, an older woman, past retirement age, who was still working as a bookkeeper for an automobile agency, found no difficulty in completing the questionnaire.

Within a short time, the data gathering became a rhythm of keeping appointments to collect questionnaires, returning to houses at a different time of day to locate residents, and making contacts with new families.

Independent and Dependent Variables

The independent family variables and their derivation are as follows:

Family Size: Number of family members one through eight responding to the questionnaire.

Family Life Cycle: Rodgers' categories for family life cycle based on the age of children (Nye and Berardo, 1966) were used. A modification of Rodgers' classification for childless couples expanded the category from one to eight, coding on the basis of the husband's age.

Social Position: A calculated score using Hollingshead's two-factor analysis of social position based on education and occupation (Hollingshead, 1967).

Family Income: A category of income checked by one family member representing the combined income of all individual family members who may have contributed to that income.

Length of Residence: The mean of the length of residence for the family and the one individual family member with the longest residence, when this individual had lived in the community before family formation.

Home Production: A mean family score for each subsystem based on the hours individual family members spent in creating products or services for themselves instead of buying them in the community. For most families the greatest contribution came in the business subsystem from meals prepared at home instead of eating out. Other examples are home repair or remodeling, servicing the automobile, and for many the use of television for entertainment instead of going to the movies.

The contact hours for line items within each subsystem were summed to provide total hours in each subsystem for each individual in home production. Each of these subtotals for each subsystem was subject to three computations to arrive at a family score for each subsystem. This comparative treatment for family scores was necessitated by the use of two questionnaires. All family members 14 and over were given a detailed questionnaire, while for children 13 and under a summary questionnaire was completed by the mother about their contact hours with the community unattended

by their parents. These computations were: hours for adults only; hours for adults plus hours for children 13 and under weighted equally with adults; and hours for adults plus hours for children 13 and under weighted one-half with adults.

Thus with the adults only score, the hours of the adult questionnaire which also included children 14 and over were summed by subsystem, and were divided by the number in the family to produce a family mean score for hours spent in home production by each subsystem. In order to determine the contribution of the children 13 and under, their contact hours were treated in either of two ways. When the hours of children were counted equally with adults, their total hours were included with adults, and this sum was divided by the number in the family, adults and children. When children's hours were counted as one-half, their contribution was divided in half before being added with the adult scores and divided by the number in the family, adults and children.

Standard Scores

After mean family scores by subsystem were derived, the families were compared with each other in each subsystem. In this calculation, the mean of the family mean contact hours was derived. Accordingly, the position of the mean of each family relative to the mean of all families determined which standard score from one to ten the family

received: one representing little use, ten representing most use. Those with number five were just below the mean and those with number six just above the mean. Thus each family was assigned a standard score from one to ten to indicate its relation to every other family in each sub-system.

The dependent linkage variables were derived as follows:

Scope: The number of different subsystems, without duplication, entered by family members. Entrance could be made by any family member through utilizing resources within the city limits, or outside the city limits. Standard scores were assigned to families as described above.

Penetration: Standard scores for two territories were calculated for this linkage: one for contact hours in subsystems over a period of a year within the city limits, the other for contact hours in subsystems over a period of a year outside the city limits. In addition the scores for the internal and external community were calculated three ways as described above in home production, reflecting the use of a separate, summary questionnaire for children 13 and under.

Flow: Selected portions of each subsystem were designated as positive, negative, or neutral flow. Scores were derived the same as in penetration and home production: that is, the mean for positive, negative, and neutral flow for each subsystem was determined for each subsystem and

standard scores were assigned each family. Again distinction was made between contacts with subsystems within the survey community and outside the city limits of this community.

The flow score was derived through the following formula:

$$\text{Flow} = \frac{\text{Positive-Negative}}{\text{Neutral}}$$

Positive Flow: (Standard Scores)

Employment:	Hours at work Hours with the union or professional association
Culture:	Volunteer hours for designated groups
Religion:	Church services and related events
Education:	Volunteer hours for designated groups
Health:	Volunteer hours for designated groups
Civic:	Volunteer hours for designated groups, voting, political activity

Assessed valuation

Negative Flow: (Standard Scores)

Recreation:	Hours utilizing public parks
Culture:	Hours utilizing libraries, and other designated services
Education:	Hours utilizing public education
Health:	Hours utilizing clinics, or other subsidized services
Civic:	Hours utilizing municipal services as fire, police, courts

Neutral Flow: (Standard Scores)

Business:	Hours utilizing goods and services
Recreation:	Hours utilizing designated profit-oriented services
Culture:	Hours utilizing designated profit-oriented services
Education:	Hours utilizing private school
Health:	Hours utilizing private doctors, dentists, and facilities

· <u>Suggestions</u> for community resource development required different treatment:

The linkage variables described above were quantified to provide a family score for the different dimensions. Although the suggestions, like the contact hours, were recorded on the individual level, the content of the suggestions did not lend itself to determining a family score. To do this would have required consultation by the family during which family members would participate in ranking the individually contributed suggestions. The data contain certain instances where there was consensus within the family on areas of improvement, but these occasions were not only insufficient for analysis but were not ranked.

Therefore, the suggestions were quantified by number mentioned and computed with family variables for significant relationships. Additional information of a practical nature is found in the frequency count of particular items, classified by category in Table 21.

Statistical Analysis

The raw data on which the statistical treatment is based are contact hours provided by individuals for their use of the internal community, the external community, and home production. As used in the analysis, these raw data were transformed to standard scores for families. "These standard scores are equal units of measurement and hence can be manipulated mathematically" (Downie and Heath,

1965, p. 65). The standard scores were added together for penetration scores within and without the community. They were added, subtracted, and divided to derive a flow score for the internal and external community, thereby quantifying the linkage variables.

The dependent linkage variables were compared with independent variables of family size, social position, income, stage of life cycle, length of residence, and home production. Comparisons were made in two ways: Pearson correlation coefficients and multiple regression. The correlation coefficients compared each of the 93 variables with each other on a one-to-one comparison basis. Fifty-six of these resulted from penetration scores for each sub-system, both internally and externally, and in relation to the three-way treatment of questionnaires for adults and children 13 and under. Twenty-four others referred to the three-way treatment of home production. At an alpha level of .01 significance, a correlation coefficient of .48 and above was required for a significant relationship.

The advantage of multiple regression, made possible by the computer, is that all family variables interact to predict behavior in relation to the dependent variables of linkage behavior. The contribution of each independent variable is tested through a step-wise regression procedure, and the probability levels computed. Interpretation of these contributions begins by examining the last variable to be entered in the regression and proceeding through the

variables until a significant level is reached. It is
assumed that every variable above this point contributes
to the significance. The order in which these variables
are entered by the programmer in the step-wise regression
is determined by examining the raw regression coefficients:
indicating direction and amount of contribution of each
independent variable to the relationship.

The univariate F ratios and alpha levels were com-
puted for their relation between the independent variables
and each dependent variable separately to determine the
degree of significance of each subsystem to the overall
multivariate tests. The alpha level of .01 was accepted
as significant in the multiple regression and correlation
coefficient analyses.

Reliability and Validity

A reliability sample of 120 adults was selected at
random from 277 adult questionnaires completed between
November and March. This second set of adult question-
naires was mailed in April. Thirty were returned. Consid-
ering the quantity of information required by the lengthy
questionnaire, a 25 per cent response rate may be considered
favorable. For some of the sample a period of three months
had elapsed between the first and second questionnaire;
for others, a few weeks. Correlations were computed in four
areas: contact hours inside the survey community, contact

hours outside the survey community; dollars contributed; and hours of home production.

The greatest reliability of .996 was found in dollars contributed to education, such as PTA dues or alumni contributions. Dollars contributed to employment, such as union dues or professional contributions, correlated at .992.

Other significant correlations were in contact hours outside the community: hours spent at short courses or private colleges at .987; health services for which the client paid or his insurance covered at .974; and total hours in the recreation subsystem at .884. The fact that contact hours outside the community were infrequent as compared to inside may account for the difference in reliability correlation data. Perhaps outside contacts, because they are infrequent, stand prominently in the subjects' thinking and result in more accurate recall in the original instrument administration as well as the reliability administration.

There were no significant correlations in relation to contact hours inside the community or in home production. Contact hours within the community in obtaining goods and services and in home production can encompass great amounts of time, ranging into such figures as 2,300 to 3,500 hours. Hence, exact recall of specific numbers of hours covering a one-year period, from one administration to a second

administration of the instrument, may be improbable as was supported by the reliability correlation data.

With respect to validity of the instrument, it appears that since the items contained in the inventory are concrete and familiar, face validation can be accepted.

CHAPTER IV

FINDINGS AND CONCLUSIONS

In this chapter are discussed the findings relating
to the independent and dependent variables, the test of the
hypotheses, and the conclusions.

Family Variables

The independent family variables selected for this
study were family size, stage of family life cycle, social
position, family income, length of residence, and hours
spent in home production.

Family Size

In this study almost half the families (Table 2)
are one- and two-person families. Even though they are
so numerous, respondents from this group suggested that
they should not be included in the study, because they did
not use the community as much as families with children.
With the family mean at 3.08, it would appear that families
with children were most visible.

Stage of Family Life Cycle

The survey community appears to be a family-oriented
community. According to the sample, 80 per cent of the fam-
ilies now rear or did rear children; only 20 per cent are

childless families. About 46 per cent are now actively
concerned with childrearing from the infant to the oldest
child in the 14-20 age group. Twenty-three per cent have
launched their children (Table 3). In such a community
there would appear to be a central concern for family and
children to be reflected in their utilization of the com-
munity and in expressed needs for the community.

Table 2. Family size of survey sample (N=140).

No. in Family	Number	Per Cent	Cumulative Number	Cumulative Per Cent
1	32	22.9	32	22.8
2	33	23.6	65	46.4
3	19	13.6	84	60.0
4	25	17.9	109	77.8
5	14	10.0	123	87.8
6	13	9.2	136	97.1
7	3	2.1	139	99.2
8	1	.7	140	100.0

Mean	Standard Deviation
3.086	1.7608

Table 3. Family life cycle stage of survey sample (N=140).

Life Cycle Stage	Number of Families	Per Cent
Single	11	7.9
Childless		
Husband 18-25	6	4.3
Husband 26-30	4	2.9
Husband 31-37	0	0.0
Husband 38-46	1	.7
Husband 47-65	5	3.6
Widowed 66+	1	.7
Subtotal	17	12.2
Children		
All children less than 36 mos.	12	8.6
Oldest child 4-6	9	6.4
Oldest child 7-13	27	19.3
Oldest child 14-20	17	12.1
Oldest child over 20	10	7.1
Youngest child over 20	3	2.1
Subtotal	78	55.6
All children launched; not retired	11	7.9
Retired couple	6	4.3
Widowed	17	12.1
Subtotal	34	24.3
Total	140	100.0

Social Position

The distribution of individuals in social position is shown in Table 4. About 46 per cent are in the two lower categories compared with the 20 per cent in the two upper classifications. Since these differences in socio-economic class represent differences in life style as supported by the literature, it is evident there is diversity of perceptions among families about their function and relation to community resources.

Table 4. Social position of survey sample (N=140).

Social Position	Number	Per Cent	Cumulative Number	Cumulative Per Cent
High 1	3	2.1	3	2.1
2	17	12.1	20	14.2
3	42	30.0	62	44.2
4	46	32.9	108	77.1
Low 5	20	14.3	128	91.4
NA	12	8.6	140	100.0

Income

About 80 per cent of the families have a joint family income under $15,000 (Table 5). An impression the interviewer had was that the factory worker commuting to Flint and Lansing was likely to check the category of $10,000 to $14,999, while the man working in the local

factory was in the next lower category. In addition, 20 per cent have an income of $5,000 and less, an amount requiring careful husbanding under any circumstance, but especially as inflation affects many vital areas.

Table 5. Family income of survey sample (N=140).

Income	Number	Per Cent	Cumulative Number	Cumulative Per Cent
Less than $2,500	15	10.8	15	10.8
$2,500- $4,999	13	9.3	28	20.1
$5,000- $9,999	41	29.5	69	49.6
$10,000-$14,999	43	30.9	112	80.5
$15,000-$19,999	17	12.2	129	92.8
$20,000-$24,999	4	2.9	133	95.6
$25,000-$29,999	0	0.0	133	95.6
$30,000 and over	3	2.2	136	97.8
NA	3	2.2	139	100.0

The income distribution outlined above and used in the regression analysis is composed of income from employment and other sources. Thirty-four per cent of the sample had income from one of the sources listed in Table 6. Social security was checked by almost half of these individuals, with dividends and investments and pensions of more importance than rentals and other sources. The dividends,

which did not appear to make a great deal of difference for most people in their level of income, may stem from the opportunity for stock purchase plans at the automobile factories where many work.

Table 6. Source of individual income, besides employment, of survey sample (N=140).

Sources Other Income	Number	Per Cent
Social Security	45	26.2
Dividends	31	18.0
Investment	20	11.6
Pensions	20	11.6
Rental	12	7.0
Inheritance	8	4.7
Insurance	6	3.5
Loans	4	2.3
Other	26	15.1

As seen in Table 7, 45 per cent of the individuals receiving this type of income attained a new level of income. This additional source appeared to make the difference with 13 respondents between being self-sufficient and applying for welfare, since they checked the new income level of less than $2,500 a year. For most of the others it appeared to add to livability.

Table 7. Changes in total income level resulting from income besides employment (N=92).

Income Level	Number	Per Cent
No Change	51	55.0
Improved Income Level	41	45.0
Less than $2,500	13	31.7
$2,500- $4,999	10	24.5
$5,000- $9,999	3	7.3
$10,000-$14,999	2	4.9
$15,000-$19,999	3	7.3
$30,000 and over	1	2.4
NA	9	21.9

Length of Residence

This variable was constructed from two questions regarding length of residence. One referred to how long the family being interviewed had lived in the community, the other how long either of the spouses had lived there, including residence before marriage.

The length of stay of individuals and of families indicates there are many long-time residents in this community (Table 8).

Table 8. Length of residence by individual and family of the survey sample (N=140).

Residence in Years	Individual		Family	
	Number of Individuals	Per Cent	Number of Families	Per Cent
0- 1	0	0.0	11	7.9
1- 4	22	15.7	12	8.6
5- 9	48	34.3	12	8.6
10-24	33	23.6	29	20.7
25-39	17	12.1	39	27.9
40-64	18	12.9	30	21.4
65+	2	1.4	7	4.9
	Mean: 27.04 years		Mean: 16.1 years	

The mean of the individual and family length of residence became the score to be compared with the linkage variables (Table 9). The underlying rationale was that knowledge of the community may influence use of the community. And although the perceptions of individuals change as the child reaches adulthood, familiarity with the elements of the community known over a period of time surpasses that of a recent arrival. The mean length of residence for the composite score is 22.25 years as compared with 16.1 for families and 27.04 for individuals. This would appear to contribute to satisfaction with the community for long-time residents would not have had experience living in

other situations from which to make comparisons or sugges-
tions for change.

Table 9. Derived score for length of residence of families
in survey sample (N=140).

Residence in Years	Number of Families	Per Cent
0- 1	9	6.4
1- 4	14	10.0
5- 9	13	9.3
10-24	56	40.0
25-39	23	16.4
40-64	21	15.0
65+	4	2.9

Mean: 22.25 years

Nonrespondents

Analysis of family variables for nonrespondents
showed that they were similar to the respondents.

Relationships Among Five
Family Variables

In Table 10 are summarized the correlation coeffi-
cients among the family variables. Relationships among the
variables are in the expected direction with income posi-
tively related to social position at .42 and family size

at .41. The negative relationship among the length of residence and family size and income points to a probable element of conservatism in the community of long-time residents in the contracting stage of the family life cycle and with restricted incomes who may be resistant to changes in the community.

Table 10. Pearson correlation coefficients of family variables.

| Variables | Variables | | | | |
	Social Position	Family Size	Income	Life Cycle	Length of Residence
Family Size	.076	1.000			
Income	.415	.406	1.000		
Life Cycle	-.102	.295	.083	1.000	
Length of Residence	-.157	-.394	-.335	.140	1.000

Home Production

Another family variable pertinent to this study is home production. Calculated from the hours reported by the respondents, these scores report the relative time families spent in providing goods and services for themselves instead of purchasing them from the community; that is, home-centered rather than community-centered activity. As listed in Table 11, the most hours accounted for are in relation to the business subsystem, where families recorded

Table 11. Hours of home production during a year by families, adults and children weighted equally, classified by eight subsystems.

Subsystem	Hours			
	Mean	Minimum	Maximum	St. Dev.
Business Ex.: meal preparation, yard maintenance	881.9	17.0	3571.0	630.6
Culture Ex.: hobbies, TV, parties	858.5	0.0	3500.0	667.2
Recreation Ex.: swimming pool, vacation cottage	142.6	0.0	3000.0	374.0
Employment Ex.: office in home	88.7	0.0	1850.0	287.4
Health Ex.: home nursing, health drives	20.1	0.0	840.0	112.9
Education Ex.: correspondence course, preparation Scout meetings	11.4	0.0	1080.0	93.9
Religion Ex.: meetings in home	5.7	0.0	250.0	29.3
Civic Ex.: distributing petition in neigh- borhood	.1	0.0	5.5	.5
Total All Subsystems	2009.0	93.5	5192.5	1160.9

performing services or providing goods rather than purchasing them. The most usual substitution was preparing meals instead of purchasing them. Some also did laundry at home, others yard work, and house maintenance. In a few instances there were major projects, such as house remodeling.

In the culture subsystem, the activities did not appear to be family generated as in having parties, or hobbies, but in watching television. Although the latter is community based through programming and manufacture of the receiving equipment, this activity was included under home production because it may substitute for excursions into the community, a finding also noted by Anderson (1955).

A great deal of variance in the amount of home production is shown in Table 11. The subsystems were listed in descending order according to the mean family hours of use. It is interesting to note that the two leisure-oriented subsystems of culture and recreation accounted for more hours than the system maintenance activity implied under the business subsystem. The range of total hours between a mean of 93.5 and 5192.5 illustrates the diversity among families.

In Table 12, these home production activities by subsystem are related to family variables in a multiple regression analysis. Family size is significantly related to hours spent in home production when the hours of children 13 and under are weighted as equal with adults. According to

Table 12. Relationship among home production and other family variables (N=123).

Variable	F Ratios		Alpha Level	Probability Levels Step Wise Regression of Independent Variables				
	Multi-Variate	Uni-Variate		Family Size	Income	Social Position	Life Cycle	Resi-dence
HOME PRODUCTION:								
Adults only	1.4465		.0415	.1535	.1510	.2998	.0243	.6783
Business		2.1880	.0602					
Employment		.2506	.9388					
Recreation		1.0943	.3673					
Culture		1.5305	.1856					
Religion		3.0970	.0116					
Education		.6016	.6988					
Health		1.7514	.1284					
Civic		1.5216	.1884					
Adults with Children as one	2.1584		.0001*	.0003*	.1175	.0831	.0274	.3635
Business		3.0026	.0138					
Employment		.1778	.9705					
Recreation		1.8379	.1108					
Culture		6.2004	.0001*					
Religion		2.4567	.0373					
Education		1.5210	.1886					
Health		1.7977	.1186					
Civic		1.5991	.1658					
Adults with Children as one-half	1.6249		.0109	.0348	.1754	.1476	.0273	.6444
Business		1.1903	.3182					
Employment		.1814	.9692					
Recreation		1.5976	.1662					
Culture		2.7669	.0213					
Religion		2.4714	.0363					
Education		1.3585	.2451					
Health		1.7977	.1186					
Civic		1.5216	.1884					

*Significant.

the raw regression coefficients, this is primarily due to a negative correlation at -.35 with culture, supporting the impression of the interviewer that the older respondent without children spent many hours watching favorite programs on television. This may be expressed in the marginal significance of life style to home production at .03.

Linkage Variables

In the following sections are presented summaries of the contact hours in the community from which the standard scores were derived. The hours reported by families were not expected to account for the 5840 hours available to an individual in a year after allowing eight hours a day for rest and relaxation. However, in one case, a schedule was returned because the husband's report of contact hours indicated he could be getting only three to four hours sleep per day. This schedule was included, however, when the wife reported this was typical of his activity, since he operated a part-time business in addition to a ten-hour a day factory job.

Scope

Figure 1 presents the number of different subsystems entered by families regardless of the number of contact hours. This number ranges from three to nine, with the mean number of subsystems being seven. Families were assigned a standard score from one to ten based on their relative position in the number of subsystems entered.
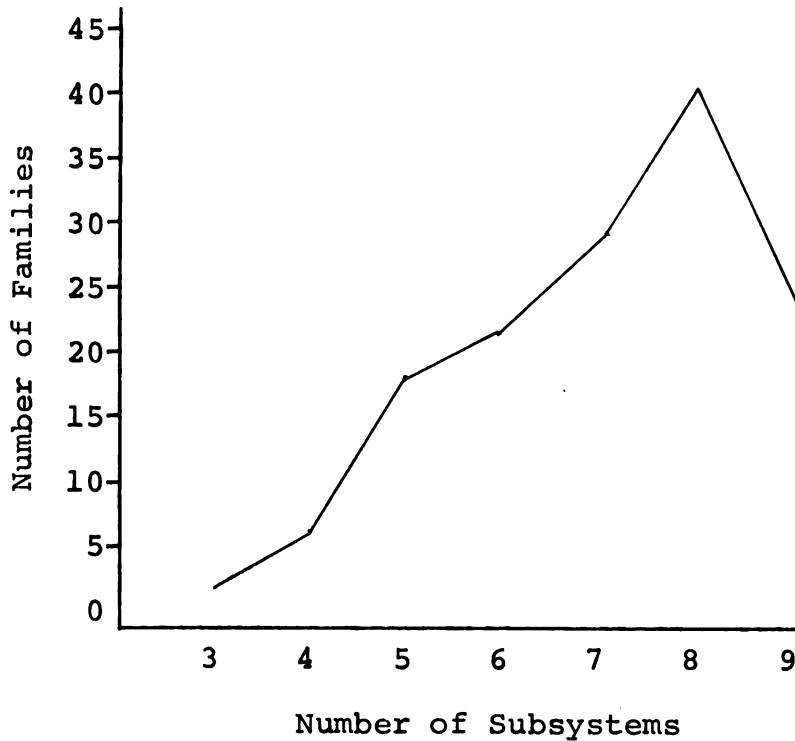
Mean: 7.036   Standard Deviation: 1.5050

Figure 1.   Number of community subsystems
            entered by families.

Of all the subsystems available for family use,
business, through which families secure food, clothing, taxi
service, and other goods and services, is used by 100 per
cent of the families. Figure 2 presents the descending
order of utilization of other subsystems.

Those who entered all nine subsystems needed to
include welfare. The majority of these families are those
who had received unemployment insurance, a few were on ADC
but only one respondent received full support through support
payments, use of public health facilities, and subsidized
housing.
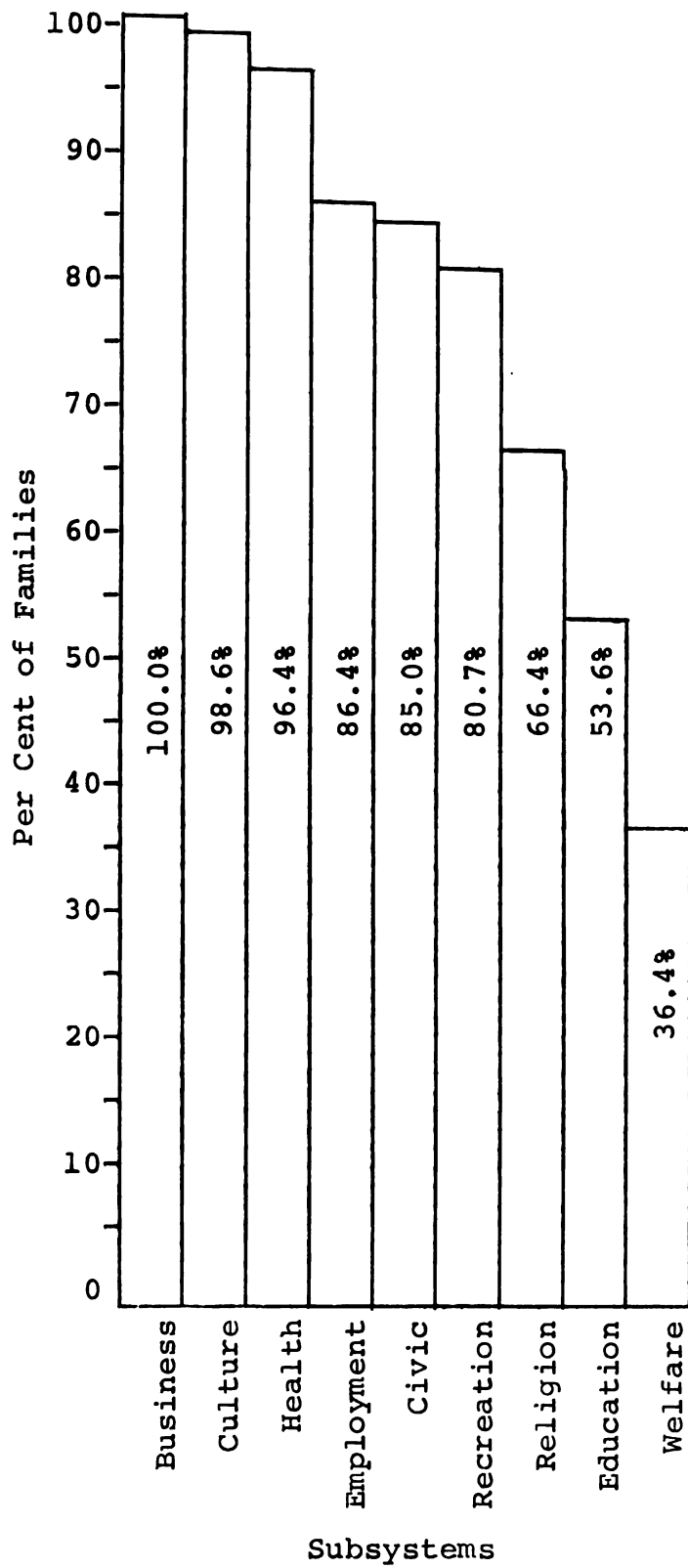
Figure 2. Participation by families in nine
community subsystems.

Penetration

The penetration scores represent contact hours of fam-
ilies utilizing resources in the community. As explained in
methodology, the standard scores are used in the statisti-
cal analysis. However, the number of contact hours des-
cribed below illustrates the diversity of time allocation
by families. Total hours for the total community are
included as well as total hours for the internal and exter-
nal communities for a better comparison with contact hours
in the subsystems. The mean of these hours is the basis
of comparison among families, expressed in standard scores
from one to ten.

Contact hours internal to the community.--Employment
accounts for the most contact hours within the community,
followed by business and health. The high maximum score
for health could be accounted for by a hospital stay of sev-
eral weeks by one of the respondents. The culture hours
represent using the library and joining with special inter-
est groups. These are much lower in the internal community
(Table 13) than home production hours in the culture cate-
gory (Table 11), which indicates a maximum of 3500 hours
and a mean of 858 hours.

When the hours spent in school by children 14 years
and over are averaged with the parents (Table 13), the max-
imum hours appear to be below the mandatory school hours

because the family includes adults. But when examining the use of the local school systems, either public or private, within the local community as reported by children 13 and under, the hours represent only the school-age population (Table 14).

Table 13. Mean family contact hours spent in eight internal community subsystems (N=140).

Subsystem	Hours			
	Mean	Minimum	Maximum	St. Dev.
Employment	664.0	0.0	3100.0	751.8
Business	267.8	4.0	2370.5	289.3
Health	132.7	0.0	2909.5	367.0
Education	75.5	0.0	793.3	167.9
Religion	65.9	0.0	600.0	117.9
Culture	60.1	0.0	500.0	81.3
Recreation	50.6	0.0	1300.5	134.6
Civic	22.0	0.0	404.0	53.0
Total Internal Subsystems	1338.7	6.0	4879.0	1005.1
Total Community	2185.2	67.0	6347.5	1205.9

Table 14. Contact hours of children 13 and under in public
and private schools within community (N=64).

School	Hours			
	Mean	Minimum	Maximum	St. Dev.
Public	765.9	0.0	3000.0	637.6
Private	68.8	0.0	1190.0	252.7

In the education community are included other organizations with primarily educational objectives as scouts and 4-H. It appears from the table above that public school children in this study enter into other educational activity more than those attending a private school since the mean hours of participation by public school respondents exceeds mandatory school hours of 1190.

Contact hours external to the community.--On the whole, family members spent fewer hours outside than inside the community locating resources. The ordering of the use of subsystems outside the community is somewhat different from the ordering of subsystems inside the community (Table 15).

The most utilized subsystem outside was that of employment which was likewise true within the community. The mean external hours were 499 as compared with internal, 664. The difference could be attributed to the fact more family members work inside the community than outside. That

is, if the husband were working in Flint or Lansing, his wife may not be working because of the higher wage scale for these workers. However, if working she would be likely to work within the city, contributing to the higher internal employment. In addition, if the husband worked internally, more members of the household might work to raise family income and consequently the mean of family hours in employment.

Table 15. Mean family contact hours in eight external community subsystems (N=140).

Subsystem	Hours				
	External Mean	Minimum	Maximum	St. Dev.	Internal Mean
Employment	499.5	0.0	2726.0	704.9	664.0
Business	123.0	0.0	679.3	136.3	267.8
Recreation	106.7	0.0	1215.0	223.6	50.6
Health	44.0	0.0	3000.0	271.6	132.7
Culture	33.0	0.0	432.0	63.4	60.1
Education	27.0	0.0	906.7	119.3	75.5
Religion	12.0	0.0	350.0	47.9	65.9
Civic	1.4	0.0	65.0	7.4	22.0
Total External	846.5	0.0	3991.0	839.0	1005.1
Total Community	2185.2	67.0	6347.5	1205.9	

The next important subsystem in terms of utilization is business although the mean hours were 123 for outside as compared to 267 inside the community. Since there is no attempt in this study to determine economic impact of these hours, it is not known what they represent in monetary terms. It could be that families use the local community for routine expenditures. If they buy large items externally, their hours would represent more dollars flowing outside the community. On the other hand, since the major grocery stores were outside the city limits families would have included shopping at the grocery store as hours outside.

The recreation subsystem ranks number three for external hours whereas it is ranked seventh for internal. This represents the time many families say they spent at national or state parks and in places distant from home for vacation trips. The other external hours are much lower than internal but again no estimate can be made of economic impact those hours may have.

Dollars.--This section on dollars represents contributions made with dollars instead of time to volunteer groups in the different subsystems. These data appear more irregular than the data on hours: the means are not consistently related to maximum values, reflecting great variations in size of contributions and number of contributors or the reporting of them.

For example, the mean dollar contribution in the religious subsystem was highest representing a high rate of contribution by relatively few families (Table 16).

Table 16. Dollar contribution by families to the community by subsystems (N=140).

Subsystem	Dollars			
	Mean	Minimum	Maximum	St. Dev.
Religion	$69.23	$0.00	$1,000.00	$160.52
Employment	22.26	0.00	155.00	32.87
Culture	4.37	0.00	97.00	11.92
Civic	3.91	0.00	92.00	13.04
Health	2.96	0.00	150.00	14.00
Education	2.48	0.00	125.00	12.26

The $155 maximum contribution with a mean of $22.26 in the employment subsystem represents for the most part union dues. On the other hand, the maximum value of $150 in health, representing contributions to the Red Cross and health drives, indicates a greater range in contributors since the mean is only $2.96. Civic includes dues for organizations as Kiwanis and Rotary, participated in by relatively few but whose single maximum contribution was about $90.

Flow

Resource flow, as explained in methodology, represents the relative use of or contribution to the community.

Table 17 refers to the flow in hours internally, while
Table 18 refers to the flow in hours externally.

Internal Hours

Table 17 represents the minimum, maximum, and the
mean hours for the selected components from the pertinent
subsystems under the major categories of positive, negative,
and neutral flow. Hours are reported in this table, whereas
in the next section of this chapter only the standard scores
will be used in the multiple regression analysis.

In the positive flow category the selected means
represent the hours families or individuals contribute to
the community. Employment is included because it contributes
to community well-being, even though compensation also
accrues to the individual. In addition employment is an
indicator of the ability to pay taxes, another positive
contribution.

In religion, civic, culture, health, and education
subsystems the hours represent time individuals have given,
without compensation, to the functioning of those subsys-
tems.

The negative flow category led by education represents
the use families have made of public facilities such as a
public-supported school system, library, parks, or health
clinic.

As would be expected in neutral flow, business hours
lead other subsystems in contact hours. The hours in health,

Table 17. Contact hours of families in selected sectors of internal community subsystems by positive, negative, and neutral flow (N=123).

| Flow | Hours | | | |
	Mean	Minimum	Maximum	St. Dev.
Positive				
Employment	664.0	0.0	3100.0	751.8
Religion	65.9	0.0	600.0	117.9
Civic	21.2	0.0	403.0	52.8
Culture	17.3	0.0	272.0	36.3
Health	11.9	0.0	400.0	46.6
Education	10.3	0.0	365.5	38.0
Negative				
Education	61.9	0.0	793.3	160.0
Health	35.7	0.0	2909.5	276.3
Recreation	16.2	0.0	480.0	55.5
Culture	8.6	0.0	120.5	17.5
Civic	.8	0.0	11.5	1.8
Neutral				
Business	267.8	4.0	2370.5	289.3
Health	85.2	0.0	1700.0	247.3
Recreation	34.3	0.0	1300.0	123.2
Culture	34.2	0.0	500.0	70.6
Education	3.4	0.0	235.3	23.9

Table 18. Contact hours of families in selected sectors of external community subsystems by positive, negative, and neutral flow (N=123).

Flow	Mean	Minimum	Maximum	St. Dev.
Positive				
Employment	499.5	0.0	2726.0	704.9
Religion	12.0	0.0	350.0	47.9
Culture	8.8	0.0	99.0	18.7
Civic	1.3	0.0	65.0	7.4
Health	1.0	0.0	54.0	6.4
Education	.5	0.0	32.5	3.2
Negative				
Recreation	84.7	0.0	1200.0	208.0
Education	23.3	0.0	906.7	119.2
Culture	6.0	0.0	105.0	15.5
Health	3.4	0.0	252.0	24.9
Civic	.1	0.0	4.0	.5
Neutral				
Business	123.0	0.0	679.3	136.3
Health	39.6	0.0	3000.0	270.8
Recreation	22.0	0.0	499.5	71.0
Culture	18.2	0.0	400.0	52.3
Education	3.3	0.0	75.0	12.7

recreation, culture, and education represent business operations in those subsystems. That is, in health the mean hours of 85 describe contact hours with a doctor for which individuals have compensated him either out-of-pocket or through an insurance program to which they have contributed. The 1,300 maximum hours in recreation may represent the utilization of a country club by one respondent.

External Hours

As a whole, the hours spent outside were fewer than inside as discussed under penetration. The most hours in positive flow were in employment with 499 mean hours. The volunteer time represented by the hours in the remaining external subsystems could be substitutions for local activity or extensions of local activity, as with regional meetings. Some respondents mentioned regional meetings in both the religious and health subsystems.

Using the state parks on vacation trips some distance from the city contributed to negative flow of 34.7 mean hours. The hours in the education subsystem were at state universities some distance from the city. Using special health facilities in Grand Rapids for a child on welfare also accounted for some negative hours.

Higher mean hours for health under neutral represents use of these services with payment by the individuals. Two contrasting examples of use of these services are: a woman

with Parkinson's disease went to University Hospital at Ann
Arbor only after an extended stay in the local hospital;
another preferred the health facilities in Flint for the
delivery of her child although that service could easily
have been rendered locally. In the first example, the
external facility was utilized only after an extended stay
in the internal community; in the second, local facilities
were bypassed.

In recreation and culture subsystems, individuals
and families are using special facilities not available
locally: namely, rental campgrounds and a sophisticated
cocktail lounge.

Another component of flow is assessed housing val-
uations. Secured through the city assessor's office, they
are included to represent contributions to municipal expen-
ditures through real estate taxes (Table 19). The minimum
assessed valuation was $339; the maximum, $15,000. These
figures are doubled to represent market value. The sample
mean was $4,338.76.

In selecting the sample, assessed housing valuation
was employed as an indirect measure of access to resources.
The higher value residential area was believed to be north
of Main Street, the lower value south of Main Street.
This was supported at the .0001 level of significance.

Table 19. Assessed valuation of residences of all respondents compared with stratified sample of the survey community.

Valuation	All Respondents (N=120)	North (N=60)	South (N=60)
Minimum	$ 339.00		
Maximum	$15,000.00		
Mean	$ 4,338.76	$5,107.20*	$3,335.25*
St. Dev.	$ 2,262.12		

*Significant at p < .0001.

Suggestions for Community Development

Sixty-two per cent of the respondents made from one to eight comments about resource development in the community (Figure 3). The other 38 per cent seem to have implied satisfaction with present community resources, for they made no suggestions.

Although the respondents were asked to rank order their suggestions from one to three, many preferred to list their suggestions without ranking. Consequently, two tables concern the content of their suggestions, one giving rank order, the other combining ranked and unranked by category.

Table 20 lists the suggestions made in ranking one, two, and three. Of the ten resources mentioned, activities or facilities associated with the use of leisure time account for four. The form most mentioned was facilities, as parks, roller skating rinks, whether ranked one, two, or three.
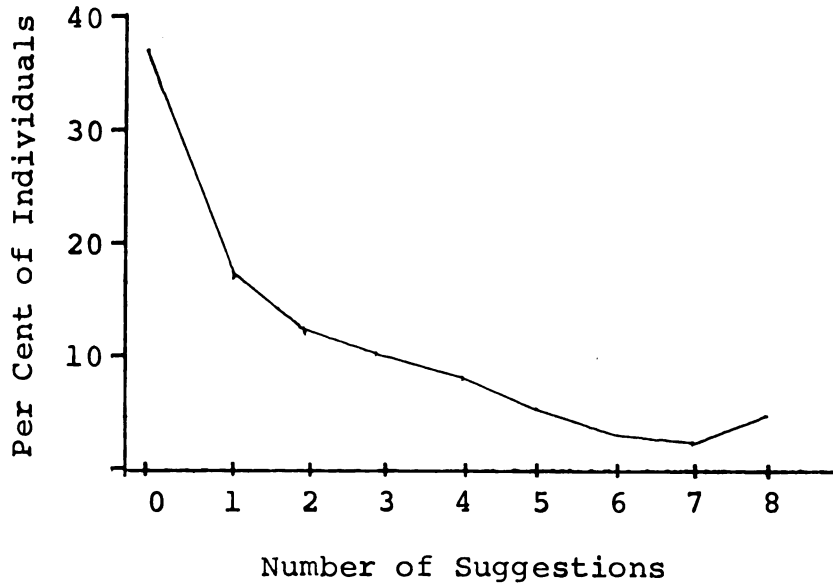
Figure 3. Number of suggestions for community
development by per cent of individ-
uals (N=277).

Improving streets and roads, whether through better main-

tenance, parking, or layout, also assumes importance to the

respondents. Increasing diversity of goods and services

is mentioned in different forms: addition of shopping

centers, specialty stores, restaurants.

The summary of the unranked suggestions in Table 21

differs in detail, but emphasizes the same resource areas:

recreation, business, and municipal services.

Recreation appears as most pressing in terms of

community needs. Inasmuch as many of the recommendations

for recreation relate to the teenager, there seems to be a

recognition that a developmental need of the young person

is to sample many different events and behaviors in prepara-

tion for making a commitment to the adult role. Recreation

Table 20. Suggestions for community resource development by rank (N=172).

Suggestions	RANK I		RANK II		RANK III	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Facilities: Parks, Roller Skating, etc.	20	13.605	13	14.444	11	16.418
Streets, Roads: Maintenance, One-Way Streets, Snow Removal, Parking, RR Track	16	10.884	5	5.556	6	8.955
Recreation: for Teens	16	10.884	4	4.444	4	5.970
Shopping Centers: Quantity, Quality, Location	8	5.442	5	5.556	5	7.463
Restaurants	8	5.442	6	6.667	5	7.463
Specialty Stores: Diversity, Location	6	4.082	7	7.778	2	2.985
Recreation: for Young Children	5	3.401	6	6.667	2	2.985
Law Enforcement	4	2.721	5	5.556	3	4.478
Cultural Entertainment	2	1.361	4	4.444	5	7.463
Like Community As It Is	13	8.844				

Table 21. Total suggestions for community resource develop-
ment by category.

Category	Number		
	Ranked	Unranked	Total
<u>Leisure</u>	92	71	163
Facilities: Parks, Roller Skating	44	31	75
For Teens	24	4	28
For Young Children	13	4	17
Cultural Entertainment	11	5	16
Improve Movies: Quality, Quantity	0	7	7
For Adults	0	6	6
Museum	0	6	6
Recreation	0	5	5
Night Spots	0	3	3
<u>Business</u>	52	45	97
Restaurants	19	14	33
Specialty Stores: Diversity, Location	15	13	28
Shopping Centers: Quantity, Quality, Location	18	5	23
Services, Hours, Prices	0	5	5
Communication: Additional Outlets, Improvement	0	4	4
Personnel: Attitude, Practices	0	3	3
Business, general	0	1	1
<u>Municipal</u>	39	52	91
Streets, Roads: Maintenance, One-Way Streets, Snow Removal, Parking	27	20	47
Law Enforcement: Police-Citizen Relations	12	2	14
Sanitation and Aesthetics: Public Garbage Pick-up, Empty Lots, Store Fronts, Sewage Disposal	0	11	11
Transportation Service	0	8	8
Civic Center	0	6	6
Tax Structure	0	2	2
Airport	0	2	2
Housing	0	1	1

Table 21. Continued.

Category	Number		
	Ranked	Unranked	Total
Education	0	28	28
Adult	0	6	6
Higher Education	0	6	6
Auxiliary Services: School Lunch, Cross-walks	0	4	4
Pre-school, Day Care	0	3	3
Education, General	0	2	2
Vocational	0	2	2
Tax Structure	0	2	2
Special Education	0	1	1
Teachers	0	1	1
Music in Schools	0	1	1
Health	0	22	22
Doctors: Specialists, Family, House Calls	0	7	7
Drug Education	0	5	5
Nursing Home	0	3	3
Equipment for Sick at Home, Reduced Ambulance Rates	0	2	2
Health Spa	0	1	1
Free Medical Clinics	0	1	1
Health Costs	0	1	1
Social Workers	0	1	1
Services, Social Problems	0	1	1
Jobs	0	20	20
Better Jobs	0	8	8
Jobs for Teens	0	4	4
More Factories	0	2	2
Higher Wages	0	2	2
Jobs for Women	0	1	1
Jobs for Adults	0	1	1
Job Counseling	0	1	1
Stronger Unions	0	1	1
Social, Political	0	18	18
Greater Participation: Involvement of More People, Less Conservative People, Less Discrimination	0	10	10
City Manager Structure Political Activity	0	7	7
Specialized Groups, Women's Lib	0	1	1

is one area where transition from the family to the larger system can take place. Community-centered rather than home-centered facilities foster these explorations. However, in this survey community, there are relatively few alternatives for such community interaction. The young people reacted to the problem by driving around the block of the shopping area on Friday nights in such numbers that customers could not use the parking lots. The city's response was to pass an Aimless Driving Ordinance.

Most responses about business imply a limited selection of resources in the survey community. They suggest a need for greater diversity with more restaurants, specialty stores, and shopping centers. At the present time, individuals speak about going to comparable establishments out of town. In suggesting such additions for the local community, they may be attempting to reduce the friction of space. In addition, a few respondents may feel that more competition would improve the service the stores give, and the attitudes of the personnel.

Another area receiving much attention is that of municipal services. Some of these suggestions may have been associated with the fact that the survey was conducted during winter and early spring. A snowfall had clogged the streets, and spring thaws contributed to roller-coaster conditions at some street corners where the surface material was disintegrating. During the survey there was some publicity about a new street layout in the central city,

creating some one-way streets. The respondents for the most part feel this is unnecessary.

Each of the three categories of education, health, and jobs received a similar number of suggestions. These may in fact reflect more individual family concerns, because there had not been local community discussion of these to the extent of events related to recreation and municipal improvements. Within some of the categories there appear to be contradictions. For instance, some feel that the schools should supply more services, and yet the taxes are too high; there are not enough family doctors, yet more specialists are desired; improve the functional and aesthetic aspects of the community, but do not increase taxes.

Despite the contradictions, such a listing is useful because it brings in perspective at the decision-making level the need for more resources or better communication about the ones already available.

Test of the Hypotheses

This section presents the results of the relation of selected family variables to the three dimensions of linkage and the number of suggestions for additional community resources. Two statistical tests of relationship were employed: the Pearson correlation coefficient and multiple regression analysis.

The product-moment correlation matrix charts the one-to-one relationship between continuous variables. The

portion relating family variables to linkage variables is
included as Table 22. Direction of relationship is indi-
cated by the minus sign (-) for negative, while the remain-
ing ones are positive.

The multiple regression analysis (Table 23) presents
two forms of relationships between independent and dependent
variables: the multivariate and the univariate. The uni-
variate is used when the singular dependent variable, such
as scope or flow, is related to the whole of the family
variables. Also, the contributions of individual subsystems
to the multivariate analysis of the penetration dimension
are treated individually in relation to the whole of the
family variables.

The multivariate analysis of a particular relation-
ship computes the effect of all the family variables (inde-
pendent variables) on the components of the penetration
dimension (dependent variable). This is found in Table 23
by locating the figure for multivariate F ratio. To the
right of the F ratio on this line is located the alpha level
of the result of the multivariate computation. To the
right of this numeral are the resulting probability levels
of the effect of each of the family variables on this rela-
tionship. Significance is noted by an asterisk (*).

Subsumed under the multivariate analysis are uni-
variate F ratios and alpha levels for the contribution of
individual subsystems to the penetration scores related to

Table 22. Matrix of Pearson correlation coefficients relating family variables to linkage variables.

Var. No.	Link. Var.	Social Posit.	Family Size	Income	Stage of Life Cycle	Length of Residence
6	SUBSYS	+.280161	.620998	.437964	.174511	-.234779
7	H1BUS	-.111178	.220513	-.056815	.078425	.017922
8	H1EMP	+.016504	.061094	.022358	.088339	.020713
9	H1REC	-.030071	-.000179	.121134	.133248	.010583
10	H1CUL	-.147455	-.073106	-.140442	.159432	.131010
11	H1REL	+.229081	-.011241	.151657	-.246108	-.032499
12	H1EDU	+.058438	.136308	.048430	-.019106	-.877956
13	H1HEA	-.075351	-.125201	-.102078	.130489	-.016887
14	H1CIV	+.058787	.167439	-.031037	.072264	.043699
15	H2BUS	-.203480	-.176343	-.251737	.050240	.264056
16	H2EMP	+.001096	.008136	.000585	.084068	.022194
17	H2REC	-.043860	.089699	.198387	.148599	-.034203
18	H2CUL	-.166869	-.399863	-.257137	.026555	.302988
19	H2REL	+.206703	.054915	.107578	-.210882	-.041174
20	H2EDU	+.070319	.202396	.071449	-.046194	-.166711
21	H2HEA	-.075351	-.125201	-.102078	.130489	-.021952
22	H2CIV	+.042308	.161236	-.049795	.075721	.060590
23	H3BUS	-.152523	.009148	-.163553	.038950	.114527
24	H3EMP	+.010454	.029186	.001005	.083626	.011711
25	H3REC	-.038664	.072155	.180439	.147567	-.026323
26	H3CUL	-.138601	-.234143	-.217062	.091883	.214454
27	H3REL	+.202008	.068128	.109693	-.207993	-.043423
28	H3EDU	+.067165	.204335	.067645	-.018728	-.146026
29	H3HEA	-.075351	-.125201	-.102078	.130489	-.021952
30	H3CIV	+.058787	.167439	-.031037	.072264	.043699
31	I1BUS	+.242197	.009985	.235794	-.000007	-.065623
32	I1EMP	+.107450	-.125531	.097884	-.000724	.004372
33	I1REC	+.195138	.221508	.238431	.083741	-.046467
34	I1CUL	+.090647	.063631	.158960	-.001900	-.060622
35	I1REL	+.161234	-.068370	.025194	.050782	.097073
36	I1EDU	-.084841	.412345	.034659	.170863	-.027097
37	I1HEA	-.145059	.020312	-.074401	.104797	.037643
38	I1CIV	+.077461	-.148953	.007382	-.013409	.065040
39	I2BUS	+.110121	-.323696	-.011795	-.083079	.139212
40	I2EMP	+.035548	-.328447	-.005769	-.019864	.127672
41	I2REC	+.173300	.271676	.236546	.078328	-.083238
42	I2CUL	+.065550	.086870	.129354	-.004929	-.086975
43	I2REL	+.109277	-.153392	-.024858	.028643	.111745
44	I2EDU	+.077599	.735530	.305843	.256156	-.213901
45	I2HEA	-.155906	-.038975	-.076386	.105779	.100955
46	I2CIV	+.043993	-.207076	-.014650	-.011368	.091341
47	I3BUS	+.215023	-.180321	.121825	-.053586	.060352
48	I3EMP	+.077755	-.242058	.052077	-.026595	.042915
49	I3REC	+.187762	.277912	.248389	.094747	-.115167
50	I3CUL	+.074219	.075081	.116233	-.002804	-.086871

Table 22. <u>Continued.</u>

Var. No.	Link. Var.	Social Posit.	Family Size	Income	Stage of Life Cycle	Length of Residence
51	I3REL	+.138742	-.126157	-.001852	.030452	.104769
52	I3EDU	+.049338	.729326	.235218	.261041	-.199607
53	I3HEA	-.112473	.013272	-.065341	.106111	.055544
54	I3CIV	+.067611	-.171524	-.004555	-.035712	.062094
55	O1BUS	+.215609	.036140	.274701	.062107	-.160771
56	O1EMP	+.082710	.225262	.268764	.007631	-.123473
57	O1REC	+.116209	.103888	.209307	.087114	-.082817
58	O1CUL	+.120306	-.074462	.194784	-.066443	-.115531
59	O1REL	+.252568	.023732	.242481	-.023954	-.073856
60	O1EDU	+.237282	.006152	.075592	-.027410	-.077267
61	O1HEA	-.037057	.120790	-.038372	.024830	-.125725
62	O1CIV	+.224459	.053281	.165854	.090196	-.099816
63	O2BUS	+.072426	.176768	.261786	.134775	-.195612
64	O2EMP	+.051530	.155234	.259605	-.023930	-.097960
65	O2REC	+.133412	-.007226	.191234	.059387	-.090484
66	O2CUL	+.048729	-.143506	.107945	-.102021	-.077170
67	O2REL	+.213451	-.005045	.208768	-.059728	-.075808
68	O2EDU	+.198272	-.035899	.067803	-.042409	-.042181
69	O2HEA	+.003211	.059244	-.048263	-.006506	-.069181
70	O2CIV	+.201478	.040800	.149968	.086250	-.086938
71	O3BUS	+.127980	.226096	.285794	.139507	-.235853
72	O3EMP	+.083437	.206576	.266570	-.010559	-.128772
73	O3REC	+.116555	.037283	.178622	.075011	-.095759
74	O3CUL	+.082951	-.109868	.139600	-.085862	-.095869
75	O3REL	+.245856	.010682	.227016	-.048240	-.076091
76	O3EDU	+.202682	-.017635	.051070	-.035617	-.046082
77	O3HEA	+.010568	.113418	-.040623	-.013458	-.091046
78	O3CIV	+.228848	.051643	.160755	.088960	-.099994
79	ASSVAL	+.257705	.366863	.364811	.226357	.018513
80	D-EMP	-.127794	.225231	.260043	-.011007	-.094227
81	D-CUL	+.064240	-.168583	.076062	-.163386	-.043276
82	D-REL	+.159005	-.091397	.121740	.012238	.202880
83	D-EDU	+.247829	.114532	.297496	-.063707	-.099027
84	D-HEA	-.000431	-.074501	.148840	.170162	.124940
85	D-CIV	+.268352	.124070	.368463	.036582	-.018355
86	IPOSIT	+.200776	-.119570	.071703	.109551	.117859
87	INEGAT	+.038604	.405100	.200046	.111727	-.181754
88	INEUTR	+.149415	.457662	.324838	.119786	-.182547
89	FLOW1	+.142565	-.350283	-.070611	.040645	.223638
90	OPOSIT	+.164306	.055055	.312219	-.155765	-.166186
91	ONEGAT	+.252533	.127863	.279672	-.013077	-.228303
92	ONEUTR	+.136057	-.208262	.192667	-.087210	-.072780
93	FLOWOT	-.073112	-.050068	.036220	-.112536	.032230
94	FLOWIN	+.199257	-.227239	.033614	.097450	.218843

Key to Linkage Variables:

H = Home Production	2 = Adults and children weighted equally
I = Internal Subsystem	3 = Adults and children weighted one-half
O = External Subsystem	Posit = Positive Flow
D = Dollars	Negat = Negative Flow
1 = Adults Only	Neut = Neutral Flow

Table 23. Summary of multiple regression analysis of independent variables of family size, income, social position, life cycle, and residence with dependent linkage variables of scope, penetration, flow, and number of suggestions.

Variable	F Ratio		Alpha Level	Probability Levels Step Wise Regression of Independent Variables				
	Multi-Variate	Uni-Variate		Family Size	Income	Social Position	Life Cycle	Resi-dence
SCOPE PENETRATION: Internal Subsystems		19.75	.0001*	.0001*	.0039*	.0176	.3703	.3754
Adults Only	1.6294		.0105	.0001*	.0573	.3675	.9163	.9096
Business		2.2437	.0545					
Employment		1.1960	.3155					
Recreation		2.5477	.0316					
Culture		.6289	.6781					
Religion		1.1735	.3264					
Education		6.1579	.0001*					
Health		.7316	.6012					
Civic		.8194	.5383					
Adults with Children as one	3.3351		.0001*	.0001*	.6775	.7172	.6943	.8800
Business		3.5597	.0050					
Employment		3.6508	.0042					
Recreation		2.8246	.0192					
Culture		.4775	.7925					
Religion		1.2180	.3051					
Education		28.5469	.0001*					
Health		.9215	.4697					
Civic		1.3166	.2618					
Adults with children as one-half	3.3915		.0001*	.0001*	.2580	.5434	.8076	.9182
Business		2.7074	.0237					
Employment		2.3548	.0447					
Recreation		3.0192	.0134					
Culture		.4116	.8400					
Religion		1.2239	.3023					
Education		28.0040	.0001*					
Health		.5587	.7315					
Civic		.9321	.4630					

Table 23. Continued.

Variable	F Ratio		Alpha Level	Probability Levels Step Wise Regression of Independent Variables				
	Multi-Variate	Uni-Variate		Family Size	Income	Social Position	Life Cycle	Resi-dence
PENETRATION: External Subsystems								
Adults Only	1.3775		.0664	.1500	.0063	.1123	.8556	.8493
Business		3.0285	.0132					
Employment		2.3768	.0430					
Recreation		1.2659	.2834					
Culture		1.9882	.0854					
Religion		2.3360	.0463					
Education		1.4951	.1967					
Health		.8644	.5074					
Civic		1.8753	.1037					
Adults with Children as one	1.3511		.0789	.0454	.0195	.1808	.7829	.9097
Business		2.6204	.0277					
Employment		2.0118	.0820					
Recreation		1.5132	.1910					
Culture		1.6834	.1440					
Religion		1.8051	.1172					
Education		1.0527	.3904					
Health		.3658	.8711					
Civic		1.5396	.1829					
Adults with Children as one-half	1.5030		.0276	.0184	.0136	.1215	.7700	.8620
Business		3.3938	.0068					
Employment		2.2541	.0535					
Recreation		1.1644	.3309					
Culture		1.6386	.1552					
Religion		2.1762	.0614					
Education		1.0767	.3770					
Health		.7145	.6138					
Civic		1.9046	.0788					
FLOW:								
Inside		4.4310	.0010*	.1180	.3811	.1294	.0368	.1224
Outside		.8112	.5440	.3868	.9107	.5503	.2832	.6696
NUMBER OF SUGGESTIONS		1.3927	.1744	.0080	.5252	.3039	.6951	.6817

the whole of the family variables. In determining which sub-
system may have affected the total relationship, some alpha
levels below the level of significance of .01 will be dis-
cussed. Home production is related to linkage variables
through a multiple regression analysis in Table 24.

Direction and level of contribution to significant
relationships of the multiple regression analysis is noted
through the use of raw regression coefficients. Pertinent
coefficients and their standard error are presented in
Table 25 and refer for the most part to the results of pene-
tration in which adults and children are weighted equally.

The results of these analyses are discussed in
relation to each hypothesis.

Hypothesis 1: Scope and
Family Variables

H_o: There is no relationship between scope and social
position, family size, income, stage of family
life cycle, length of residence, and home pro-
duction.

According to the correlation coefficients (Table 22),
the only relationship in this hypothesis that could be rejected
was that of family size. This correlation was .62, well above
the .48 significance at .01 alpha level.

However, additional information was derived from
the multivariate analysis on which basis the null hypothesis
is rejected at .0001 (Table 23).

H_A: Scope is positively related to social position,
family size, income, stage of family life cycle,
length of residence, and home production.

Table 24. Summary of multiple regression analysis of independent variables of home production with linkage variables (N=123).

Variable	F Ratios Multi-Variate	Uni-Variate	Alpha Level	Probability Levels Step Wise Regression of Independent Variables — Home Production by Subsystems — Busi-ness	Employ-ment	Recre-ation	Cul-ture	Reli-gion	Educa-tion	Health	Civic
SCOPE											
Adults only		1.6355	.1224	.0119	.9043	.1414	.4190	.3754	.2743	.8950	.1941
Adults with Children as one		2.5145	.0149	.4945	.9134	.0447	.0170	.0743	.1456	.5768	.0766
Adults with Children as one-half		1.8105	.0821	.4852	.9066	.0721	.1909	.1075	.0912	.8180	.0848
PENETRATION Internal Subsystems											
Adults only	1.0880		.3053	.1810	.0702	.9541	.1498	.5582	.8311	.2071	.5458
Business		2.5943	.0122								
Employment		1.1224	.3536								
Recreation		2.3413	.0229								
Culture		.9823	.4536								
Religion		.6518	.7327								
Education		.3377	.9497								
Health		.9537	.4759								
Civic		.5853	.7883								
Adults with Children as one	1.5331		.0065	.0486	.0333	.6224	.0837	.4497	.1421	.0661	.3761
Business		4.1871	.0003								
Employment		1.5363	.1524								
Recreation		1.2132	.2976								
Culture		1.8262	.0792								
Religion		.7955	.6077								
Education		3.5299	.0012								
Health		1.0972	.3705								
Civic		.7684	.6313								
Adults with Children as one-half	1.1766		.1724	.3477	.1675	.9095	.0769	.5429	.4346	.0817	.4894
Business		2.7540	.0082								
Employment		.8464	.5640								
Recreation		1.4050	.2019								
Culture		1.3717	.2164								
Religion		.6241	.7562								
Education		2.0081	.0516								
Health		.8527	.5587								
Civic		.7899	.6126								

Table 24. Continued.

Variable	F Ratio		Alpha Level	Probability Levels Step Wise Regression of Independent Variables							
	Multi-Variate	Uni-Variate		Hours Production by Subsystems							
				Busi-ness	Employ-ment	Recre-ation	Cul-ture	Reli-gion	Educa-tion	Health	Civic
PENETRATION External Subsystems											
Adults only	.9491		.5905	.6290	.7940	.3875	.8679	.0046	.9980	.0996	.9985
Business		1.5612	.1443								
Employment		.3212	.9566								
Recreation		.7850	.6169								
Culture		1.8648	.0724								
Religion		1.7193	.1013								
Education		.5731	.7981								
Health		.9134	.5082								
Civic		.3443	.9467								
Adults with Children as one	1.3579		.0387	.4789	.7464	.7781	.6452	.0001	.3925	.1215	.9482
Business		1.6744	.1121								
Employment		.7239	.6702								
Recreation		.4547	.8853								
Culture		1.1717	.3223								
Religion		2.7958	.0073								
Education		.7292	.6655								
Health		.2537	.9790								
Civic		1.9374	.0610								
Adults with Children as one-half	1.3491		.0420	.4532	.8123	.4989	.8162	.0001	.3965	.0525	.9801
Business		1.8845	.0691								
Employment		.5855	.7882								
Recreation		.5299	.8320								
Culture		1.1213	.3544								
Religion		2.2626	.0278								
Education		.5336	.8292								
Health		.4480	.8897								
Civic		1.9016	.0664								

Table 24. Continued.

Variable	F Ratios		Alpha Level	Probability Levels Step Wise Regression of Independent Variables							
				Home Production by Subsystems							
	Multi-variate	Uni-variate		Busi-ness	Employ-ment	Recre-ation	Cul-ture	Reli-gion	Educa-tion	Health	Civic
FLOW											
Adults only	.7208		.7716	.8384	.8480	.0255	.9314	.9245	.7924	.9574	.2544
Inside		.2958	.9661								
Outside		1.1395	.3425								
Adults with Children as one	.6721		.8200	.7957	.8596	.0536	.6671	.7213	.6729	.8613	.4297
Inside		.1970	.9908								
Outside		1.1546	.3330								
Adults with Children as one-half	.6304		.8576	.8468	.7839	.0521	.9844	.6418	.7648	.9148	.3999
Inside		.2163	.9875								
Outside		1.0533	.4010								

Table 25. Selected raw regression coefficients with
corresponding standard error.[a]

Variables	Raw Regression Coefficients	Standard Error
Scope		
Family Size	.45	.07
Social Position	.26	.11
Home Production		
Civic	.28	.15
Religion	.23	.13
Culture	-.17	.08
Recreation	.14	.09
Internal Penetration		
Education Subsystem		
Family Size	.88	.09
Employment Subsystem		
Family Size	-.44	.11
Home Production		
Employment	.28	.13
Health	.38	.26
Income[b]	.21	.15
Business Subsystem		
Family Size	-.24	.07
Home Production		
Employment	.25	.08
Income[b]	.20	.11
Recreation Subsystem		
Home Production		
Health	.47	.19
Civic Subsystem		
Family Size	-.20	.09
Home Production		
Health	.33	.20
External Penetration		
Business Subsystem		
Income	.26	.13
Employment Subsystem		
Income	.25	.10
Culture Subsystem		
Income[b]	.21	.10

[a]Correlations for adults and children weighted
equally, except for noted cases.
[b]Adults only.

As discussed above, the correlation coefficient indicated the relationship between scope and family size to be positive and significant at .62 (Table 22). The multivariate regression (Table 23) shows this same variable to be significant at .0001. Income is also significant at .0039. The correlation coefficient supports this positive relationship between income and scope with a correlation of .44. The correlation coefficient gives some strength to social position at .28 which is supported by the raw regression coefficient of .26 (Table 25). Home production is almost significantly related to scope when children 13 and under are weighted equally with adults (Table 24) according to the multivariate analysis at .015. The greatest support comes from the culture subsystem at .017, followed by recreation at .045. According to the raw regression coefficients, the relationship with culture is a negative one, -.17, and with recreation a positive one at .14. The eschewing of the sedentary for the active as it relates to home production may be an indication of the energy level of those families emphasizing home production. Of marginal significance are the subsystems of religion and civic as related to home production and scope at .07 and .08 (Table 24). These are in the positive direction according to the raw regression coefficients of .23 and .28 (Table 25). Home production then appears somewhat related to the number of different subsystems families enter, with recreation at home making the greatest contribution followed by religious

activity and political activity. Inasmuch as the significant contribution of culture to home production is in a negative direction, the strong orientation to sedentary leisure in the home may be associated with narrow contact with the community.

In summary, of the family variables related positively to utilizing different subsystems, family size is most significant, followed by income. Home production and social position are closely related.

In addition, the correlation matrix points to a negative relationship between residence and scope of -.23. That is, the longer the length of residence, the fewer subsystems entered. This is substantiated by the fact that the education subsystem correlates at .58 with the number of subsystems entered when the children's contact hours are weighted equally with adults. Those with the longest length of residence are past the child-rearing stage and would not be entering the education subsystem except for job training, which they did not indicate they were doing.

Scope refers to the number of different subsystems families enter. Although 100 per cent of families use the business subsystem, it would be useful in relation to understanding resource needs to determine which subsystems contribute to the diversity of subsystems available in the community. According to the correlation matrix, education is significantly related to the number of subsystems entered at .57. Internal recreation is correlated at .37

when children are weighted equally with adults. This is
followed by external employment for adults only at .24.
In addition, the raw regression coefficients (Table 25)
link two more subsystems with home production: civic at .27
and religion at .23.

These data seem to describe the family entering the
most subsystems as the larger family, relatively new to the
community compared with the average length of residence of
22 years, with children 14 and over entering the educational
and recreational subsystems. It is probable that these
families also engage in religious activity in the home as
well as making some use of the civic subsystem. Because of
the variety of components of this latter subsystem, further
analysis would be necessary to determine exact activity. It
is likely that families with high scope scores do not spend
time watching television, an activity that accounted for
many hours of culture at home.

Hypothesis 2: Penetration
and Family Variables

H_o: There is no relationship between penetration within
the community and social position, family size,
income, stage of family life cycle, length of resi-
dence, and home production.

This hypothesis was rejected for family size based
on the correlation matrix for the educational subsystem at
.73, when children were weighted equally with adults. The
multiple regression supported this conclusion for all family
variables at .0001 in relation to penetration in the internal

community. This hypothesis was also rejected when children's hours were weighted as one-half at the .0001 level of significance in the multiple regression analysis. However, more significance for component subsystems was noted when children were weighted equally with adults, so discussion will be based on those figures, except for the marginal significance of income to two subsystems based on adults only.

H_A: Penetration within the community is positively related to social position, family size, income, stage of family life cycle, length of residence, and home production.

Family size is again the dominant family variable at a significance of .0001 (Table 23). Contributions come from three subsystems: education at .0001, employment at .0042, and business at .005. However, the correlation with the education subsystem is the only one of these in which a positive relationship was noted in the raw regression coefficients (Table 25). This was positively related at .88 reflecting the contact hours of children 13 and under as well as those 14 and over with the education subsystem.

The significant relationship of family size with the employment subsystem is a negative one at -.44 (Table 25), suggesting that wage earners with larger families tend to travel to distant locations for employment probably influenced by the higher earnings associated with external factory employment, as one alternative.

The larger family size implies the presence of children and it would appear that working outside the community, involving as it does commuting time of at least two hours a day, would detract from available hours for the wage earner's participation in family activities. For some factory workers this is evident as these fathers work the night shift, leaving their homes about 4 o'clock in the afternoon. For others on a day shift, the father leaves about 4 o'clock in the morning and is at home by the time children are out of school in the afternoon.

Family size is also negatively related in a marginal degree to use of the local business within the city limits at -.24 (Table 25). Although some of this could represent travel to the shopping malls outside the county, it could also refer to the major grocery stores and the local shopping plaza located just outside the city limits. This is indicative of the volume of business the central shopping area is losing to other centers.

Family size was also negatively related, -.20, to penetration of the civic subsystem. This may refer to participation in civic organizations, including fraternal organizations, that appeared to offer fellowship to older couples and individuals. Counting these hours in the civic subsystem runs counter to the purpose of this classification, which referred to community-oriented activity.

The family variable of home production is positively related to use of the internal community at a significance

of .0065, particularly the business community at .0003, followed by education at .0012 (Table 24). Since home production is significantly related to family size, .0003 (Table 12), it follows that the larger family would have need for a greater quantity of resources and would tend to produce goods and services more economically at home, but also have need for supplies from the community. Use of the educational subsystem reflects the presence of children associated with family size. The home production subsystem contributing most to the relationship of home production to penetration is that of employment at .0333. That is, those families where a wage earner works within the home use the internal community subsystems to a greater degree. The subsystems they appear to use most in the community are business at .25 and employment at .28 correlation according to the raw regression coefficients (Table 25). Since working at home represents either a second job for the husband or supplementary income from the wife, this greater use of the internal community may be the effect of the resulting income of the second job, or the higher energy level concomitant with the extra work load.

Home volunteer work relating to health apparently contributes at a significance of .0661 to the relationship between home production and use of the internal community (Table 24). Home health production refers both to nursing activity at home as well as soliciting for fund drives in the neighborhood. This is positively related to using the

recreation facilities, being employed in the internal community, and activity in the civic subsystem at .47, .38, and .33, respectively. Inasmuch as there was only one instance of extended home nursing care, it may be that the discriminating factor is the willingness to contribute time to a cause beyond the family, such as a fund drive. This interest in the local community is reinforced by local employment and participation in civic groups and political activity.

The marginal significance of income to the internal community at .06 is through the employment subsystem and business subsystem according to the raw regression coefficients for adults only (Table 25) at .21 and .20, respectively.

H_o: There is no relationship between penetration outside the community and social position, family size, income, stage of family life cycle, length of residence, and home production.

This hypothesis was not rejected by the coefficients of the correlation matrix and the multiple regression analysis. However, some interesting trends are evident. Income appears more related to use of the external community than family size (Table 25). When children are weighted equally with adults, the use of the business and employment subsystems is marginally significant at .26 and .25, respectively as measured by the raw regression coefficients, reinforcing the negative relationship of family size to internal employment and business. That is, larger families

tend to go outside the city limits for employment and shop-
ping. Even though the presence of children would dilute
the scores, their presence must influence the decision to
work and shop outside the local community to maximize income
and seek out appropriate resources.

When adults alone are considered, the relationship
of income to the external cultural subsystem is .21. The
correlation matrix did point out that use of the business
system external to the community was correlated at .52 for
adults only with the use of the cultural subsystem. This
supports an impression of the field worker that adults in
single and two-person households appeared to seek leisure
outside the local community.

In summary, the larger family size is related to
significantly higher contact hours with subsystems in the
community. This community is not limited to the local one,
for it appears that the wage earners of these families are
commuting to employment outside the city limits and doing
their shopping there. In the first instance, the commuting
may be to Flint and Lansing, while the shopping can be
focused on the major grocery stores just over the city lim-
its as well as the shopping malls in outlying cities.

Use of the internal recreation subsystem, the civic
subsystem, and local employment are highly related to fami-
lies involved in home-based volunteer health activity.
This relationship may include family size, and therefore
may be a result of interest in the community through

activities of children and of time available because of minimal commuting time.

There is also a group of one- and two-person households who go outside the community for leisure activity as defined in the cultural subsystem. From the remarks by respondents, these appear to be more specialized services as night clubs and theatre to be found in more diversified communities.

Hypothesis 3: Flow and Family Variables

H_o: There is no relationship between flow within the community and social position, family size, income, stage of family life cycle, length of residence, and home production.

The null hypothesis was rejected on the basis of the multiple regression analysis at .001. Although no one family variable was significantly related, life cycle appeared to have some influence for the first time in this analysis. The correlation matrix presented information about relationship of subsystems to the flow score.

H_{A1}: Flow is positively related to social position and income.

There appeared to be no trend of relationship between any family variable and flow according to the raw regression coefficients which centered around zero. This may indicate that families utilizing the community resources are at the same time contributing to the community, as illustrated in Table 26. The means for positive and negative are so close, it appears there is balancing within the family system.

Table 26. Standard scores for components of flow (N=123).

$$\text{Flow} = \frac{\text{positive-negative}}{\text{neutral}}$$

Components of Equation	Standard Scores	
	Internal	External
Mean		
Positive	42.97	42.00
Negative	42.47	41.70
Neutral	42.23	41.90
Flow	-.05	.01
Standard Deviation		
Positive	4.55	2.98
Negative	3.06	2.90
Neutral	3.52	3.53
Flow	.12	.09
Range		
Flow	-.184 to +.176	-.163 to +.179

On the other hand, some elements were not included for methodological reasons. For instance, the welfare category ranging from unemployment insurance to subsidized housing was represented in the data only with a frequency count. Also dollar contributions were not differentiated between internal and external. Their inclusion would have added another dimension to the positive and negative scores.

According to the correlation matrix, the employment and civic subsystems were most related to the flow scores. These correlations were .53 for civic when children were weighted equally with adults and .51 for employment when children were weighted as one-half. These positive scores probably contributed to the overall correlation between positive flow and total scores of .77. Further analysis would be indicated regarding the civic subsystem to determine which activity, from participating in civic groups to political activity, was the predictive element.

H_o: There is no relationship between flow outside the community and social position, income, family size, stage of the family life cycle, length of residence, and home production.

This hypothesis was not rejected in relation to family variables. However, the use of the external community seems to be associated with the business and recreation subsystems. According to the correlation matrix, the use of the recreation subsystem is highly related to negative flow at .67 (Appendix G). This would indicate use of state parks or other public facilities outside the city limits

by adults only. The use of the external business subsystem is highly correlated at .54 with neutral flow when only adults are compared. This correlation is still significant when children 13 and under are weighted equally with adults at .51. Neutral flow also correlates at .44 with the culture subsystem. This indicated that goods and services are the primary use of the external business community, followed by leisure pursuits of a sedentary nature by adults only.

Hypothesis 4: Suggestions for Community Development and Family Variables

H_o: There is no relationship between numbers of suggestions for community resource development and social position, family size, income, stage of family life cycle, length of residence, and home production.

This hypothesis was not rejected. As explained in methodology the many suggestions did not lend themselves to comparison with family variables. Some significant relationships may emerge on the basis of individual linkage behavior, an analysis beyond the scope of present use of the data.

Conclusions

In this diverse community, one family variable emerges as significantly related to linkage dimensions, that is, family size. Although one- and two-person households are in the majority, a substantial number of families, 46 per cent, are now in the process of rearing children. Thus families with children appear to dominate in the

community because of their numbers. They are also more active, entering more subsystems and spending more hours in the internal community.

Home production as a whole is also related to family size. The greatest contribution comes from families supplying goods and services for themselves in addition to securing them in the community. From the data this activity extends to almost every subsystem, except the leisure-oriented subsystem of culture. Home production in culture is emphasized by smaller family units.

About half the population is in the lower two categories of social position, indicating a combination of education of high school or less and of semi-skilled or unskilled employment. The median income is about $10,000, indicating either good pay in lower job categories or misinterpretation of respondent's job title. The dominance of blue-collar workers would imply the presence of an extended family system, a possible alternative to community resources for the family. The fact that the mean length of residence for families is 16 years and for individual family members is 27 years lends strength to the notion of extended kinship and friendship network.

The long-time residents appear also to include those of lower income. It may be they are employed locally where wages tend to be lower, or are among the 20 per cent depending on social security and other fixed incomes for sustenance. In contrast, the higher incomes are associated with larger

families more recent to the community or of recent family
formation and of higher social position.

Although 100 per cent of the families use the
internal business subsystem, employment accounts for the most
contact hours followed by business, health, education, and
religion. This ranking was secured from the adult schedules,
including individuals 14 and over. Therefore, if children
13 and under were accounted for, there could be a transposi-
tion of the rankings between health and education.

Utilizing the external community also focuses on
employment and business. Although the means are less than
for the internal community they are so substantial that it
is evident families need to go outside the city limits for
resources. The third subsystem in order of utilization is
recreation. This can, of course, be attributed to vacation
trips for which there is no substitute in the local commu-
nity. On the other hand, the number of suggestions for
improvements in the area of recreation for the local commu-
nity suggests there is a lack in this area, not satisfied
by the use of the external community.

Use of the external health subsystem ranks fourth,
and from the comments of the respondents, was for the most
part prompted by specialized needs not available locally.

It appeared that internal flow was significantly
related to family variables with stage of the family life
cycle being most prominent but not significant. According
to the raw regression coefficients, the relationship among

the family variables and flow was very close to zero.
This may indicate that the contribution to and use of the
community are so evenly balanced within the family system
that no great differences exist among families. This appears
to be substantiated by results from penetration which link
the use of the educational system (negative) with employ-
ment (positive).

Four clusters of similar characteristics emerged
from what appeared to be a diverse relationship of the family
to the community. These reflect the influence of family size
on the breadth and depth of the contact hours with community
subsystems.

The larger families enter more subsystems than
smaller families. They also spend more hours in home pro-
duction activities of recreation and education. The latter
could include home study or preparation for volunteer lead-
ership in an educational group as Scouts. In addition, the
wage earners are employed outside the city limits and do
more shopping there. Inasmuch as the major grocery stores
were just over the city line, as was a shopping mall, this
could represent patronizing the metropolitan area as well
as traveling 30 to 40 miles to modern shopping malls. In
addition, the higher the income, the more subsystems entered.
This diversity was also related to length of family residence
in that younger families or those more recent to the commu-
nity entered more subsystems.

Included in this pattern is the family with high participation in volunteer effort in the health community from the home, as participating in health drives. These families are employed locally, utilize local recreational facilities and recreation, and participate in fraternal organizations.

In contrast, some smaller families with lower income and longer length of residence in the community were more restricted in the number of different subsystems they entered, and focused a great amount of time on leisure activity in the home. They also shopped at internal businesses.

Then there appeared to be a nucleus of adults with higher income who made use of the external business and culture subsystems. Of small family size, they may be the ones who enjoy eating out, and traveling to places of interest.

One interesting phenomenon evident in the data was the utilization of two subsystems emphasizing leisure: one active, the other sedentary. The means, as summarized in Table 27, show that most of this leisure is home oriented and of a sedentary character. The greatest contribution to these sedentary hours is made by small families of long residence in the community and low income. Small families with higher income tend to utilize the external culture subsystem.

Table 27. Summary of hours in culture and recreation subsystems (N=140).

Source	Mean Hours		
	Culture	Recreation	Total
Home Production	858.5	142.6	1001.1
Internal Community	60.1	50.6	110.7
External Community	33.0	106.7	139.7
Total	951.6	299.9	1251.5

Families with children make use of internal recreation facilities more than external recreation facilities. However, according to the number of suggestions made regarding internal recreation, there is an apparent need for more facilities, extending over the age span from young children to adults and from natural environments as parks and horseback riding areas to man-built roller skating rinks and swimming pools.

CHAPTER V

SUMMARY AND IMPLICATIONS

This chapter is divided into three sections: summary, limitations of the study, and implications for further study.

Summary

This study had a two-fold purpose: to expand the knowledge of the family system beyond its immediate boundaries to include the environment from which it derives resources, and to provide community decision makers with these data as a factual contribution to the assessment of community resources. More specific objectives were: (1) to devise a system of measurement for family's linkage with community resources; (2) to determine the relationships among scope, penetration, and flow dimensions of family-community resource linkages and selected family variables: social position, size of family, stage of family life cycle, income, length of residence in the community, and hours spent in home production; and (3) to determine broadly the families' unmet resource needs in the community.

The random sample of 140 families was drawn from adjoining cities in Michigan with a total population of about 24,000. Separated by 30 or 40 miles from cities of larger

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size, they illustrated the relationship of smaller communities to the needs of families vis-a-vis other community centers.

All family members 14 and over were asked to report through a detailed questionnaire the number of contact hours with the community over a period of a year. A summary questionnaire for children 13 and under reported their contact hours in the subsystems when unattended by adult family members. These hours were associated with services and facilities representing a range of resources classified into nine subsystems: business, employment, recreation, culture, religion, education, health, civic, and welfare. The individual contact hours were transformed into mean family hours for quantifying the linkage dimensions of scope, penetration, and flow. Mean family hours were the basis for deriving standard scores for each linkage dimension, thereby locating families in relation to each other.

Scope described the number of subsystems families contact; penetration, the number of contact hours in each subsystem; flow, the relative use of or contribution to the community. Families received one standard score for scope, one for internal flow, and one for external flow. The assignment of standard scores for penetration was more complex, for there were scores for each subsystem by internal and external community. In addition, the treatment of the summary questionnaires was varied to determine the effect on the family means for each subsystem. Most

significance was apparent when the contact hours of children 13 and under were weighted equally with contact hours of individuals 14 and over.

Multiple regression and Pearson correlation coefficients were used to relate the linkage variables of scope, penetration, and flow with family variables of family size, income, social position, stage of family life cycle, years of residence, and home production. Home production scores were derived like linkage scores from the hours families reported they spent in providing within the home the goods or services they could have purchased from the community. Such activity ranged from meal preparation to remodeling a home.

A combination of family size and income was significantly related to scope, indicating that the larger families with better income would enter more subsystems. The range of different subsystems entered was from three to nine, with the mean at seven. Of all family variables, family size was most significantly related to use of the internal community, while income along with family size was marginally related to use of the external community.

Employment accounted for the highest mean contact hours both within and without the community. However, business, though second in hours, was utilized by all families and accounted for more significance in a positive relation to family variables than employment.

The third most utilized subsystem in the internal community as reported by adults only was the health subsystem, followed by education. Consideration of the contribution of children 13 and under to utilization of the education system could transpose this ordering. In the external community, the third and fourth positions were occupied by recreation and health, respectively. Although the prominence of recreation in the external community may be attributed to vacation trips, the number of suggestions for additional recreational facilities in the local community suggests a need for increased resources in this area.

Selected elements from the penetration scores were formulated into an equation quantifying flow: the relative use of or contribution to the community. Internal flow was significantly related to the family variables with family life cycle most prominent although marginally significant. The mean score for internal flow was slightly negative, within a narrow range of scores. There was no significant relationship between the external flow scores and family variables. The mean score for the external community was slightly positive within a narrow range of scores.

Families with children tend to make greater use of and participate more in the community. They have more income either from internal or external employment, and supplement this through home production. In the one- and two-person households there appear to be differing

characteristics. The older families with long years of residence in the community, depending upon fixed incomes, shop primarily in the local community and are entertained at home through hobbies and television. Others with high scores in volunteer health activities penetrate the internal civic and recreational subsystems as well as local employment. The third cluster of small households with higher income makes more use of the external community through business and culture.

Limitations of the Study

The goal of gaining an overall view of family contact with the community was accomplished. However, some possible limitations inherent in the methodology and findings should be noted.

Asking families for hours spent in the community over a period of a year was a complex task since families do not ordinarily quantify their behavior in these terms.

Requesting information concerning all subsystems for all family members extended the length of the questionnaire and time involved.

Harmonizing the function of activities categorized in subsystems would aid in interpretation of findings. In this study, it appeared that although some civic organizations have as their purpose some goals of community contribution, their function within the study community was more social, contributing to individual needs. Consequently,

when contact hours with these organizations are summed with political activity, it is not readily apparent what interpretation to make.

Relying on standard scores to divide the families into categories based on utilization of the community represented the distribution of contact hours, but hindered the isolation of those having little contact with the community. Since standard scores are based on the standard deviation, they are most effective with a normal curve distribution. Inasmuch as the distributions for the linkage variables were skewed, in most instances with a few maximum scores influencing the mean, the standard scores representing little or no utilization were close to the mean with consequent masking of their characteristics.

Knowing the hours of utilization of the community does not indicate the quantity or quality of a resource contribution to the family system or to the functional or dysfunctional effect of these resources on either the family or the community.

Identifying areas of resource development is only the first step in the decision process. If these data are to be of most value to community decision makers, families would need to establish priorities among the suggestions. One approach could be to assess the contribution of the facility or service to developmental needs of individuals and families in relation to costs and the necessary changes in behavior patterns to utilize these added resources.

The effect of welfare was inadequately represented because data on its contribution were not comparable to either dollars or hours. Thus a possible influence on the negative component of the flow score is absent. Financial support from welfare ranged from unemployment insurance through supplementary ADC payments to total support and subsidized housing.

Implications for Further Study

The following implications fall into three sections: those relating to improved techniques for further study of linkages between the family and community; the construction of distinctions between family and individual behavior; and research including the results of this study, but exploring other questions.

The raw data in contact hours with services and facilities within subsystems provided by this study can be analyzed to provide categories of high, medium, and low contact hours representing utilization of community resources. This would facilitate a response to hours typical of individual behavior. In addition, these categories could serve as the basis for analysis.

The questionnaire could be divided in half and, with random assignment of the parts, the families would not be faced with the stress of a complex questionnaire, thereby contributing to greater cooperation and more accurate responses.

Supplementary questionnaire items specific to the contribution of the welfare subsystem to the family would be valuable. In this way an assessment could be made of the contribution of these benefits, such as unemployment insurance, on the total family income.

This study has been confronted with the problem voiced by Kunkel (1967), in translating individual behavior to group or family behavior. In Kunkel's case, there was a transition from village to family organization. It is possible that individual behaviors could be similar in both situations, but the organizing system be different. In the present study, family behaviors, encompassing diverse age levels, were quantified by averaging individual hours to arrive at family hours. Is there a construct of family behavior per se, or only individual behavior distinguished by its organizing system?

Rather than family behavior, the question may revolve around the family as an intervening system and the allocation of resources to design and maintain the social and physical components of the system. However, our society is so individually oriented that the individual and his needs are understood better than the family and its systemic needs. To acquire better understanding of the latter would necessitate research into the family system, taking into account the definition of family vs. individual behavior and the effect of allocation of resources to the individual or family under conditions of affluence and scarcity. Krieger (1972)

and Chapin and Hightower (1965) overlooked this relationship and consequently related individual needs to community resources without considering the intervening family system.

The proposal by Krieger (1972) explores the way the community could meet individual development needs. The community intervenes when dysfunctional conditions are aggravated, implying in some cases a family system malfunction, in others, individual aberrations. The response would be a community institution to meet individual needs without considering the adjustments possible within the family system. An example of such a possibility is teaching the mother how to supplement nursery school educational goals. The approach is also applicable to other specific areas besides child development.

Research by Chapin and Hightower (1965) utilized discretionary "free" time as a basis for predicting trends in land use. That this may be inadequate is supported by their own research, in that there was a discrepancy between what subjects would currently like to do and what they actually did. Some of the discrepancy may be accounted for by systemic demands. In any case, there appears to be a need to research the energy needs of the system in addition to the elements of the system.

A question for further exploration suggested by this study relates to the great interest in leisure, supporting the findings of Chapin and Hightower (1965) and Havighurst and Feigenbaum (1958). It was evident in the

present study, both in the amount of contact hours devoted to leisure and in the suggestions for additional community resources, that families were allocating considerable time to active and passive leisure activity. With the emphasis on recreation from the advertising media and models in society, the question about allocation of resources comes to the fore.

Thus recreation could be studied in relation to the systemic needs of the family and illustrate the discussion by Etzioni and Lehman (1967) about the relationship of goal and nongoal activity to the functioning of a system. Are leisure pursuits replacing time, energy, and resources that could be devoted to the maintenance of the physical and social elements of the family system? To what extent, for instance, does the color television and snowmobile substitute for safety maintenance of the shelter, an adequate supply of food, or interpersonal communication? Does leisure function as a nongoal activity draining excess energy from the system, or diverting attention, in the process of tension management with the result of maintaining harmonious relationships among components? Given some of the dysfunctional elements of the society, are these allocations of time and money to leisure at the family level functional or dysfunctional to the distribution of resources for a viable family and society?

Another area of investigation is the extent to which family systems contribute to community resources. One aspect

of this contribution has come through taxing real property.
Inasmuch as housing can reflect economic resources, the
differential property values would appear to be an approp-
riate basis for equitable distribution of community costs.
However, it was noted in this survey that there were many
families living in marginal housing whose income, by current
mortgage practices, could have supported a higher standard.
Yet attractive, or more durable housing was apparently not
within their value structure. So not only do these fami-
lies not contribute economically in the same proportion as
those who have invested in good housing, but their contribu-
tion to the aesthetic dimensions of a community is minimal.

This suggests that understanding the effect of
different contributory patterns between the family and the
community, ranging from the aforementioned property taxes
to hours in volunteer activity, may have implications for
adaptive mechanisms between the family and the community.

This study focused on the family's utilization of
the public community, but untapped by this study is a net-
work of family and friends who undoubtedly accounted for
some differences in the apparent contentment of some respon-
dents of this study. The relationship of this network to
families as complementary to or as a substitute for the
public community may be related to the adequacy of public
community resources, and would therefore complement this
study of the public community.

In conclusion, the major interest has been on the family as a viable system exchanging resources with a community. Further study in this area can only enhance appreciation of the infinite variety and complexity of this interaction and understanding of the functional and dysfunctional effects of modification of these linkages.

APPENDICES

APPENDIX A

TABLE 28. POPULATION OF PLACES, 1970

APPENDIX A

Table 28. Population of Places, 1970.

United States Size of Place	Number	Population
Total	20,768	144,747,761
Places of -		
1,000,000 or more	6	18,770,773
500,000 to 1,000,000	20	12,989,017
250,000 to 500,000	30	10,466,400
100,000 to 250,000	100	14,292,614
50,000 to 100,000	240	16,740,130
25,000 to 50,000	520	17,848,705
20,000 to 25,000	242	5,404,850
10,000 to 20,000	1,143	16,026,535
5,000 to 10,000	1,839	12,930,372
2,500 to 5,000	2,295	8,041,728
2,000 to 2,500	987	2,200,587
1,500 to 2,000	1,361	2,353,858
1,000 to 1,500	2,182	2,678,402
500 to 1,000	3,294	2,371,707
200 to 500	3,990	1,332,486
Less than 200	2,519	299,597
Cumulative Summary:		
Places of -		
1,000,000 or more	6	18,770,773
500,000 or more	26	31,759,790
250,000 or more	56	42,226,190
100,000 or more	156	56,518,804
50,000 or more	396	73,258,934
25,000 or more	916	91,107,639
20,000 or more	1,158	96,512,489
10,000 or more	2,301	112,539,024
5,000 or more	4,140	125,469,396
2,500 or more	6,435	133,511,124
2,000 or more	7,422	135,711,711
1,500 or more	8,783	138,065,569
1,000 or more	10,965	140,743,971
500 or more	14,259	143,115,678
200 or more	18,249	144,448,164

Source: 1971 "Number of Inhabitants," U.S. Census of Population 1970, Final Report PC (1)-Al, U.S. Summary (Washington: Government Printing Office, 1970).

APPENDIX B

TABLE 29. MATRIX OF PEARSON CORRELATION

COEFFICIENTS AMONG LINKAGE VARIABLES

APPENDIX B

TABLE 29. MATRIX OF PEARSON CORRELATION COEFFICIENTS AMONG LINKAGE VARIABLES

#		31 I1BUS	32 I1EMP	33 I1REC	34 I1CUL	35 I1REL	36 I1EDU	37 I1HEA	38 I1CIV	39 I2BUS	40 I2EMP
31	I1BUS	1.000000									
32	I1EMP	.243664	1.000000								
33	I1REC	.271256	.049509	1.000000							
34	I1CUL	.315548	.243338	.221725	1.000000						
35	I1REL	.049932	-.039248	.162279	.051004	1.000000					
36	I1EDU	.058498	-.158177	.107594	-.147898	-.080707	1.000000				
37	I1HEA	.011968	-.001170	-.136965	-.024601	-.100869	.038120	1.000000			
38	I1CIV	.199631	.230103	-.120634	-.245638	-.003967	.062563	.108305	1.000000		
39	I2BUS	.030131	.208350	.105002	-.241478	.071940	.058188	-.028722	.207471	1.000000	
40	I2EMP	.223345	.906026	.001390	.180610	-.011539	-.145111	-.025711	.261808	.379155	1.000000
41	I2REC	.222247	.053514	.029497	.268555	-.100583	-.197704	-.101841	.077844	.078414	.009454
42	I2CUL	.260303	.191669	.138664	.883494	-.056086	-.176520	-.048965	.193968	.195539	.169128
43	I2REL	.017503	.000907	.160753	.041068	.946053	-.076787	-.095339	.040735	.092394	.057211
44	I2EDU	.032337	-.147494	.175945	.175675	-.074185	.525047	-.045526	-.062251	-.247742	-.304691
45	I2HEA	-.001662	-.064010	-.145826	-.061674	-.091744	.072660	.948000	.101474	-.002322	-.042126
46	I2CIV	.222940	.255281	.034634	.231030	.038236	.053099	.086278	.971788	.273162	.313512
47	I3BUS	.912763	.314281	.202633	.282175	.067351	.037870	-.026889	.239457	.908714	.347997
48	I3EMP	.224485	.959102	.004347	.206694	-.023359	-.146752	.010175	.265276	.321832	.960237
49	I3REC	.262016	.070588	.858841	.298391	.123565	.215741	-.108232	.060876	.100527	.012929
50	I3CUL	.290957	.244313	.169859	.935793	.041728	.177175	-.009866	.214991	.229132	.107909
51	I3REL	.032264	-.030666	.150252	.037598	.972269	-.095293	-.098756	.005474	.087308	.016367
52	I3EDU	.030962	-.155044	.154741	.177663	-.086145	.633006	-.019689	.061593	-.221496	-.298520
53	I3HEA	.024398	-.016732	-.133140	-.018192	-.074939	.058827	.985063	.134925	-.008223	-.030629
54	I3CIV	.213141	.235110	.089583	.237762	.057744	.050682	.115622	.992284	.232603	.276458
55	O1BUS	.240116	.198509	-.040208	.232392	.315622	.011071	.076508	.192958	.186990	.174732
56	O1EMP	.096437	-.160725	.066234	.042325	.344531	.090545	-.018785	.096471	.040381	.161295
57	O1REC	.116498	.090501	-.030404	.058263	-.228599	-.003581	-.002012	.102991	.056621	.046187
58	O1CUL	.277505	.123558	-.022375	.302316	.217867	-.018591	-.019536	.063158	.276040	.137584
59	O1REL	.165866	-.045125	-.024555	.164525	.184767	-.018063	-.046097	-.072856	.081926	-.120477
60	O1EDU	.255266	.205615	.030783	.162035	.132122	.129013	-.009842	.106395	.210267	.186180
61	O1HEA	.091041	.001399	-.076683	-.008850	.083273	-.028720	.501956	.057445	.009347	-.070815
62	O1CIV	.079132	-.074603	.131671	.148779	.044340	.139381	-.091627	.247583	.134899	.115224
63	O2BUS	.170426	.000243	-.017684	.132946	.169515	.100920	-.032839	.122216	.101219	.067732
64	O2EMP	.095036	-.157128	-.084605	.058673	.303876	.114659	-.006518	-.091509	-.027996	-.152372
65	O2REC	.182398	.130377	-.072611	.120388	.217400	-.002017	.010647	.153804	.181595	.141497
66	O2CUL	.282701	.114844	-.037548	.293797	.196721	.027497	-.063457	.061604	.305199	.172290
67	O2REL	.145718	-.050531	-.034573	.156915	.208297	.012952	-.046387	-.071873	.073269	-.120677
68	O2EDU	.229666	.165110	.018499	.119410	.095214	.139918	.099533	.073269	.232686	.204723
69	O2HEA	.181054	-.040832	-.102055	.087290	-.120766	.039591	.450142	.115974	.098900	-.026697
70	O2CIV	.080750	.088664	.142643	.154971	.051208	.154961	.035193	.073512	.149515	.134155
71	O3BUS	.195728	.107036	-.022932	.175788	.216610	.070393	.035782	.245786	.082303	.070648
72	O3EMP	.088315	-.168654	-.071902	.035274	.365053	.091341	-.018950	.167876	.053890	-.165940
73	O3REC	.144129	.104394	.058058	.080099	.189799	-.003411	.011460	-.097319	.121468	.088949
74	O3CUL	.307657	.129437	-.035316	.301069	.224053	-.015544	-.042356	.116120	.309358	.165262
75	O3REL	.148708	.051568	-.027491	.148762	.201850	.013218	-.047338	.069911	.069911	-.123153
76	O3EDU	.192042	.192042	.021628	.128762	.112324	.110395	-.097534	-.073348	.066971	.200388
77	O3HEA	.102714	.005278	-.087824	.020446	-.103512	-.041410	.492830	.104996	.215395	-.079695
78	O3CIV	.076699	.078156	.137040	.144205	.042977	.149334	-.088810	.043553	-.007564	-.087564
79	ASSVAL	.090948	.133875	.343686	.108332	.127481	.110961	-.007669	-.083290	-.135210	.078107
80	D-EMP	-.089663	-.165059	.120071	.056808	-.059904	-.023122	.091887	-.036095	-.108229	-.218809

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SAMPLE CORRELATION MATRIX

	31 I1BUS	32 I1EMP	33 I1REC	34 I1CUL	35 I1REL	36 I1EDU	37 I1MEA	38 I1CIV	39 I2BUS	40 I2EMP
81 D-CUL	.130012	.054268	-.094731	.075908	.003467	-.085523	-.052892	.225931	.262756	.105128
82 D-REL	.070661	-.069545	.042458	.129227	.476228	-.046170	-.020905	-.008076	.068025	-.091711
83 D-EDU	.185962	.151084	.279762	.239212	.046176	.146796	-.071979	.039547	.125416	.124527
84 D-HEA	-.004808	.114516	.123423	.108394	-.066030	.048650	-.049635	.158045	.035092	.200768
85 D-CIV	.202125	.063405	.301268	.432003	.038664	.254621	.129301	.339742	.093065	.049212
86 IPOSIT	.281433	.563328	.193535	.409915	.413811	.003145	.027320	.694054	.301527	.526268
87 INEGAT	.362413	-.027571	.315407	.322448	.142696	.516475	.101152	.082017	.190642	-.065189
88 INEUTR	.527165	.159827	.445462	.545941	-.053905	.277958	.201807	.144818	.247602	.019709
89 FLOW1	.032190	.516742	-.038347	.160058	.278766	-.298072	-.027216	.559507	.151533	.504329
90 OPOSIT	-.243745	-.274026	.206709	.105090	.027163	.000000	-.115400	.138069	.136870	-.250535
91 ONEGAT	.185088	.038583	.002935	.137638	.144850	-.012174	-.015421	.068869	.098773	-.021150
92 ONEUTR	.295403	.317973	-.034026	.163042	.141579	-.054577	.109532	.179496	.310647	.366896
93 FLOWOT	.057752	-.253090	.169021	-.013227	-.078142	.016473	-.085689	.062477	.029426	-.105195
94 FLOWIN	.039673	.503050	.044581	.162463	.262844	-.275631	-.027253	.517431	.121924	.482655

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SAMPLE CORRELATION MATRIX

		41 I2REC	42 I2CUL	43 I2REL	44 I2EDU	45 I2HEA	46 I2CIV	47 I3BUS	48 I3EMP	49 I3REC	50 I3CUL
41	I2REC	1.000000									
42	I2CUL	.258509	1.000000								
43	I2REL	.107892	.055151	1.000000							
44	I2EDU	-.274765	.220016	-.159870	1.000000						
45	I2HEA	-.125589	-.073591	-.085794	-.189315	1.000000					
46	I2CIV	.012809	.192251	.078149	-.113321	.069309	1.000000				
47	I3BUS	.142718	.215574	.066663	-.140605	-.024457	.274330	1.000000			
48	I3EMP	.016632	.166480	.032466	-.245816	-.027256	.303385	.327456	1.000000		
49	I3REC	.976009	.272845	.116718	.243182	-.132212	-.085144	.184003	-.033324	1.000000	
50	I3CUL	.268945	.959450	.039810	.201491	-.046940	.214039	-.013784	.227850	.290058	1.000000
51	I3REL	.095439	.045237	.981495	-.148505	-.089299	.045120	.258271	-.004155	.107929	.033305
52	I3EDU	.245963	.235175	-.166685	.972044	-.081084	.184567	.069820	-.242548	.226221	.220497
53	I3HEA	-.103534	-.038175	-.072367	-.077628	.964058	.113809	-.013236	.001853	-.104534	.000416
54	I3CIV	-.058218	.195098	-.039797	-.095103	.106518	.979047	.254965	.277129	.040717	.216691
55	01BUS	-.026739	.237038	.266890	.066422	.043309	.198560	.213214	.188954	.014605	.225110
56	01EMP	-.106013	.082969	.287670	.195381	-.016466	.082182	-.002766	-.166937	-.008602	.022447
57	01REC	-.105955	.058543	.166258	.058673	.021439	.139741	.043487	.105158	-.084315	.116050
58	01CUL	-.083525	.372038	.210735	.018944	-.033978	.040640	.263861	.131534	-.014107	.351964
59	01REL	.070421	.192330	.147235	.093161	-.077561	.074971	.076699	-.009424	.070532	.208412
60	01EDU	-.015924	.134075	.093861	.035894	-.096981	.101969	.245900	.175958	.040292	.166078
61	01HEA	-.089296	-.051628	-.103531	-.107608	.356320	.047927	.090224	-.026684	-.078144	-.010261
62	01CIV	.072706	.129828	.087561	.115720	-.089909	.246537	.075961	.102706	.064565	.115528
63	02BUS	.001633	.206954	.163510	.271048	-.076194	.122062	.131608	.082083	.005624	.166003
64	02EMP	-.116402	.090590	.339741	.165168	-.004192	.075021	.005552	.158326	-.102104	.038634
65	02REC	-.075843	.158545	.197595	-.060397	.013530	.215643	.150485	.172885	.047326	.189732
66	02CUL	-.036108	.351216	.226097	-.060163	-.078875	.048043	.303641	.137083	-.036457	.326199
67	02REL	.055009	.103238	.186676	.062098	-.075754	.073960	.061438	-.091659	.062490	.198299
68	02EDU	-.004765	.115726	.092961	.013839	-.097667	.111470	.252662	.171296	.004611	.129673
69	02HEA	-.081278	.060333	-.140707	-.084576	.303663	.065308	.172631	.008363	.070959	.008157
70	02CIV	-.075745	.136311	.100563	.088513	-.083596	.244902	.095625	.115781	.076477	.115207
71	03BUS	-.003604	.216343	.187404	.268335	-.017476	.161385	.135711	.095333	.016706	.190739
72	03EMP	-.106945	.076161	.308655	.185225	.016611	.082905	-.007557	-.171519	-.009461	.011592
73	03REC	-.086436	.102979	.156447	.821923	-.030736	.168766	.090046	.138473	-.058402	.155129
74	03CUL	-.034455	.368645	.229477	-.038395	-.051763	.051083	.312691	.148318	-.034708	.348535
75	03REL	.063161	.175465	.167761	.061563	-.077308	.075477	.062699	-.093539	.070864	.191079
76	03EDU	-.007953	.106406	.092626	.014991	-.095705	.100628	.250867	.173642	.079901	.125857
77	03HEA	-.065840	-.010483	-.124052	.118508	.337550	.033800	.089696	-.029498	-.054728	.029617
78	03CIV	.070471	.125837	.091741	.090177	-.087144	.238957	.082452	.105316	.071151	.105154
79	ASSVAL	.255959	.051895	.069673	.251139	-.021573	.019738	.055800	.090084	.279690	.073242
80	D-EMP	.003852	-.067582	-.056354	.129514	-.078950	.072148	.091317	-.192619	.040313	.080261
81	D-CUL	.051011	.094740	.044455	-.106702	-.033231	.255529	.169546	.076323	.066149	.069650
82	D-REL	.035063	.165187	.420943	-.031742	-.027020	.058647	.069843	.061837	.064514	.129811
83	D-EDU	.267277	.204495	.134081	.210819	-.088980	.019463	.152639	.106134	.235652	.213255
84	D-HEA	.050775	.097947	-.058190	-.025214	-.024982	.175125	.067390	.155848	.090222	.063074
85	D-CIV	.366069	.332563	.057227	.184061	-.143920	.285008	.166052	.063385	.374943	.359071
86	IPOSIT	.144588	.361362	.426613	-.043137	.007197	.707750	.320032	.554063	.150462	.391169
87	INEGAT	.386699	.274482	.136371	.467242	.081638	.061372	.233560	-.066859	.350257	.296847
88	INEUTR	-.405608	-.497371	-.113306	-.622032	-.110534	.083999	.360262	.078282	-.403217	-.545940
89	FLOW1	-.087895	.146318	.296608	-.314989	-.036473	.507007	.142814	.529661	-.085163	.169924
90	OPOSIT	.106358	.178165	.044878	.074561	-.008113	.104320	.174159	-.243252	.173360	.126190

SAMPLE CORRELATION MATRIX

		41 I2REC	42 I2CUL	43 I2REL	44 I2EDU	45 I2MEA	46 I2CIV	47 I3BUS	48 I3EMP	49 I3REC	50 I3CUL
91	ONEGAT	-.014324	.178864	.079988	.163160	-.033145	.068841	.101440	.032922	-.014463	.203502
92	ONEUTR	-.014276	.197230	.149632	-.049897	.105411	.217951	.353471	.367098	-.012628	.194208
93	FLOWOT	.164201	.014365	-.009811	-.057953	-.044422	.039463	.064365	-.218074	.153808	-.042816
94	FLOWIN	-.023237	.138756	.259647	-.230723	-.040310	.524748	.134955	.510274	-.015874	.156961

SAMPLE CORRELATION MATRIX

		51 I3REL	52 I3EDU	53 I3HEA	54 I3CIV	55 O1BUS	56 O1EMP	57 O1REC	58 O1CUL	59 O1REL	60 O1EDU
51	I3REL	1.000000									
52	I3EDU	-.155107	1.000000								
53	I3HEA	-.071679	-.049094	1.000000							
54	I3CIV	-.007145	-.089387	.142091	1.000000						
55	O1BUS	.273766	.071549	.078967	.194634	1.000000					
56	O1EMP	.299996	.194559	-.016368	.194582	.256516	1.000000				
57	O1REC	.202210	.094540	.021311	.107104	.275410	.162975	1.000000			
58	O1CUL	.221358	.016720	-.016246	-.065383	.520400	.176985	.251812	1.000000		
59	O1REL	.157680	.095637	-.044171	-.072107	.333040	.151856	-.000395	.358315	1.000000	
60	O1EDU	.105817	.085138	-.087459	.105071	.311253	-.075067	.145476	.287989	.181821	1.000000
61	O1HEA	-.093032	.106381	.434055	.061433	.191529	-.021794	.063394	.077266	-.048596	-.044993
62	O1CIV	.051629	.112142	-.089371	.208165	.149003	.041667	.106281	-.009453	.020691	-.024278
63	O2BUS	.158833	.247515	-.040502	-.119899	.750564	.160525	.292831	.502376	.105700	.173030
64	O2EMP	.344772	.159106	-.004167	-.094993	.269536	.968285	.148267	.210937	.195452	-.064704
65	O2REC	.222129	-.032112	-.023952	.163247	.344516	.097134	.882639	.295257	.003949	.157587
66	O2CUL	.228375	-.047029	-.066227	.068335	.478961	.128235	.187116	.927397	.275961	.258766
67	O2REL	.190473	.064255	-.044505	-.071174	.334295	.152180	-.004537	.361221	.906324	.179169
68	O2EDU	.092102	.048276	-.097063	.114587	.265989	-.074904	.117964	.334108	.179169	.951926
69	O2HEA	-.130587	.084979	.387962	.078615	.253249	-.044040	.066029	.195399	.102475	.132058
70	O2CIV	.065421	.095602	-.083096	.207391	.166187	.044294	.075515	.041548	.022802	.020613
71	O3BUS	.192139	.255225	-.032214	.166963	.868127	.214977	.311903	.495660	.228835	.226386
72	O3EMP	.320515	.101202	-.016512	-.100458	.258771	.995662	.147116	.178541	.101537	-.060029
73	O3REC	.185628	.013954	.041213	.124719	.303219	.071707	.948524	.262626	.052754	.132567
74	O3CUL	.240706	.028129	-.039044	.077057	.485115	.154754	.213490	.966184	.296649	.260379
75	O3REL	.177480	.084040	-.045418	-.072634	.314005	-.155301	-.004630	.337807	.995701	.102865
76	O3EDU	.098098	.068462	-.095133	.103668	.276757	-.074080	.106371	.284200	.106269	.973597
77	O3HEA	-.113575	.118256	.426638	.047451	.230745	-.031423	.067894	.099937	.035089	.059271
78	O3CIV	.056851	-.075534	-.066624	.201765	.160779	.040386	.070997	-.046416	.020055	-.023524
79	ASSVAL	.097173	.245447	-.017519	.032774	.158553	-.124393	.179003	.126503	.113936	.179057
80	D-EMP	.051262	.107988	-.089844	-.040890	-.150143	.133216	.085794	-.097412	-.115932	-.099035
81	D-CUL	.024387	-.131570	-.049481	.232960	.112068	.089509	.083377	.209026	-.054758	.092203
82	D-REL	.426968	-.040081	-.013036	.013590	.293164	.215290	.097279	.082441	.203257	.063929
83	D-EDU	.119257	.184330	-.088427	.022985	.021759	.050306	-.044365	.177581	.066909	.079004
84	D-HEA	-.089632	-.035183	-.047127	.153780	.059166	.020005	-.054899	.064472	-.025880	-.025880
85	D-CIV	.031262	.169195	.143050	.304140	.194256	.075480	-.046475	.116216	-.112917	.038819
86	IPOSIT	.403955	-.052993	-.044013	.606523	.362741	-.026446	.200888	-.200598	.000241	.263101
87	INEGAT	.133475	.499666	.108542	.076590	.212193	.202911	.152246	.194518	.072590	.200591
88	INEUTR	-.107993	.598098	.173376	.119685	.147445	.066453	.055211	.180465	.125311	.125311
89	FLOW1	.276435	-.341576	-.017209	.559047	.187623	-.143712	.078372	.050093	.032475	.119056
90	OPOSIT	.038625	.042663	-.098371	.137683	.044378	.131914	.110555	.241197	.252629	.042107
91	ONEGAT	.098271	.164497	-.020086	.077701	.327739	.069669	.660647	.478254	.161719	.448314
92	ONEUTR	.138324	-.053660	.100826	.204182	.539549	.063233	.219578	.435571	.050393	.188629
93	FLOWOT	-.030316	-.086216	-.067480	.060912	-.196069	.047804	-.413380	-.145088	.075999	-.306867
94	FLOWIN	.250762	-.259973	-.023024	.502766	.195729	-.109582	.112140	.060231	.057229	.144960

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SAMPLE CORRELATION MATRIX

	61 01HEA	62 01CIV	63 02BUS	64 02EMP	65 02REC	66 02CUL	67 02REL	68 02EDU	69 02HEA	70 02CIV
61 01HEA	1.000000									
62 01CIV	-.050898	1.000000								
63 02BUS	-.129374	.146109	1.000000							
64 02EMP	-.029070	.056729	.181163	1.000000						
65 02REC	.029285	-.183963	.319993	.111141	1.000000					
66 02CUL	-.049764	-.037352	.462055	.172329	.270298	1.000000				
67 02REL	-.047270	.017088	.200896	.216614	.074600	.293606	1.000000			
68 02EDU	.049336	-.007263	.225129	-.064129	.136792	.313973	.105488	1.000000		
69 02HEA	.937106	.065134	-.145969	-.050770	.060033	.166190	.019800	.122641	1.000000	
70 02CIV	-.047324	.976868	-.129756	.058966	.167222	-.031636	.019252	-.019028	-.060568	1.000000
71 03BUS	.190644	.144225	.950493	.225798	.336176	.446275	.241452	.224637	.227711	.135003
72 03EMP	.021985	.042033	.165728	.976797	.093467	.129362	.186656	-.067580	-.044627	.044683
73 03REC	.074845	.140524	.307302	.072997	.971995	.220015	.045252	.110300	.080539	.124123
74 03CUL	-.069252	-.050107	.466125	.191013	.272317	.971673	.305552	.310004	.167498	-.063756
75 03REL	-.060239	-.017438	.175972	.206036	.076130	.259483	.990852	.107652	.019390	.019647
76 03EDU	.044601	-.023951	.184591	-.063852	.116619	.282415	.108387	.981019	.112888	-.020342
77 03HEA	.971647	-.057424	-.131899	-.038539	.049808	.062284	.030768	.039923	.962258	-.053392
78 03CIV	-.049333	.906071	.120554	.054905	.161565	-.036214	.016562	-.021968	-.063131	.992468
79 ASSVAL	-.111936	-.273992	.119122	.082610	.169341	.081102	.060623	.164403	.100338	.276189
80 D-EMP	-.053157	-.059678	-.075505	.114634	.017147	-.051004	-.115312	-.137853	-.104105	-.045705
81 D-CUL	-.029381	-.017709	-.152563	.107607	.118868	.144864	-.055247	.145573	-.002762	-.087403
82 D-REL	-.039921	-.015339	.110919	.246012	.115802	.028366	.191993	.019957	.054308	-.009901
83 D-EDU	-.061151	.173120	.056038	.068431	-.025983	.174275	.059859	.086056	-.072255	.172002
84 D-HEA	.018089	-.056438	.015813	-.000289	-.028547	.045197	-.027095	.064494	.039675	-.051393
85 D-CIV	-.002470	.332188	.087111	.099721	-.040383	.073540	.102194	.044814	.011614	.346750
86 IPOSIT	-.015706	.236991	.200039	-.003485	.254931	.185117	.061068	.245812	.011370	.245232
87 INEGAT	.105928	.084289	.224607	.196485	.112600	.166181	.064477	.183096	.118168	.094830
88 INEUTR	.199645	.169630	.209537	-.054275	.031195	.126391	.123275	.082054	.233110	.156419
89 FLOM1	-.077838	.141013	-.044793	-.118816	.149024	.056323	.037341	.099770	-.059471	.142683
90 OPOSIT	-.031398	.130664	-.133338	-.132103	.161041	.210628	.242149	.044185	-.014509	.120060
91 ONEGAT	.128063	-.129393	.344432	.076191	.600391	.360010	.145958	.441060	.176401	.059186
92 ONEUTR	-.164693	.060704	-.511290	.096201	.277095	.446505	.070387	.228353	-.203217	.063522
93 FLOMOT	-.125583	.011220	-.136587	.041870	.326121	.076135	.070511	.296535	-.123127	.051929
94 FLOMIN	-.061306	.202115	.061298	-.099235	.175540	.062179	.047033	.121554	-.024564	.201462

SAMPLE CORRELATION MATRIX

		71 O3BUS	72 O3EMP	73 O3REC	74 O3CUL	75 O3REL	76 O3EDU	77 O3HEA	78 O3CIV	79 ASSVAL	80 D-EMP
71	O3BUS	1.000000									
72	O3EMP	.216867	1.000000								
73	O3REC	.321053	.063160	1.000000							
74	O3CUL	.458333	.156115	.232037	1.000000						
75	O3REL	.216680	.190486	.046181	.279088	1.000000					
76	O3EDU	.209975	-.067134	.091345	.285881	.110610	1.000000				
77	O3HEA	.218812	-.031699	.082650	-.061824	-.031399	.035265	1.000000			
78	O3CIV	.132606	-.040741	.118468	-.068346	.016902	-.023215	-.055659	1.000000		
79	ASSVAL	.148881	.111371	.157978	-.097046	-.101090	.160049	.126948	.278081	1.000000	
80	D-EMP	-.044691	.118093	.028200	-.070170	-.117678	-.115344	-.075241	-.053967	-.017419	1.000000
81	D-CUL	.134244	.090296	.075822	.172941	-.056301	.090989	-.042363	.056987	-.161033	.008866
82	D-REL	.166744	.221149	.087175	.030430	.195932	.028964	.027742	-.014868	.030574	-.056058
83	D-EDU	.031861	.050748	-.058397	.175420	.061087	.077965	-.068992	.167797	.230262	.033447
84	D-HEA	.015041	.020181	-.032976	-.043734	-.027650	-.064079	.007920	-.054703	.050196	.122593
85	D-CIV	.125887	.076143	-.056301	.090669	.104291	.036308	.029615	.340024	.236141	-.065219
86	IPOSIT	.257983	-.022712	.198386	.212706	.078680	.252157	-.025204	.231862	.198237	-.140899
87	INEGAT	.280108	.190935	.104158	.165845	.064830	.187805	.108767	.085337	.169538	.079827
88	INEUTR	.222082	.055082	.043280	.161401	.136270	.082521	.219243	.148603	.313137	.067596
89	FLOW1	.060228	-.133508	.106093	.079309	.036013	.101991	.088342	.136188	.056101	.180304
90	OPPOSIT	.113421	.061975	.136311	.219541	.244028	.003469	.005117	.108267	-.004629	.248556
91	ONEGAT	.360154	.072302	-.634442	.390279	.148952	.403112	.139712	.071585	-.225272	.030384
92	ONEUTR	-.502890	-.054927	.256593	-.440734	.053571	.200796	.157558	.054058	-.040715	-.071796
93	FLOWOT	-.167526	-.103623	-.371472	-.091976	.079042	-.302040	-.113946	.030572	-.183623	.178334
94	FLOWIN	.077595		.135432	.088749	.056531	.122924	-.065718	.197303	.340661	-.173353

SAMPLE CORRELATION MATRIX

		81 D-CUL	82 D-REL	83 D-EDU	84 D-HEA	85 O-CIV	86 IPOSIT	87 INEGAT	88 INEUTR	89 FLOW1	90 OPOSIT
81	D-CUL	1.000000									
82	D-REL	.055954	1.000000								
83	D-EDU	-.032941	.000000	1.000000							
84	D-HEA	-.041428	.067428	.036769	1.000000						
85	D-CIV	-.017963	.189494	.305077	.113994	1.000000					
86	IPOSIT	.143150	.187345	.225239	-.105757	.286234	1.000000				
87	INEGAT	-.064257	.060714	.165420	-.067641	.307332	.119440	1.000000			
88	INEUTR	-.012663	-.007859	.356869	.016277	.355366	.224472	.377576	1.000000		
89	FLOW1	.160202	.116647	.082891	.130096	.055515	.804666	-.488667	-.032769	1.000000	
90	OPOSIT	.148738	.119553	.116709	-.002922	.104605	.010264	.069121	.209031	-.052079	1.000000
91	ONEGAT	.166632	.166535	.057115	-.122979	.013274	.127971	.238291	.184291	-.037912	.233291
92	ONEUTR	.143500	.159386	.146789	-.166814	.132243	.285844	.066525	.186684	-.206698	.137636
93	FLOWOT	-.000296	-.022121	.049455	.096270	.061662	-.076327	-.109108	.031561	-.012501	.649751
94	FLOWIN	.101710	.104716	.133610	.139398	.096382	.767254	-.674817	.063103	.953648	-.040962

SAMPLE CORRELATION MATRIX

		91 ONEGAT	92 ONEUTR	93 FLOWOT	94 FLOWIN
91	ONEGAT	1.000000			
92	ONEUTR	.289420	1.000000		
93	FLOWOT	-.581565	-.091181	1.000000	
94	FLOWIN	.018055	.171215	-.057125	1.000000

Key to Linkage Variables:

H = Home Production
I = Internal Subsystem
O = External Subsystem
D = Dollars
1 = Adults only

2 = Adults and children weighted equally
3 = Adults and children weighted one-half
Posit = Positive flow
Negat = Negative flow
Neut = Neutral flow

APPENDIX C

ADULT QUESTIONNAIRE, FAMILY-

COMMUNITY LINKAGES SURVEY
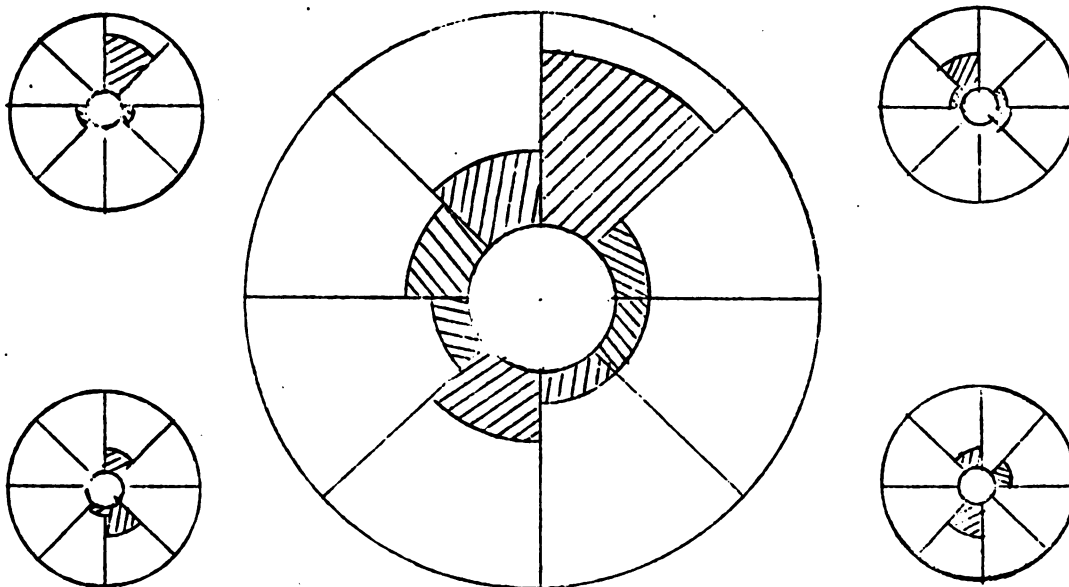
Family #_____

Member_____

In this day and age it is difficult for families to get along without the community. Most of the things you use in the house are made somewhere else and brought into the home through the community, and you use the community for many services.
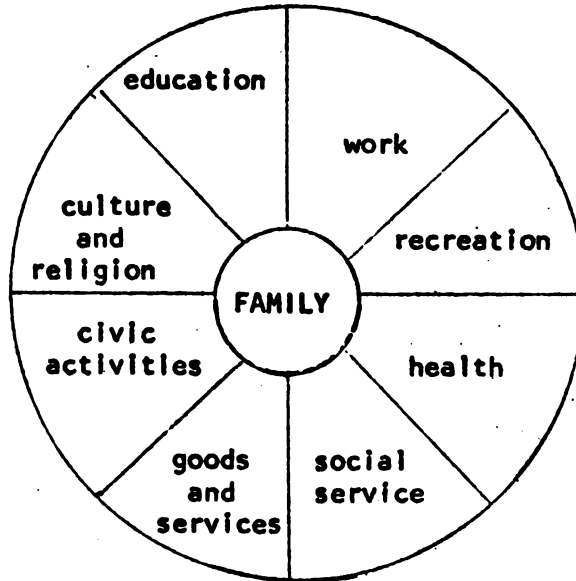
In this study we are asking family members like yourself to tell us how much they use different parts of the community.
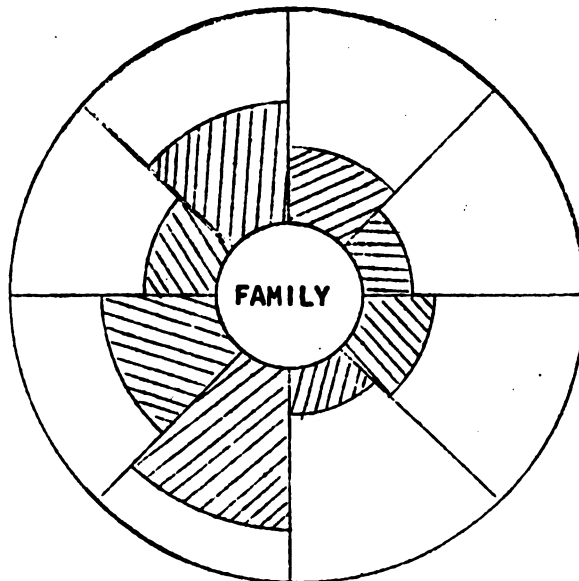
The different ways that individuals use the community will be added together to give a picture of how a family uses the community.

Your family will differ from other families in the community because,

1) You may find you don't need a service or don't belong to an organization

2) You will use facilities in the local community in different ways

3) You may go to other towns or cities for some of the things you need

4) You may make things at home, instead of getting them in the community

So on the following pages you will see the column headings:

Didn't need	obtained in Owosso -Corunna	obtained in another place	provided at home

We expect that most families have a rhythm about what they do. This is especially true when a large part of the day is taken up with going to work or going to school.

For example:

	Weekdays	Weekends
a.m.	work/school/community activities	shopping/church
p.m.	work/school/shopping hobbies	working around house TV hobbies

You have probably established habits about when you shop and for how long. You may even plan around certain programs on TV. So if you can think about the things you do fairly regularly, you will find it rather easy to answer those parts of the questionnaire that concern you. Think about what you did last week:

		weekdays	weekends
How much time did you spend	going grocery shopping?		
	eating out?		
	going to work?		
	going to school?		
	going to a club meeting?		

If there is a fairly regular pattern, multiply the weekly time by 50 to give an estimate for the year. Some usual times are:

2 hours/week = 100 hours/year

3 hours/day, 5 days/week, $8\frac{1}{2}$ months/year = 510 hours/year   (kindergarten)

7 hours/day, 5 days/week, $8\frac{1}{2}$ months/year = 1190 hours/year   (school)

8 hours/day, 5 days/week, 50 weeks/year = 2000 hours/year   (job)

Of course, "last week" will not cover all the things in the community that you sometimes do: such as, going to a state park, the dentist, club meetings, adult education class. Or there are things you have done at home as raising food, making clothes, or having a party.

Therefore, you may find it helpful to think about what may have happened by seasons. For example:

winter	snowmobiling concert/museum remodeling
spring	gardening wedding
summer	camping distribute petitions
fall	political activity food preservation

Some of the estimates for seasonal activity or monthly activity are:

3 hours/twice a month, 10 months/year = 60 hours

24 hours/day, 5 days = 120 hours (camping)

1 hour/3 times = 3 hours (dentist)

What are some things you used the community for that happened only once or twice last year?

winter   summer

spring   fall

In summary: Would you please give us the best guess you can of the time you spent in the community last year. To help you remember the different things, similar activities are grouped together under different sections. A lot of different things are mentioned to help you remember something you may have done 6 months ago. The time you put in the boxes is your best estimate of the number of hours you spent in the community obtaining or providing various goods and services. These hours are to include travel time and telephone time if used. In addition, you put in the boxes the time you spent ordering goods by mail from another place.

For example: If you go into the community to have your hair cut every month and this takes an hour, including travel time, it would amount to 12 hours over a year's time. In addition if you care for it at home by spending one-half hour a week shampooing your hair, you would spend 25 hours over a year's time.

	Didn't need	Hours **YOU** spent last year in obtaining or providing		
		inside Owosso-Corunna	in another place	at home
Personal Care Services (beauty shop, barber, gymnasium)		12		25
Pets and Pet Care	X			

Q. #1 In the list below, please estimate the number of hours you spent last year (from now until last year at this time) in obtaining and providing for a particular group of products or services. You include time in the community and/or time spent at home in supplying similar products (eg. sewing clothes instead of purchasing them, changing the oil in your car instead of going to a service station, preparing meals instead of eating out). It may help to figure from a weekly basis, and then multiply by 50 for the year, then adding or subtracting for seasonal differences.

This part is about goods and services you <u>buy</u> from business-- or make/provide at home instead of buying

Part of Community: <u>BUSINESS</u>	Didn't need	Hours <u>YOU</u> spent last year in obtaining or providing		
		inside Owosso-Corunna	in another place	at home
Automobiles, Trucks				
Snowmobile, motorcycle, camper, bicycle				
Vehicle Maintenance Supplies				
Vehicle Maintenance Services				
Financial Services (loans, stockbroker, financial counselor)				
Reading Materials				
Flowers				
Hobby & Sports Supplies & Services (arts, crafts, photography, fishing)				
Home Office Supplies & Equipment (stationery, typewriter)				
Printing Services				
Pets & Pet Care (grooming, vet, kennel)				
Funeral Home Service				
Rental Lodging (Motel)				
Transportation Service (bus, taxi, chauffeuring)				

This part is about goods and
services you <u>buy</u> from business--
or make/provide at home instead
of buying

Family #_____ .

Member _____ .

Part of Community: BUSINESS	Didn't need	Hours <u>YOU</u> spent last year in obtaining or providing		
		inside Owosso- Corunna	in another place	at home
Musical Instruments, Supplies & Services				
Sound Systems, Supplies & Services				
Food Products				
Meals				
Clothing, Accessories and Fabrics (including dressmaker, tailor)				
Clothing Maintenance (cleaner, laundromat, shoe repair)				
Personal Care Products				
Personal Care Services (beauty shop, barber, gymnasium)				
Child Care Services				
Household Furniture (including furnishings and accessories)				
Household Equipment and Appliances				
Repair Furniture and Appliances				
Home Maintenance Supplies (floor wax, paint, fertilizer, etc.)				
Home Maintenance Services (carpet cleaning, painting, mowing, etc.)				
Home Betterment Supplies (lumber, siding, kitchen cabinets, etc.)				
Home Betterment Services (electrician, carpenter, etc.)				

Family #_____

Member_____

Part of Community:
BUSINESS

	Didn't need	Hours **YOU** spent last year in obtaining or providing		
		inside Owosso-Corunna	in another place	at home
Drugs				
Other: Specify _____				
_____				
_____				

* * * * * * * * * *

One of the more important ties you have with the community is the source of income.

2. Did you have an income-producing job last year?   Yes_____   No_____

   \If no, go to question 12.\

   \If yes, go to question 3.\

   3. What was the title of the job, or jobs? _____

   _____

4. Did you do this work (question 3) from your home?   Yes_____   No_____

   \If no, go to question 6.\

   \If yes, go to question 5.\

   5. How many hours did you work last year? _____

6. Did you do this work (question 3) inside the city limits of Owosso-Corunna?

   Yes_____   No_____

   \If no, go to question 8.\

   \If yes, go to question 7.\

   7. How many hours did you work last year? (include commuting) _____

Family #_____

Member_____

Part of Community:
EMPLOYMENT

8. Did you do this work (question 3) outside the city limits of Owosso-Corunna?

   Yes_____   No_____

   \If no, go to question 11.\

   \If yes, go to question 9.\

   9. Where? _____

   10. How many hours did you work last year? (include commuting)_____

11. What was your income last year from working at the job or jobs described in question 3?   Check one

   _____ 1. less than $2,500
   _____ 2. $2,500 - 4,999
   _____ 3. $5,000 - 9,999
   _____ 4. $10,000 - 14,999
   _____ 5. $15,000 - 19,999
   _____ 6. $20,000 - 24,999
   _____ 7. $25,000 - 29,999
   _____ 8. $30,000 and over

12. Sometimes your income doesn't come from a job, but from past earning of yourself of others. Did you have income from any of the following? Yes_____   No_____

   \If no, go to question 15.\

   \If yes, check those that apply.\

   _____ dividends   _____ inheritance   _____ loans

   _____ social security   _____ pensions   _____ investment

   _____ insurance   _____ rental/royalties   _____ other

13. Did these sources make a difference in the income group checked in question 11?

   Yes _____   No_____

14. \If no, go to question 15.\

   \If yes, check new income level below.\

   _____ 1. less than $2,500
   _____ 2. $2,500 - 4,999
   _____ 3. $5,000 - 9,999
   _____ 4. $10,000 - 14,999
   _____ 5. $15,000 - 19,999
   _____ 6. $20,000 - 24,999
   _____ 7. $25,000 - 29,999
   _____ 8. $30,000 and over

Family #_____

Part of Community:
EMPLOYMENT

Member_____

15. At other times income may be provided by other community sources. Did you have income from any of the following?   Yes_____   No_____

\If no, go to question 18.\

\If yes, check the appropriate space.\

_____ unemployment insurance   _____ food stamps

_____ organizations as church,   _____ school lunch
       volunteer organizations

_____ subsidized housing   _____ social services

_____ ADC   _____ other, specify _____

_____ legal aid   _____

16. Did these sources make a difference in the income checked in question 11 or 14?   Yes_____   No_____

17. \If no, go to question 18.\

\If yes, please check a new income level below.\

_____ 1. less than $2,500

_____ 2. $2,500 - 4,999

_____ 3. $5,000 - 9,999

_____ 4. $10,000 - 14,999

_____ 5. $15,000 - 19,999

_____ 6. $20,000 - 24,999

_____ 7. $25,000 - 29,999

_____ 8. $30,000 and over

Part of Community:
EMPLOYMENT

18. There are some organizations you belong to because of your job. Your membership provides an opportunity to contribute to the community. This may be in time and/or dollars.

   Please estimate as well as you can your contribution over the past year.

   Remember: Please check at least one box for every item.

	Didn't belong to	Hours YOU spent last year		Contributed dollars (amt) last year
		inside Owosso-Corunna	in another community	
Union				
Junior Achievement				
Chamber of Commerce				
Professional Association				
Farm Bureau				
Other (specify) _____				
_____				
_____				

Family #_____

Part of Community:
   RECREATION

Member_____

19. All forms of recreation can be found in the community. In general, activities under recreation have to do with physical activity either as a participant or observer. They are divided into three main categories: 1) those that are fully supported by the people that use them, as spectator sports, country clubs, tennis clubs; 2) those that are publicly owned for the benefit of everyone as city parks, national parks, public golf courses; and 3) those activities provided at home, as swimming pool, roller skating.

   In summary, this section has to do with physically oriented activity. We would like you to estimate hours spent in the different places: from the home to public supported, to private supported. We are leaving out the times you might use the facilities of a neighbor or friend. Thus, if you go horseback riding at a stable, you may put it under private supported if you pay by the hour; under provided at home if it is your own horse; or not at all if you ride at a relative's place in------ the country.

		Hours YOU spent last year		
	Didn't use or belong	Inside Owosso-Corunna	in another place	at home
Private supported: (paying admission or membership fee) such as, miniature golf, pro ball, country club, swim club, bowling league, high school sports				X
Public supported: such as, state park, public tennis courts, campsites, fishing and hunting sites				X
Home centered: such as, ping-pong, shooting baskets, swimming pool		X		
Total time at cottage at another place		X		X

X = box not to be used

Family #_____

Part of Community: Member_____
    CULTURE & RELIGION

20. Recreation doesn't have to be active. When it isn't, the category is usually CULTURAL or EDUCATIONAL. In this study we are grouping together under cultural things such as museums, libraries. In addition, you will find here all those "education" classes you take for enjoyment, i.e. crafts, speed reading. (under EDUCATION on the next page will be the classes that would have to do with getting a degree or improving your job performance.)

    There is a category for dollars contributed, since you may support an organization with money even though you don't spend hours using it.

		Hours YOU spent last year			
	Didn't use or belong	Inside Owosso-Corunna	in another community	at home	Contributed dollars (amt) last year
Private supported: movies, night clubs, concerts, theater, music lessons, county fair				X	X
Public supported: attending museums, art exhibits, library				X	X
nature center, zoo				X	X
little theater, musical groups				X	X
adult education classes for pleasure				X	X
Public supported: volunteering your time to help any of the above with their services or contribution of dollars				X	
Formal/Informal interest groups: garden club, gun club, chess club, judo, etc.					
Home Centered: TV, reading, parties		X	X		X
Religious community: church services, church centered organizations and meetings					
Services: such as weddings and funerals not covered above					

Family #_____

Part of Community:
EDUCATION

Member_____

21. As mentioned on page 13, the part of the community called EDUCATION in limited here to those educational experiences which lead to a degree or improve job performance. Under the formal and informal classifications, the emphasis is on <u>receiving</u> instruction. Under the heading of volunteer the emphasis is on <u>giving instruction</u>.

	Didn't use or belong	Hours <u>YOU</u> spent last year			Contributed dollars (amt) last year
		Inside Owosso-Corunna	In another community	at home	
<u>Formal</u>: <u>Private</u> schools, parochial schools, universities					X
Seminars, short courses					X
<u>Formal</u>: <u>Public</u> schools, night school, public university					X
Seminars, short courses					X
<u>Informal</u>: (<u>receiving</u> <u>instruction</u>) extension service, scouts, "Y"					
<u>Volunteer</u>: (<u>giving</u> <u>instruction</u>) extension service, scouts, 4-H, teacher's aid					
participating in parent-teacher organization (PTA)					
<u>Donations</u> to alumni organizations					

X = box not to be used

Family #_____.

'Part of Community: Member_____
    HEALTH

22. For this category, please remember all the different kinds of health care you received last year, from visits to the doctor or dentist for check-ups, for emergency care or for nursing care. Since the study is about use of community resources, it is only necessary to divide the hours spent between private help, public supported services and the volunteer activity you may have participated in.

| | Didn't use or belong | Hours YOU spent last year | | | Contributed dollars (amt) last year |
		inside Owosso-Corunna	in another community	at home	
Private: doctor, dentist, nursing care, (payment by Blue Shield other insurance, or cash)				X	X
Taking, staying, visiting					
Public: doctor, dentist, nursing care, clinics, (payment by Medicaid, social service)					X
Taking, staying, visiting					
Volunteer: Red Cross gray lady, clinics, "drives"				X	

X = box not to be used

Family #_____

Member_____

Part of Community:
CIVIC

23. The part of the community called CIVIC includes community oriented activity ranging from service clubs to political activity to public services as fire and police protection.

Since you may contribute dollars instead of, or in addition to, time, please list these amounts where appropriate.

		Hours YOU spent last year			
	Didn't use or belong	inside Owosso-Corunna	in another community	at home	Contributed dollars (amt) last year
Community organizations, Service Clubs: Kiwanis, Rotary, Altrusa					
Fraternal organizations: Elks, Masons, Knights of Columbus and Auxilliary					
Other (specify) _____					
Political sphere					
vote					X
attending public hearings, school issues, zoning, candidates					X
partisan, non-partisan activity: distributing petitions, League of Women Voters					
political party					
appointed or elected office					X

X = box not to be used

Family #_____

Part of Community:

CIVIC

Member_____

23. (Continued)

In the protective sphere, include the hours you may have required special service from the police or fire departments, such as reporting a theft, or a fire in your house. If there is public pick-up of trash, or special public works as the repair of road or sewer or water affecting your house, then record the hours you spent in connection with this service.

Under judicial, there are two categories: one is for the occasion when you may be part of the judicial system in jury duty or testifying in court for someone else; the other is when you are using the judicial process for personal business.

		Hours **YOU** spent last year in obtaining or providing		
	Didn't need	in Owosso-Corunna	in another place	at home
Protective Service				
Police				
Fire				
Public Works, Trash Pick-up				
Judicial				
Courts: Jury duty, etc.				
Courts: Personal business				

Family #_____

Member_____

24. As you think about your community, what kinds of things do you feel are missing here that would make it better for you and your family?

rank ___ _____

rank ___ _____

rank ___ _____

rank ___ _____

rank ___ _____

rank ___ _____

rank ___ _____

rank ___ _____

25. Of those things you just listed:

a. Would you please place a 1, 2, 3 by the first three that are most important?

b. Would you place an X by the one that is least important?

26. Sometimes having transportation makes a difference as to what you can do. What ways do you have of getting from here to places you want to go?

_____

27. Do you or your family own an automobile or truck? Yes_____   No_____

28. If yes, how many? _____

29. Do you need to depend on someone else outside the family for a ride?

Yes_____   No_____   Sometimes_____

30. Your sex: Male_____   Female_____

31. Your age at your last birthday?   14 - 17 _____   38 - 46 _____
                                       18 - 25 _____   47 - 65 _____
                                       26 - 30 _____   66 +   _____
                                       31 - 37 _____

32. Last grade completed?

_____ under 7 years of school
_____ 7 - 9 years of school
_____ 10 - 11 years of school (part high school)
_____ High school graduate
_____ 1 - 3 years college (also business schools)
_____ Four-year college graduate (AB, BS, BM)
_____ Professional (MA, MS, MD, Ph.D., and the like)

APPENDIX D

SUMMARY QUESTIONNAIRE, CHILDREN 13

AND UNDER, FAMILY-COMMUNITY

LINKAGES SURVEY

SUMMARY QUESTIONNAIRE, CHILDREN 13 AND UNDER, FAMILY-COMMUNITY LINKAGES SURVEY

Family #_____

FOR HEAD OF HOUSEHOLD

Q. 40. We know that children 13 and under also do things in the community. The most time-consuming of which is going to school. Will you please fill out a separate form for each child 13 and under concerning <u>what he does by himself.</u> (You do not count the time he goes with you on activities you have already mentioned.)

For example: If he goes to the store for you, put that down here; do not list the trip to the store if he is included in a family outing.

Part of Community	Didn't go by himself	Hours This Child Spent Last Year		
		Inside Cwosso- Corunna	in another place	at home
Business				
Employment				
Recreation				
Education				
Culture & Religion				
Health				
Civic				
Welfare				

Q. 41. How does he get where he needs to go? _____

Q. 42. Sex: Male_____ Female_____

Q. 43. Age at last birthday?
        3 & under ____
        4 - 6 ____
        7 - 13 ____

Q. 44. Present grade in school? _____

APPENDIX E

HOUSEHOLD DATA SHEET

HOUSEHOLD DATA SHEET   Family #_____

Member_____

FOR HEAD OF HOUSEHOLD

33. Do you:

_____ Own your house

_____ Rent your house or apartment

_____ Other (specify) _____

34. Is this dwelling a:

_____ house
_____ apartment
_____ mobile home
_____ other

35. How many rooms do you have, not counting bathroom? _____

36. How long has this family lived in this community? _____ years.

37. What is the longest time any one member of the family has lived in this community? _____ years.

38. Does income from other family members change the category for income you checked in Question 17? Yes_____ No_____

39. If Yes, please check the total annual income available for family use.

_____ 1. less than $2,500

_____ 2. $2,500 - 4,999

_____ 3. $5,000 - 9,999

_____ 4. $10,000 - 14,999

_____ 5. $15,000 - 19,999

_____ 6. $20,000 - 24,999

_____ 7. $25,000 - 29,999

_____ 8. $30,000 and over

APPENDIX F

APPOINTMENT FORM FOR FAMILY

APPOINTMENT FORM FOR FAMILY

MICHIGAN STATE UNIVERSITY   East Lansing, Michigan 48823

College of Human Ecology   Department of Family Ecology
Human Ecology Building

FAMILY - COMMUNITY LINKAGES STUDY

Return date_____

Thank you for helping with the study.

We need your response in order to understand the

different ways families use the community. This

information could be useful to planners when

community decisions are made.

Barbara K. Miller
Graduate Assistant

Phone: (517) 355-7671

APPENDIX G

APPOINTMENT FORM FOR INTERVIEWER

APPOINTMENT FORM FOR INTERVIEWER

FAMILY-COMMUNITY LINKAGES SURVEY

Family # _____

Date Left _____

Date/Pick-up _____

Permission to Interview Later   Yes _____   No _____

HOUSEHOLD HEADS:

Husband _____

Wife _____

Other _____

_____

Number in Family: _____   Number Surveyed: _____

18 and over _____   18 and over _____

13 and under _____   13 and under _____

Stage in Family Life Cycle _____

Address: Telephone Number _____

Street or Road _____

City _____

County _____

Assessed Valuation _____

Square Footage of Home _____

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VITA

VITA

Barbara Kenrick Miller, born in New England, seasoned
by the Depression, was graduated, at nineteen, from the Col-
lege of Home Economics at Cornell, at the beginning of peace
after World War II. Following four years as Assistant
County 4-H Club Agent in New York State, she returned to
Graduate School at Cornell for a Master's Degree in Housing
and Design. This was excellent preparation for service as
4-H Club Specialist in Home Improvement for New York State.

Exploration in new areas was facilitated by the one-
year Harvard-Radcliffe Program in Business Administration,
an appropriate introduction to the position of Product
Analyst with Frigidaire in Dayton, Ohio, representing the
homemaker in the Future Planning Department.

Marriage to Donald Merrill Miller, a Californian,
contributed ten years of family experience with the advent
of three children, when the opportunity to return for further
education was presented.

Not only was the College of Human Ecology at Michigan
State University a leader in the study of family decision
making, the selected area of focus, but at the time of
matriculation, was exploring and developing the ecological
approach to the study of the family system. Not only did

this approach harmonize the writer's eclectic experience, but provided the long-sought constructs on which to build a teaching and research experience. Beginnings were made in these areas as the writer worked through, with the instructor, the development and presentation of a course required of all freshmen to lay a foundation in the ecological approach; and discovered, through the study reported here, the craftsmanship required as research design leads into uncharted relationships.