

COMPARISONS OF SOCIAL WELL-BEING COMPONENTS AND
PERCEIVED QUALITY OF LIFE INDICATORS
IN RURAL KANSAS COUNTIES

by

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Chapter 1

INTRODUCTION

Despite evidence that social conditions are unevenly distributed in the United States, geographers only recently have shown interest in the identification, mapping, and explanation of locational variations in these conditions. Much of the initial trailblazing in this area has been done by economists and sociologists who, lacking the experience or awareness of the importance of the locational dimension, have directed their research toward time-series analysis rather than that of areal variation. The development of social indicators, consequently, has placed emphasis on matters of chronological change almost exclusive of locational implication.

The geographer's entrance into the social indicators movement is not exceptional. Public and academic concern about social inequities have become more vocal and insistent within the past two decades. Daily media coverage of deprivation and injustice have increasingly reinforced the fear that the "good life" is not within the immediate grasp of all citizens. Americans are discovering an ironic relationship between their growing material wealth and power and a parallel growing discontent with social conditions.

Their demands for social change have placed new pressures on elected officials who often have little technical knowledge of the complex interrelationships between social variables. These officials have turned to the academic community for some acceptable methodology with which social planning can be developed. The response to this plea has been incomplete and inadequate.

The Need for Social Indicators

There is a general need for the development of a set of social indicators, an accepted collection of variables, which would adequately and accurately describe levels of social welfare. This development is essential to attempt four tasks basic to social research: to establish a set of measures which would parallel the traditional economic indicators and thus provide a clearer understanding of situations which are not purely economic in nature; to determine if and where social conditions are improving or deteriorating; to provide the public administrator with the information and advice he needs to make efficient social policy decisions; and, to evaluate present public policy and its contribution to society.

There is a need for a set of indicators which would measure changes in social conditions, much as the traditional indicators monitor fluctuations in the nation's economic health. If social conditions are to be measured,

then indicators must be established which describe those conditions. For a long time, economic indicators have been employed to monitor social conditions because such indicators are easily available in data sources, are expressed in a common language (monetary units), and because there is no established method to evaluate social conditions which is as precise and as accepted as the use of economic indicators in evaluating economic conditions.

Such a set of social indicators would be descriptive. It would provide the social scientist a tool with which he could distinguish the variations in levels of social welfare from one area to another and to determine whether social conditions are changing. There is general recognition of this need: "For many of the important topics on which social critics blithely pass judgement, and on which policies are made, there are no yardsticks by which to know if things are getting better or worse."¹ The importance and application of description would, of course, vary with the intent of the researcher, but the geographer who could describe locational variation in the levels of social well-being or quality of life, and could record these variations on a map, would have the basis for geographical analysis. Having mapped the conditions, the geographer could then begin to distinguish relationships between variables (e.g., availability of medical services and health levels) and predict changes over time.

A benefit which could be realized from the availability of a set of social indicators is the advising public administrators in policy decisions. At whatever level of government he functions, the administrator is faced with a bewildering array of social problems: crime, poverty of both the spirit and the pocketbook, poor health, and illiteracy. The public pressure for him to "do something" to alleviate such problems might force him to attempt social planning even though he may have only an intuitive grasp of the interrelationships between social variables. If the question were one of economic planning, he could rely on the analysis of a consultant trained to deal with traditional economic variables. The development of an industrial park or the enticement of new industry, for example, would be discussed in terms of estimated costs and predicted benefits. But there is no such definite approach to questions of social well-being.

A fourth potential benefit of social indicators is policy evaluation. As mentioned before, there are at present no accurate measures which the researcher can employ to determine if conditions are getting better or worse; it is difficult, then, to estimate the impact and value of previous social policy decisions. "It is generally agreed that development would bring improvement in the conditions in which people live, yet the most obvious conclusion to be drawn from this statement has yet to be put into practice:

namely, that the final targets of development in planning would be expressed in terms of welfare indicators."² There must then be a common language, an accepted set of variables, with which the consequences of social action can be discussed and understood by researchers in diverse fields.

Questions have been raised as to whether G.N.P., per capita income, or other strictly economic indicators are sufficient to describe social conditions.³ The problem, though, is: If not economic indicators, then what kind of data should be employed? It is necessary to establish a basic source of social information from which researchers could draw data appropriate to their different investigations. At this time, no one, complete source of social data is available below the national level.

Researchers cannot expect a set of social indicators to adequately answer the demands of all of these tasks. Very little, however, can be attempted in these areas unless an initial set of common measures is developed. Basic requirements must be agreed upon if social reporting is to have utility, and there must be consensus in indicator selection, a reliable data-gathering system, and a vehicle for immediate reporting of data on a continuous basis.

Consideration of Scale and Setting

Evaluation of the four general benefits of social indicators research reveals an inherent need for a geographical perspective, not just for practical organization and

presentation of data but for regional analysis and subsequent administrative action. Large areas such as states are impractical for treatment, but it is possible to isolate and evaluate problems in smaller units.

Scale is then perhaps the aspect most deserving of the geographer's attention. Much of the research which has been attempted in this field has been directed at the national level, even though statistical aggregation can mask individual departures or extremes. Aggregation at the national scale obscures important regional variations as well. The most distinctive variations exist between urban and less urbanized areas. The latter areas can be characterized by lower incomes, lack of economic diversity, and an older age structure. While the majority of studies of social well-being have either excluded rural areas⁴ or have not disaggregated them from larger entities⁵ there has been a lack of studies concentrating on rural social conditions or attempted at larger scales, e.g., at the rural county level. Most researchers would agree that there are differences in the levels of social well-being in rural Kansas and New York, such as health, education, and income; but unless they recognize the importance of the locational dimension and incorporate it into their investigations, little of practical value can be learned. Research is needed at more manageable scales; for example, study at the city and county levels would be of more immediate value to social planners and public administra-

tors than study at the national level. Counties were chosen as the unit of observation for this study because they have not received close scrutiny before and because they are practical units for effecting social change.

Setting is also an essential element in social indicators research. Investigations must be addressed to a specific problem area (rural, suburban, urban) before study can begin. Social well-being levels differ not only between small and large areal scales, but among settings chosen at each scale. Rural counties in the South or in Appalachia, for examples, would not project the same patterns of social well-being as would those of the Midwest; Kansas' rural counties experience poverty and lack of material wealth by urban standards, but they are not as deprived as the aforementioned regions. Such distinctions make research at larger scales and in specific settings potentially valuable to the social scientist.

Variable Indices of Social Conditions

The choice of variables used in studies of social well-being is influenced by data availability according to setting and scale. There is some agreement in the literature concerning general subject areas (see Table 1.1); but choice of specific variables within those general subject areas is governed by the information available to the investigator and appropriate to his study's scale and setting. Data decrease in availability as the units of observation increase in scale.

TABLE 1.1

GENERAL CRITERIA OF SOCIAL WELL-BEING

- I. INCOME, WEALTH, AND EMPLOYMENT
 - i. Income and wealth
 - ii. Employment status
 - iii. Income supplements
 - II. THE LIVING ENVIRONMENT
 - i. Housing
 - ii. The neighborhood
 - iii. The physical environment
 - III. HEALTH
 - i. Physical Health
 - ii. Mental Health
 - IV. EDUCATION
 - i. Achievement
 - ii. Duration and quality
 - V. SOCIAL ORDER (OR DISINTEGRATION)
 - i. Personal pathologies
 - ii. Family breakdown
 - iii. Crime and delinquency
 - iv. Public order and safety
 - VI. SOCIAL BELONGING (ALIENATION AND PARTICIPATION)
 - i. Democratic participation
 - ii. Criminal justice
 - iii. Segregation
 - VII. RECREATION AND LEISURE
 - i. Recreation facilities
 - ii. Culture and the arts
 - iii. Leisure available
-

Source: Smith, 1973, page 70

The major reason given for the very few studies done on a scale larger than that of the state or city level is lack of data, or at least a lack of easily collected data.⁶

Attempts to develop a most-needed systemic appraisal of social data have, for the most part, been restricted to the national scale. The most ambitious of these attempts has been prepared by the U.S. Department of Commerce.⁷ Although it incorporates the best thinking in indicator research, its data reflect the nation as a whole; there is no way to use such a source effectively to distinguish regional variations. Unfortunately, no complete source exists for smaller units of observation. It is this lack of readily available data which discourages studies for areas smaller than the S.M.S.A. or the state levels. Collection of data which can be universally applied at the county level is an arduous task, but if research is to indicate more than mere general state patterns, then the county or district scale must be considered.

Deciding on the territorial division of some larger area usually involves a compromise between the ideal from a conceptual point of view and what is practicable from the point of view of data availability. At the macro level, the state is the only practicable unit for compiling data to determine broad regional trends across the entire national territory. Ideally, groups of relatively homogeneous counties representing the social equivalent of State Economic Areas would be preferable, but data could not at present be compiled for such a system.⁸

SPECIFIC INVOLVEMENT OF GEOGRAPHERS

The geographer, by nature of his discipline, has a special interest in the areal arrangement of human activity. Assuming that social conditions can be identified and measured, and that they do vary from one location to another, the geographer is faced with a classic problem, i.e., describing and investigating the locational variation of a given phenomenon. The subject matter differs greatly from that of the traditional physical geographer and somewhat from that of contemporary social geographers, but it involves the same basic concepts of identification, mapping, and analysis of locational patterns on the landscape. Some geographers have already ventured into this neglected field. In his book, The Geography of Social Well-Being in the United States, David Smith outlined the history of the social indicators movement with respect to areal classification and the regional approach. Although general interest in this subject has been increasing since the 1960's, Smith was the first geographer to openly stake a claim for the discipline. His own research attempts have contributed to discussions on possible ways to operationalize the social well-being concept. His work, along with other major efforts, will be reviewed in Chapter 2.

While Smith was one of the first to address himself to social well-being as a whole, other social geographers had contributed research which, though limited in scope, reflected

special aspects of social problems. In an earlier effort, Harries examined variation in crime and sentencing and attempted to analyze spatial patterns of this phenomenon in the United States.⁹ Peet questioned why geographers have been reluctant to study contemporary, provocative issues, such as the problem of hunger in the United States, a topic on which he has written.¹⁰ Morrill and Wohlenberg presented a work in the same series as Smith's social well-being volume, in which they compiled a comprehensive report on the geographical dimensions of want, hunger, and deprivation in the United States.¹¹ Harvey published articles on social justice and spatial systems presenting arguments for a new regional distribution based upon social justice rather than on economic efficiency.¹² His was perhaps the most provoking of the geographical essays on social welfare which came out of the late sixties. He argued for abandonment of the more familiar economic indicators in favor of indicators of social good, social justice, and social efficiency. He asked, in a more limited context, what students of social well-being still ask: Is there not a better way to measure social conditions than by variables such as per capita income or G.N.P.?

Those cited above are a few of the thoughtful essays produced by geographers regarding social conditions. That some of the wiser and more articulate of our circle have bent their efforts toward these ends is evidence of the discipline's shouldering of social responsibility.

NATURE OF THE PROBLEM

Appreciation of the present research is in great part dependent upon the understanding of two elements: the various nomenclature used throughout the study and the two-step modelling process used to conduct the research. This latter process will be couched in general terms in this section; the more specific discussion of the scale and setting selected for this study--the rural Kansas county--will follow in a later discussion.

Nomenclature

One major problem which continually surfaces in social indicator research is that of terminology. While expressions such as "social well-being" and "quality of life" are often used interchangeably, their synonymity has been questioned.¹³ Smith suggests that social well-being refers to an objective list of indicators for some social aggregate (median value of year-round housing, hospital beds per one thousand persons, etc.) while quality of life refers to a more personal expression of social satisfaction (e.g., responses to a survey). This latter sentiment has been carried to the extreme by Stagner, who prefers movement away from aggregated statistical data to indicators based solely upon perceived satisfaction levels of individuals.

That there is a distinction between objective measures for a social aggregate and perceived indicators is commonly

recognized, but the various titles employed interchangeably in research suggest a lack of agreement in terminology. Smith and Wilson completed similar studies using similar indicators and methodology, yet Smith titled his work Geography of Social Well-Being in the United States and Wilson titled his work Quality of Life in the United States. Perhaps the most convenient way to overcome this confusion would be for the researcher to specify what it is that he wishes to investigate and relate this definition to those used in similar, earlier studies. For the purpose of this research "social well-being" will refer to the state of the social conditions as measured with objective data for a social aggregate; "quality of life" will then refer to the expression of satisfaction with those conditions. The latter implies that areas with positive "objective" indicators may be perceived quite differently by individuals living in that unit, and the reverse may also be true, i.e., ignorance of inadequate conditions may be influenced by the bucolic imagery held by rural residents.

Modelling Process

The study of both perceived quality of life and social well-being components at more manageable scales is essential to the geographical analysis of social conditions. The covering hypothesis of this research is that social well-being components (while themselves not congruent at different scales) are not congruent with perceived quality of life

factors at any scale. Inherent in this statement is a two-step modelling process: first, to establish social well-being components for these rural Kansas counties and contrast these with those from earlier studies conducted at different scales and settings but using similar variables and methodology. Second, a survey whose questions would be based upon the dimensions elicited from the component analysis would be administered to a representative sample of the counties' populations to determine the perceptions concerning these dimensions. The data gained from the survey would then parallel the social well-being components and a comparison of the two could be made.

METHODOLOGY

Conceptual considerations other than nomenclature which are a necessary precedent to operationalization involve scale and variable choice. Decisions concerning these two elements can greatly influence the ultimate outcome of the research effort.

Scale

Scale, discussed before, is a consideration which has considerable importance in geographical inquiry. Aggregated statistics for a state or a country fail to distinguish areal extremes and can, then, conceal variations in social conditions on the landscape. If social action is an eventual output of a well-being study, then comprehensive data must

be supplied for realistically manageable levels, such as a rural county. The county is the smallest unit for which universally adequate data can be collected. In this research, sixty-five Kansas counties with small population centers and no major institutions were selected as the units of observation.

Variable Choice

Variable choice consequent to scale selection is the second important methodological decision which must be made. An indicator insinuates some condition; a variable directly measures some aspect of that indicator, reflecting to some degree the nature of the less tangible entity. A social condition such as "health", for example, cannot be measured directly, but variables relating to a health dimension-- infant mortality, cancer deaths, the availability of medical services--can be directly measured. The problem for researchers lies in the determination of which aspects of social conditions can be measured by which indicators. Smith combed the existing literature to compile the list of general criteria presented in Table 1.1. The variables in this research are discussed with regard to this classification in Chapter 3.

Specific Operationalization

Fifty variables were chosen according to specific data requirements, and sixty-five counties were selected according to "rural" criteria. Principal components analysis was then

applied to reduce the social well-being variables to a set of descriptive components (dimensions or clusters of related variables). The decision to use principal components analysis was influenced by two interrelated considerations: efficiency and replication. Since it was the most efficient method of handling a large group of observational units, principal components analysis was thought to be the most appropriate for a study of this size. The decision was also influenced by the method's presence in previous studies, as exact replication involved mirroring the methodology as well as the variables chosen.

After component scores for the social well-being variables were obtained, a map was drawn to represent each component in order to exhibit areal distributions; this aided in labeling the components. Comparison was then made between components obtained at the rural Kansas county level and those of previous studies.

Using the social well-being factors obtained in the first step of the research process, a survey questioning perceived quality of life was developed with the survey questions paralleling the well-being components. The survey was administered to 1,000 persons in 10 sample counties (the survey execution and analysis is the subject of Chapter 4). Quality of life and social well-being dimensions were then compared to assess their congruency, and thus test the covering hypothesis. Based on this assessment, implications for planning, development, and policy are reviewed.

JUSTIFICATION

Social conditions vary over space and so are justifiable of interest to the geographer. The locational dimension of social indicators has been neglected since many of the earlier researchers had little or no geographical training. But, as the subject lends itself to locational analysis, a few geographers have begun to view social well-being as deserving of research. Precedent for social well-being research has been given in this chapter.

An accurate graphic representation (description) of areal variation in social conditions is essential for fruitful planning efforts. Since little administrative action is taken on social issues at the national level, researchers must be able to deal effectively with the smaller areas under consideration. On a more immediate level, this research will also provide a needed geographically-oriented social profile of rural Kansas. This research will show that social well-being and perceived quality of life components can be distinguished at a treatable level, the rural county.

TEXT ORGANIZATION

Chapter 1 has been a brief introduction to acquaint the reader with some of the history and concepts involved in the social indicators movement. The following chapter will deal with the social indicators literature to date, paying special

attention to actual research attempted.

Chapter 3 contains a discussion of the study's principal component analysis and the resultant social well-being variables. The chapter contains a brief comment on this type of analysis as well as treatment of the components obtained.

The fourth chapter presents the results of a survey whose questions were based upon the social well-being components determined in the third chapter. The results are used to profile perceived life quality in the representative counties.

The fifth chapter compares the two types of components--both social well-being and quality of life--to test their congruency. The final chapter will discuss the research results in light of potential usefulness in subsequent inquiry and in social planning.

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Chapter 2

ANTECEDENTS IN THE LITERATURE

The 1960's witnessed a growing popular interest in "the other America"¹--the less advantaged, less affluent sector of society--and in the disparity between technical capability and actual accomplishment. The "paradox of affluence" of which Lui wrote²--the discontent with social conditions which grew even as our society was experiencing increased advancement in technology and material wealth--became the banner under which many social researchers rallied and for which many studies received funding. Their general common goal was measurement of the social well-being of society.

The initial investigations into this field revealed that "poverty" was a much more inclusive term than had been revealed by the use of just economic indicators. The lack of material wealth was only one form of poverty; social injustice, lack of opportunity in education and employment, discrimination because of age, sex, or race were also elements which could fall under that general heading. The Constitutional guarantee to "promote the general welfare"--a legislative basis for social planning--was a promise not realized by many members of this society.

The three questions essential to social indicators research are: a)Where are we going? i.e., what is the

direction of social change? b) Where do we want to be at some future time? and, c) How do we get from our present social condition to that future?³ Despite the many research attempts, there has been no effective system developed which will adequately respond to each of these questions. The lack of consensus on what to measure, how to measure it, and how to interpret that measurement for social planning efforts are basic conceptual problem areas. The following chapter will explore major areas of concern to social indicator research and give a history of some antecedents in the literature.

MAJOR AREAS OF CONCERN

There are two basic areas of concern in social indicators research: problems with fundamental definitions and the opposition of some scholars who believe that such research is operationally impossible or philosophically repulsive.

What are Social Indicators?

According to Sawhill, "Social indicators are quantitative measures of social conditions designed to guide choices at several levels of decision-making."⁴ The statement, while vague as to specific operationalization, suggests some characteristics of social indicators. They are measurable units, distinct phenomena to which some yardsticks can be applied. They reflect aspects of social conditions. They can be of use in social planning. This viewpoint has not found consensus in the literature. It is, rather, the desired goal of the

movement rather than the actual state of the art.

An indicator, by definition, "indicates" or insinuates something. A social indicator, then, should insinuate aspects of social conditions, as body temperature insinuates something about one's health. But, unlike temperature or respiration, social statistics are not so definite a measure of the social health of a nation. There is no one statistic which will represent each of the criteria areas outlined by Smith (see Table 1.1). Numerous surrogates must be employed which together will insinuate the larger dimension or social condition. Choice of variables then becomes a critical decision in the development of social indicators. The unfortunate aspect of social reporting is that variables are not universally available at various scales.

Opposition to Social Indicators

There are two schools of thought opposed to the social indicators movement and to measurement of the quality of life in particular: those who believe that it cannot be done and those who think that it should not be done.⁶ Supporters of the first of these believe that it is impossible to reach even some of the goals set for such research. The reasons given concern the practical aspects of data-gathering. Some contend that no comprehensive data source exists, thus it is impossible to initiate even the most fundamental of investigations. Others, as suggested in the previous chapter,

point to the confusion in terminology as a major initial obstacle to study; if researchers have no common language for their concepts, how then can they hope to find consensus on more complex issues such as variable choice or methodology? This need for common ground becomes especially crucial in integrating multi-disciplinary efforts.

Another objection of this first school is in quantification of well-being.⁷ The standards of minimum wealth, comfort or opportunity set by the researcher may differ with those of various sectors of society, or with different regional groups. The possession of a college degree, an expensive home, or even an automobile may not reflect satisfaction with one's lifestyle; nor, conversely, would the lack of material goods necessarily indicate dissatisfaction. Without some primary data on satisfaction levels equivalent to that from census or similar data, research into social conditions will present incomplete pictures of the social landscape.

The second school opposed to this type of research is based on a belief that such research is not only undesirable; it is potentially harmful:

There is no general agreement on human values. But the people who frame the questions about society and plan the future can easily, and unconsciously, inject their own values into the answers they receive...The danger is that government and corporate elites will monopolize the business of question-asking, and so manipulate the attitudes of the society they are pretending to serve as disinterested technicians.⁸

Social planning in the hands of statistical mechanics

or dishonest administrators is the greatest potential threat from social indicators research. There is no reply to make to this except that some form of social legislation will be attempted whether or not a comprehensive set of indicators is ever developed; officials will respond to public pressure for social improvement whether or not they have the ability to make an intelligent decision. No provision will guard against dishonest or power-seeking administrators unless it be an informed, alert public.

A related fear concerns the invasion of privacy which would be a necessary by-product of social reporting.⁹ There is no way to avoid a more complete revelation of personal lifestyles, habits, interactions if a comprehensive census of quality of life is provided. This obstacle may be insurmountable as Americans have traditionally resented governmental intrusion into their lives, and have traditionally resented efforts by the federal government to monitor or manipulate their lives. This is perhaps the most frustrating paradox of the study of social conditions and social planning: to improve social conditions, planners may endanger personal freedom.

THE HISTORY OF THE MOVEMENT

One of the earliest efforts to quantify quality of life was Your City by E.L. Thorndike in 1939.¹⁰ This was a forgotten forerunner of contemporary efforts, and perhaps the first to attempt urban quality of life comparisons.

He used 310 cities with populations over 30,000 in 1930 as his units of observation; he chose 37 variables "which reasonable persons will regard as significant for goodness of life for good people." He employed many of the same non-economic variables used later in studies such as Smith's, variables such as mortality rates, V.D. rates, expenditures for cultural life, to establish which cities were "best", "good", "poor", or "worst". The results indicated the "worst" areas to be Southern cities, El Paso, and Lewiston, Maine. The "best" cities were suburbs around New York and New Jersey, Colorado Springs, Santa Barbara, Los Angeles, and San Francisco.

To assess "errors in judgement" about their cities, Thorndike interviewed city fathers, religious and business leaders, and the most prominent communities personages about social conditions in their communities. He found that they did not know much about the social conditions of their area save those touching them or their peers.

Thorndike's was a remarkable study in its avoidance of the economic indicators which became so popular in socio-economic geography, and in its recognition of both well-being and perception data as essential to studying the quality of urban life.

This study was followed by a report from President Hoover's Committee on Social Trends. This report, Recent Social Trends in the United States,¹¹ had been born in the Depression and

it reflected a concern with establishing some method to monitor social change.

These two were followed by a long gap in the study of life quality. The 1960's saw a rebirth of interest in this area, and generated a number of serious efforts which, while they did not attempt actual research, wrestled with the conceptual problems inherent in social reporting.

Gross¹² produced one of the first of these efforts. It was a preliminary conceptual development of social systems accounting, an important first because he called for national social statistics reporting and because he cautioned others about the hazards of employing economic data to describe social conditions.

Raymond Bauer¹³ also published a major contribution in 1966, Social Indicators, which was to become a primer for social researchers. It was a "state of the art" report as well as a source of new ideas, new challenges. This book, perhaps more than any other, outlined the task facing those who would seek some methodology for understanding what elements defined the social state of the nation. Social Indicators was the benchmark piece for the indicators movement.

The next significant piece was Indicators of Social Change by Eleanor Sheldon and Wirbert Moore.¹⁴ The editors' major concern was the definition of social change, which they discussed in five segments: demographic base and shifts, major structural components, distributive features, aggregative features, and the definition of "welfare".

The Johnson years, with the Great Society fervor, produced Toward a Social Report.¹⁵ It was a first practical attempt to establish a set of indicators which the government agencies could use to monitor changes in society. Seven criteria areas were suggested in this small effort: Health and Illness, Social Mobility, Our Physical Environment, Income and Poverty, Public Order and Safety, Learning, and Science and Art. Far more comprehensive than the Hoover report, this study established federal guidelines for watching society evolve.

In 1968, Malcolm Lewis made one of the initial attempts by geographers to describe life quality in "Levels of Living in the Northeast United States c. 1960". This study was conducted at the county level although no distinction was made between urban and non-urban units of observation. His general indicator areas were: immigration, education, employment, housing, communication, political awareness, health, and family stability; these were defined by twelve variables, a limited number of surrogates to represent such a large number of areas. Three hundred ninety-seven counties were scored from one (best) to 397 (worst) on the basis of the twelve variables. The resulting "high points" were Boston, New York City, Newark, Philadelphia, with Nantucket, Barnstable, and Washington, D.C. singled out as special cases. This was a very important geographical study, not only for its results but for the effort made to establish

some pattern of social characteristics at the county level. Unfortunately, it passed relatively unmentioned in geographical literature on social well-being.

Wilson's state quality of life appraisal¹⁷ (already discussed in Chapter 1) was the forerunner of Smith's Social Well-Being in the United States. Although he was not a geographer, Wilson did provide some significant state patterns in social well-being.

A major effort was made by Coughlin in 1970,¹⁸ in a study of 101 S.M.S.A.s to assess "goal attainment areas." He used sixty variables which measured output rather than input; e.g., infant survival rate rather than infant mortality. He employed factor analysis to discern dimensions of goal attainment. Coughlin found income indicators to be the best single measures of the extent to which metropolitan social goals are obtained.

Terleckyj attempted development of a system of social indicators based on inputs and outputs, too: "goal output indicators" were defined by contributory activity variables (inputs). The weakness of this study lay in the inability to define exactly how much of which activities makes a "social output." Conceptually, such an approach is impossible; its attempt to parallel economic and social processes reflects the wish of many social scientists to find a methodology as elegant and as directly-available as the traditional economic indicators.

Chapin's²⁰ work took a different perspective on life quality: it suggested that perceived life quality could be established by studying how people use their free time. Chapin limited his hypothesis to study of the opportunities for and time allotted to various leisure-time activities. The entire study was based upon this limited criteria with little consideration of such factors as fear of crime, dislike for urban crowding and the desire to exchange leisure time for economic gain. In effect, his study said little about quality of life as a whole; it merely studied the leisure-time activity patterns of urbanites.

Thomas McVeigh's²¹ bibliography, published in 1971, is the best contemporary summary of research efforts. Although the author attempted no serious conceptual statement of his own, the annotated bibliography provides social scientists with a comprehensive guide to social indicators literature.

The next two major studies, those by Smith²² and Grey²³ were already discussed in Chapter 1. They are the most sophisticated of Contemporary researches. Although they went relatively unnoticed by the public, they had an impact on one study which did win some notice in the national news-- a city quality of life comparison by Beon Chieh Lui. The author chose 120 indicators which he felt reflected "economic, political, environmental, and social goal concerns." Using 234 S.M.S.A.s as his units of observation, he computed

"Z" values which he classified into five categories; these categories went from excellent to substandard. The urban centers were then evaluated and listed according to their rankings.

These are, to date, the most important publications in the social indicators movement. The literature promises many research possibilities in itself; e.g., the comparison of different disciplinary approaches to social conditions or the evaluation of the potential hazards of a national system of social reporting.

Review of the existing literature suggests, not only the potential of social indicator research, but also the need for detailed studies at scales and settings more appropriate for planning efforts. The benefit of such studies would be more complete descriptions of local variations in social conditions and a more comprehensive, more accurate data source from which social planners could draw needed information. The present research, a study of social well-being and life quality components in rural Kansas counties, is an attempt to provide one such detailed description.

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Chapter 3

DIMENSIONS OF SOCIAL WELL-BEING

The first of the two-step process of comparing social well-being components with those for quality of life was the determination of the former. The intent was to replicate earlier social well-being research as closely as possible at a scale and setting not before considered.

The scale specified for this study was the Kansas county; the setting was rural. The reasons for such distinctions were these: a) since previous studies of social well-being have been conducted at smaller scales, such as the S.M.S.A. and state levels, there is a need to see what types of resultant components appear at larger scales when the same methodology is replicated; b) the studies which have been attempted at the county levels have for the most part ignored the element of setting. To indiscriminantly regard metropolitan and non-metropolitan counties as undifferentiated in a research effort is to ignore the effects of statistical aggregation which may cloak the more extreme values for either group and therefore obscure much of what might be learned from the data.

Non-rural and special-case counties were eliminated to control the nature of the population under question. Special-

case counties tend to attract interaction with larger cities and more populous counties, influencing the personality of the area. Counties omitted from the study are shown in Figure 3.1. Counties with population centers greater than 15,000 were eliminated, as well as those which have educational or military institutions or regional mental health centers. The sixty-five counties which remain are listed in Table 3.1. The average per capita income in these counties varies from \$2,094 to \$3,214; and the largest population center in each county varies from 1,000 to about 15,000.

REPLICATION CONSIDERATIONS

If the study is to parallel earlier efforts, variables have to conform to previous studies as closely as possible. A list of seven commonly agreed upon indicator areas was compiled earlier from the literature (see Table 1.1). The variables used in this study were based upon Smith's list. Some deviations were necessary to compensate for the changes in scale and setting from earlier research and for limitations imposed by data availability. For example, the number of scientists in the population and prime contracts for military research were not appropriate to the rural Kansas county. Data such as environmental quality indices were not universally available for individual rural counties. Hence, some deletions and substitutions were necessary. The resulting list is as complete as readily available information

FIGURE 3.1

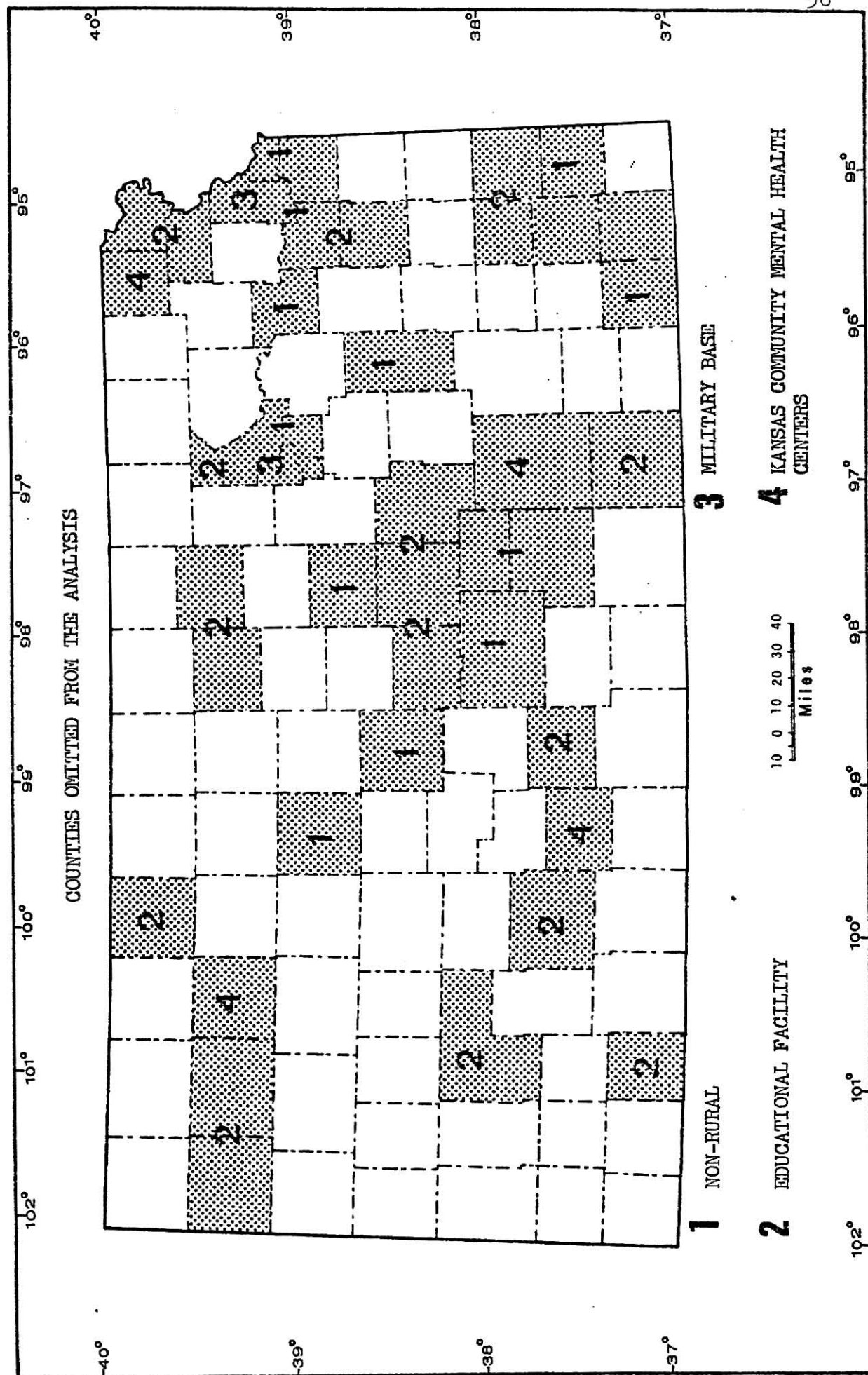


TABLE 3.1

LIST OF COUNTIES SELECTED

1. Anderson	34. Logan
2. Barber	35. Marshall
3. Chase	36. Meade
4. Chataqua	37. Miami
5. Cherokee	38. Morris
6. Cheyenne	39. Morton
7. Clark	40. Nemaha
8. Clay	41. Ness
9. Coffey	42. Osage
10. Commanche	43. Osbourne
11. Decatur	44. Ottawa
12. Dickinson	45. Pawnee
13. Edwards	46. Phillips
14. Elk	47. Pottawatomie
15. Ellsworth	48. Rawlins
16. Cove	49. Republic
17. Graham	50. Rooks
18. Grant	51. Rush
19. Gray	52. Russell
20. Greeley	53. Scott
21. Greenwood	54. Smith
22. Hamilton	55. Stafford
23. Harper	56. Stanton
24. Haskell	57. Stevens
25. Hodgeman	58. Sumner
26. Jackson	59. Trego
27. Jefferson	60. Wabaunsee
28. Jewell	61. Wallace
29. Kearny	62. Washington
30. Kingman	63. Wichita
31. Lane	64. Wilson
32. Lincoln	65. Woodson
33. Linn	

A map of Kansas counties is given in Appendix I.

sources allowed. What follows is a discussion of how the variables used in the study correspond to Smith's seven general indicator areas and, therefore, how they are in accordance with previous research.

Variable Choice

The following is a discussion of the variables chosen for this research under the general criteria areas set by Smith. The variable number which appears in parentheses after the variable name corresponds to its number in the Appendices.

Variables used to differentiate income under "Income, Wealth, and Employment" were per capita income (28) and the percentage of families earning under \$3,000 (29). Employment status was represented by the next three variables: percentage of civilian labor force unemployed (30), county public assistance to the aged (45), and county public assistance to dependent children (46). Income has traditionally been regarded as a major source of personal satisfaction.¹ It was one of the goals of this research to assess how much influence this indicator had on one's quality of life perception.

Smith's "The Living Environment" was concerned primarily with the immediate physical environment, and the variables selected for this general area reflected this. Data on the monetary worth of housing (10), housing occupance density (6), year-round housing occupied by the owner, i.e., not rented, (7), and the percentage of year-round housing with all plumbing

facilities (8), and heating (9), mirror what Smith and others used in previous studies.

"Health" surrogates used in this research measured access to medical care (11, 12, 13, 15) in the form of how many doctors, dentists, health care workers, and hospital beds were available to every one-thousand citizens. The physical consequences of health care availability were obtained through infant mortality (16), the percentage of deaths due to infection and parasites, other than Venereal Disease (17), and the percentage of deaths which were attributed to cancer (18). Mental health statistics are not included here because of lack of universally available data for the rural counties.

In the area of "Education," surrogates were difficult to find at the rural county level. There was no precise way to measure the quality of students turned out by the schools, but there were variables which describe educational opportunities available. These variables include the funds allocated by the county to educate grade and high school students (5) reflecting that county's willingness to support educational facilities. The student-teacher ratio (2) indicates the potential for personal guidance existing for the student, although this may not be a valid surrogate for teaching quality. Educational achievement was measured by four variables: median school years completed for persons over 25 (1), persons over 25 with 4 years of high school (49), persons over 25 with 4 or more years of college (50), and the percentage

of high school graduates (3). Lack of achievement was measured by percentage of high school students who "dropped out" (4). The opportunities existing for continuing education were represented by literature access other than the news media: library adult books and periodicals per capita (42), and library patron circulation per capita (44). There were no direct measures available at this level for illiteracy, quality of education received, or for the effect of educational opportunities on a person's perceived quality of life.

Variables which fall under "Social Disorganization" assumed three shapes: personal pathology, family disorganization, and public order and safety. Personal pathology surrogates were: the percent of deaths due to suicide (19), and induced abortions per 1,000 population (20). Family disorganization variables included the divorce rate (25), the percentage of white families with both husband and wife present (47), and the percentage of Black families with both the husband and wife present (48). Data regarded as descriptive of public safety and order were the percentage of deaths attributable to auto accidents (22), the percent of violent crimes per 1,000 population (23), the percentage of non-violent crimes per 1,000 population (24), and the county per capita civil defense expenditures (26).

"Social Belonging" was rather an ambiguous heading, hoping to reflect some sense of community in the county and the communications opportunities open to its citizens.

The racial element was represented by three variables (31, 32, and 33) which were descriptive of the Black presence in the county population. Participation in government was measured by the percentage of eligible voters who voted for the President and Vice-President in 1972 (35), and for the state amendments in 1972 (36). The elements of communication and circulation were reflected in access to radio stations (36), local television stations (37), local newspaper circulation (38), telephone services available in the community (39), and auto registration (40).

Since very little data is available at this scale for "recreation and Leisure" the two variables used to measure this general indicator were county per capita expenditure for recreation (41) and county per capita expenditure for county fairs (43).

DATA REDUCTION

The fifty social well-being variables were collected for each of the sixty-five rural Kansas counties. The data were reduced by principal components analysis to obtain basic dimensions (descriptive variable clusters) of social well-being variation..

Principal components analysis is one of a group of factor analysis models. Its presence in this research was determined by replication requirements. It was the process most applied to the large sets of social variables in earlier

studies. Principal components analysis condenses the original data matrix ($n \times m$) to a matrix of correlation coefficients ($m \times m$) that summarizes relationships between the variables. A factor matrix ($m \times r$) is then produced which correlates the variables with the underlying components.

The components were presented in the order of their importance, the first one explaining the most variation in the original data, the second explaining the next greatest amount of variance, and so forth. The number of important factors was smaller than the number of original variables because the variables clustered to form each factor. Factors which represented less than one percent of variation in the data set are usually considered to be insignificant.² A varimax rotation was used to identify variables more distinctly with their particular factor, so the factor "can be interpreted by as large loadings as possible relating to the fewest variables possible." The resultant component or factor is a composite variable defined by clusters of individual variables. An observation's score on a component parallels that observation's value in the variable cluster. Counties can score "high" in both positive or negative directions, both of which can be used to profile the unit.

In this research, fifty variables were subjected to principal components analysis for sixty-five rural Kansas counties. A 50×50 matrix (correlation coefficient matrix) was then obtained (see the Appendices). Then a factor matrix

and rotated factor matrix were produced. A varimax rotation yielded a simpler structure. What remained were the dimensions of variability with the defining variables which indicated the nature or make-up of the components (see Table 3.2). It was the relationship of the variables which aided in the labeling of the factors.

Social Well-Being Components

Labeling dimensions was dependent upon the clues given by the defining variables as to the nature of the component. In Component One, the clues were defining variables related to education and income. One could deduce from these relationships that where educational attainment and expenditure for education were high, then income would also be high and where the aforementioned factors load high, the percentage of families earning under \$3,000 will be correspondingly low. The resultant profile of a county with a high, positive score on this component is one whose citizens have relatively high incomes and educational attainment and who want these same qualities for their children, who are relatively well-housed, and few of whom have incomes under the poverty level. Figure 3.2 illustrates the variability of this component in rural Kansas counties. Counties which scored the highest on this factor are, for the most part, located in western and west central Kansas with the exception of Dickinson County, in the north central part of the state.

TABLE 3.2

SOCIAL WELL-BEING COMPONENTS FOR RURAL KANSAS COUNTIES, 1970

COMPONENTS		LOADINGS OF DEFINING VARIABLES	
1. Socio-Economic Status		.86	Percent of persons over 25 years of age with 4 or more years of high school
		.78	Percent of persons over 25 years of age with 4 or more years of college
		.76	Percent of year-round housing with all plumbing facilities
		.73	Median school years completed
		.71	Per capita income
		.66	Per student expenditure
		.59	Median value of housing
		-.65	Percent of families with incomes under \$3000.
2. Participation and Alienation		.81	Access to local television stations
		.80	Per capita civil defense expenditure
		.64	Percent high school drop-outs
		.56	Percent white families with both husband and wife present
		.53	Amount of aid to dependent children
		.51	Access to local radio stations
		.40	Divorce rate
		-.49	Percent voters participating in the 1972 election of the President and the Vice-President
		-.36	Percent voters participating in the 1972 election who voted on state amendments

TABLE 3.2 (Continued)
LOADINGS OF DEFINING VARIABLES

COMPONENTS		
3. Larger and Younger Communities		.79 Percent of deaths by auto
		.75 Per capita expenditures
		.50 Percent of permanent housing rented by Blacks
		.48 Housing density
		.47 Median value of housing
		.32 Permanent housing with heating facilities
		.32 Health care workers per 1000 population
		.31 Per capita fair expenditures
		-.57 Percent deaths by cancer
		-.37 Dentists per 1000 population
		-.32 Access to local radio stations
		-.31 Auto registrations per 1000 population
4. Socially Stable Isolated Areas		-.95 Percent deaths by suicide
		-.92 Induced abortions per 1000
		-.35 Access to local radio stations
		.38 Access to local newspapers
5. Information Richness		.83 Per capita library circulation
		.82 Per capita library books and periodicals for adults
		.46 Access to local newspapers
		.35 Auto registrations per 1000 population
		.34 Percent voters participating in the 1972 election of the President and Vice-President
		.33 Student-teacher ratio
6. Remoteness with Economic Vitality		-.85 Percent deaths that were violent
		-.46 Percent of the labor force unemployed
		-.34 Dentists per 1000 population

TABLE 3.2 (Continued)

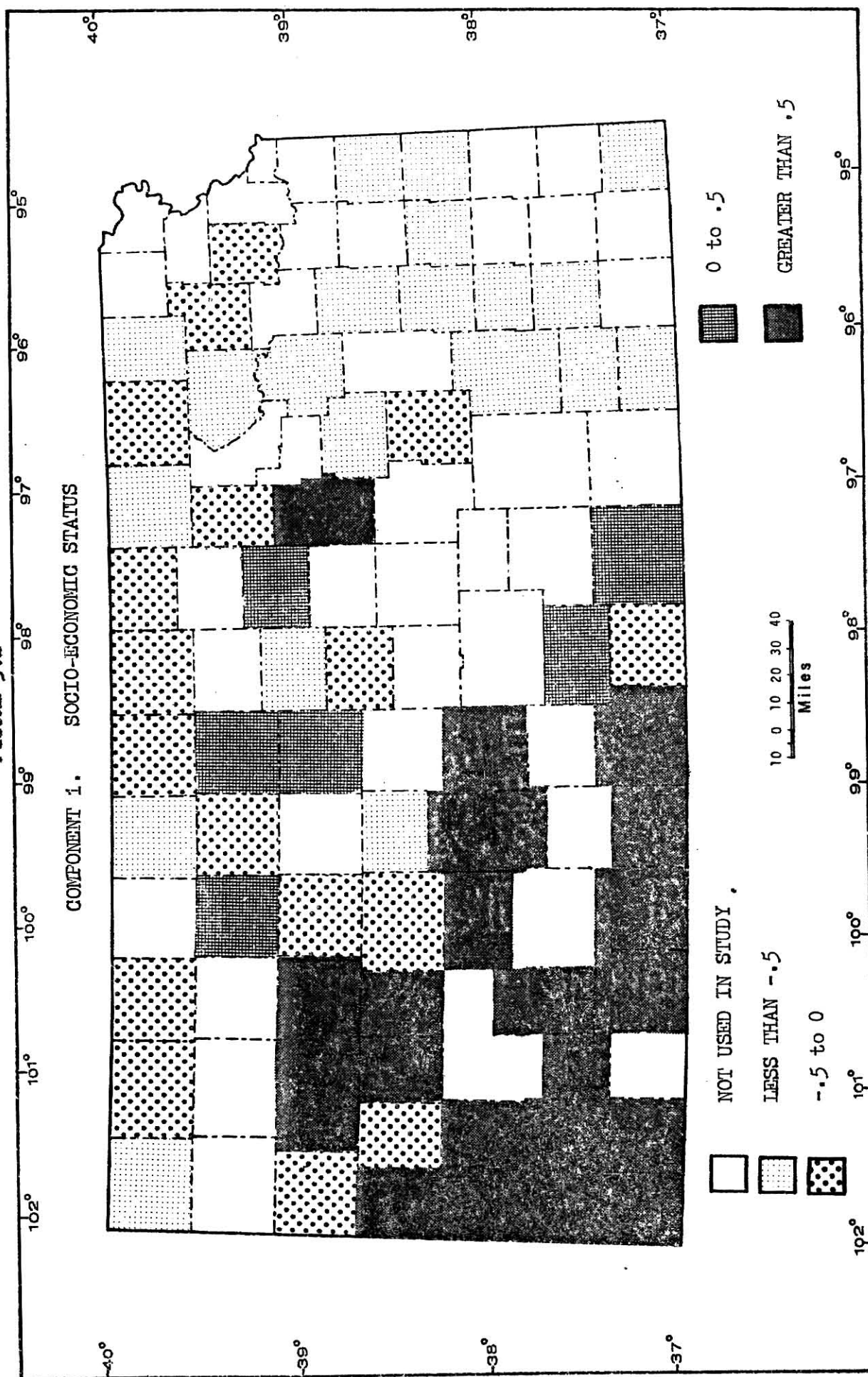
COMPONENTS	LOADINGS ON DEFINING VARIABLES
7. Racial Composition	.93 Percent homes owned by Blacks .91 Percent of population which is Black .40 Divorce rate .39 Percent rental homes rented by Blacks -.31 Percent voters participating in the 1972 election on state amendments -.30 Percent voters participating in the 1972 election for President and Vice-President
8. The Elderly Poor	.76 Health care workers per 1000 population .61 Public assistance for the aged -.63 Percent housing with heating -.36 Housing density -.33 Median value of housing -.30 Percent housing with all plumbing facilities
9. Non-Violent Crime	.85 Property crimes per 1000 population .44 Per capita expenditures for jail and prisoner costs
10. Health Care Facilities	.85 Doctors per 1000 population .75 Hospital beds per 1000 population .47 Percent rental housing rented by Blacks .30 Percent of the labor force unemployed -.55 Percent deaths due to infection and parasites other than V.D.
11. "Weak" Violent Crime	.41 Violent crimes per 1000 population -.31 Percent voters participating in 1972 -.30 Per capita county fair expenditures

TABLE 3.2 (Continued)

COMPONENTS	LOADINGS OF DEFINING VARIABLES
12. Undefined	.82 Percent high school graduates .55 Percent high school drop-outs -.40 Access to local newspapers -.34 Percent of white families with both husband and wife present
13. Undefined	.44 Divorce rate -.39 Dentists per 1000 population

FIGURE 3.2

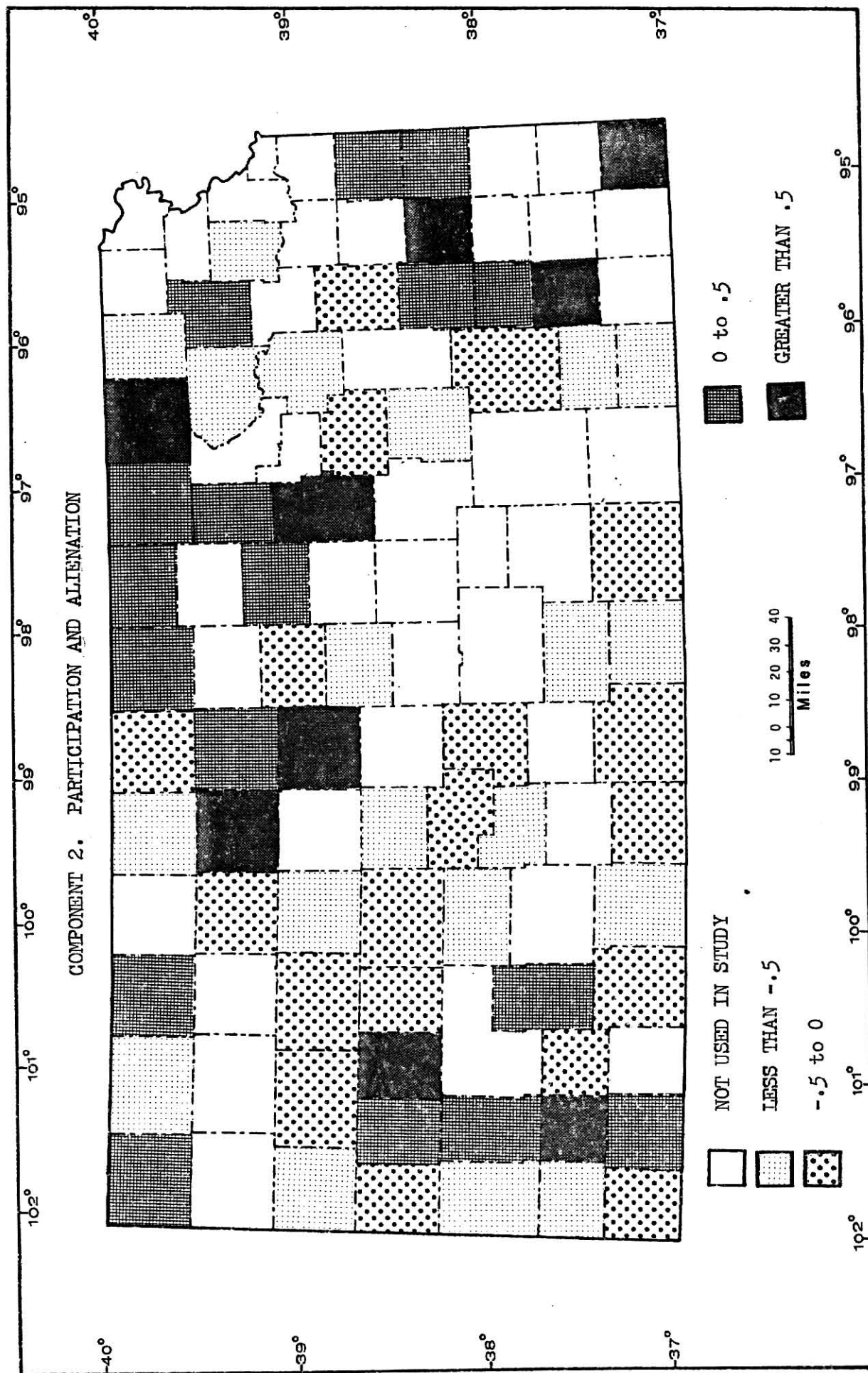
COMPONENT 1. SOCIO-ECONOMIC STATUS



None of the counties had a population center larger than 10,000. The average per capita income for these counties was \$2,880 compared to \$2,588 for the study group as a whole. While the average median number of school years completed for all the counties studied was 11.69, counties scoring highest on the first component averaged 12.27. On the housing variable, these counties had an average of \$10,317 median housing value, while the rest of the counties' averaged \$8,499. Thus, the defining variables suggest the label assigned. These counties enjoyed relatively higher educational attainment levels, per capita income, and housing quality. The counties which scored the lowest on this component were the more populated eastern and southeastern counties.

Counties that had high and positive scores on Component Two, "Participation and Alienation," had high loadings on local television and radio access, and civil defense expenditures, all of which suggest a metro-fringe location. Where the drop-out rate, the divorce rate, and the aid to dependent children were high, then participation in the democratic process will be low. This described a county not far removed from a metropolitan area, which experienced social instability in the form of family disruption, lack of educational attainment, and lack of interest in the democratic process. Counties with the highest positive scores on this component border counties with larger settlements which were not included in this study (see Figure 3.1). Grant and Scott counties are the westernmost representatives of this

FIGURE 3.3

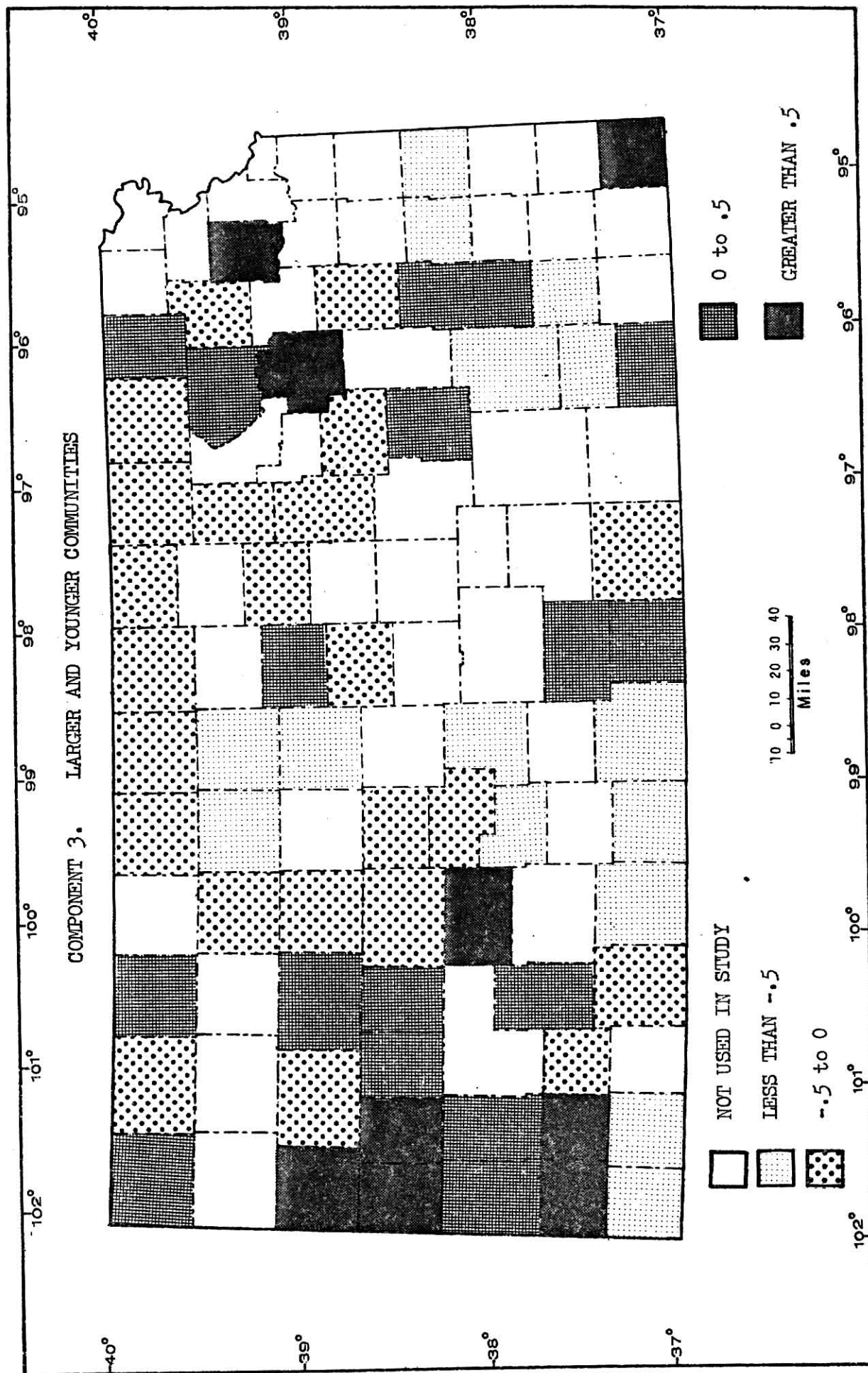


dimension; they are adjacent to Garden City in Finney County. Rooks and Russell flank Hays in Ellis County. Dickinson lies between Manhattan in Riley County and Salina in Saline County. Marshall lies north of Riley County. Cherokee, Wilson, and Anderson all fringe the Pittsburg-Fort Scott-Parsons-Chanute-Iola complex.

The average divorce rate for these counties is 2.72 compared to the overall study average of 1.95. The average for these counties with regard to participation in the democratic process, i.e., voters who turned out for the 1972 Presidential-Vice-Presidential race and state amendments, were, respectively, .366 and .398, compared to the overall average of .40 and .63.

Component Three, "Larger and Younger Communities," was positively associated with counties which have relatively larger communities (as indicated by high, positive loadings on housing density, recreation expenditures, county fair expenditures, and a moderately high Black presence). The "younger" tone of the component was suggested by the high loadings on auto deaths, low loadings on cancer deaths and auto registrations. The counties which had the highest positive scores were Wallace, Greeley, Wichita, Stanton, Grant, Hodgeman, Wabaunsee, Jefferson, and Cherokee. The population of the counties would be younger in relation to the rest of the study group.

FIGURE 3.4



Counties with high, positive scores on Component Four, "Socially Stable Isolated Areas," had few reported suicides and induced abortions, indicating a degree of social stability. Their more limited access to radio stations and insignificantly higher loadings on local newspaper circulation indicate a peripheral location. Counties which scored highest on this component were Wallace, Kearney, Gove, and Osbourne--all counties with population centers of less than 5,000.

From a positive standpoint, Component Five, "Information Richness," profiles counties with high loadings on both library facilities and use. Corresponding to this information access for counties scoring high are moderately high loadings on newspaper circulation and participation in the democratic process (voter turn-out in the 1972 Presidential election). There was a suggestion that these were growing populations because of the moderately high student-teacher ratio and auto registrations. The counties which scored highest on this component were Rawlins, Decatur, Stanton, Hamilton, Greeley, Edwards, Sumner, Pottawatomie, and Wabaunsee.

Component Six, "Remoteness with Economic Vitality," differentiated counties which were somewhat peripheral to metropolitan areas, and which displayed markedly different economic vitality. The latter deduction comes from analysis of the low negative loadings on unemployment. The remote

FIGURE 3.5

COMPONENT 4. SOCIALLY STABLE ISOLATED AREAS

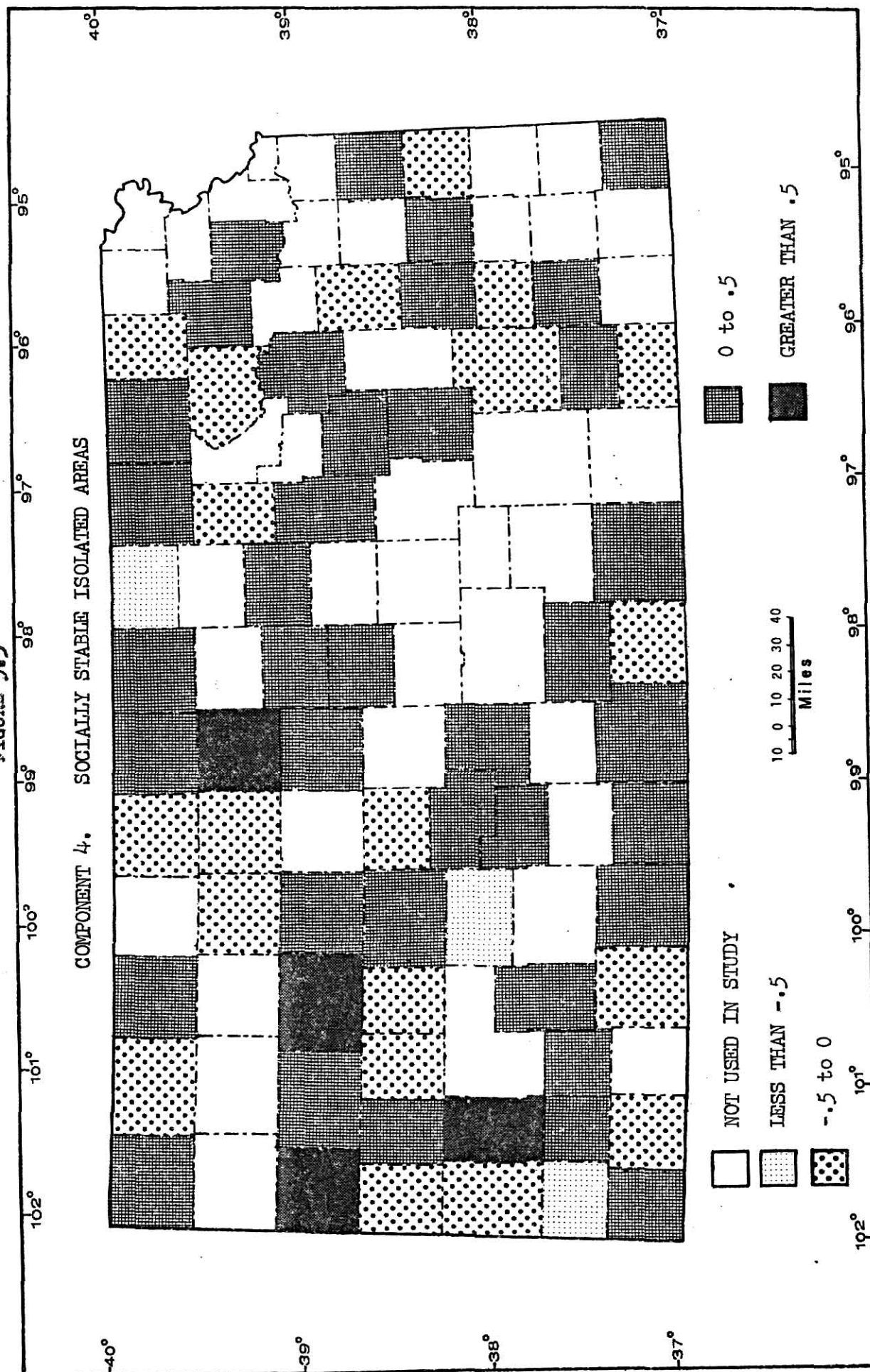
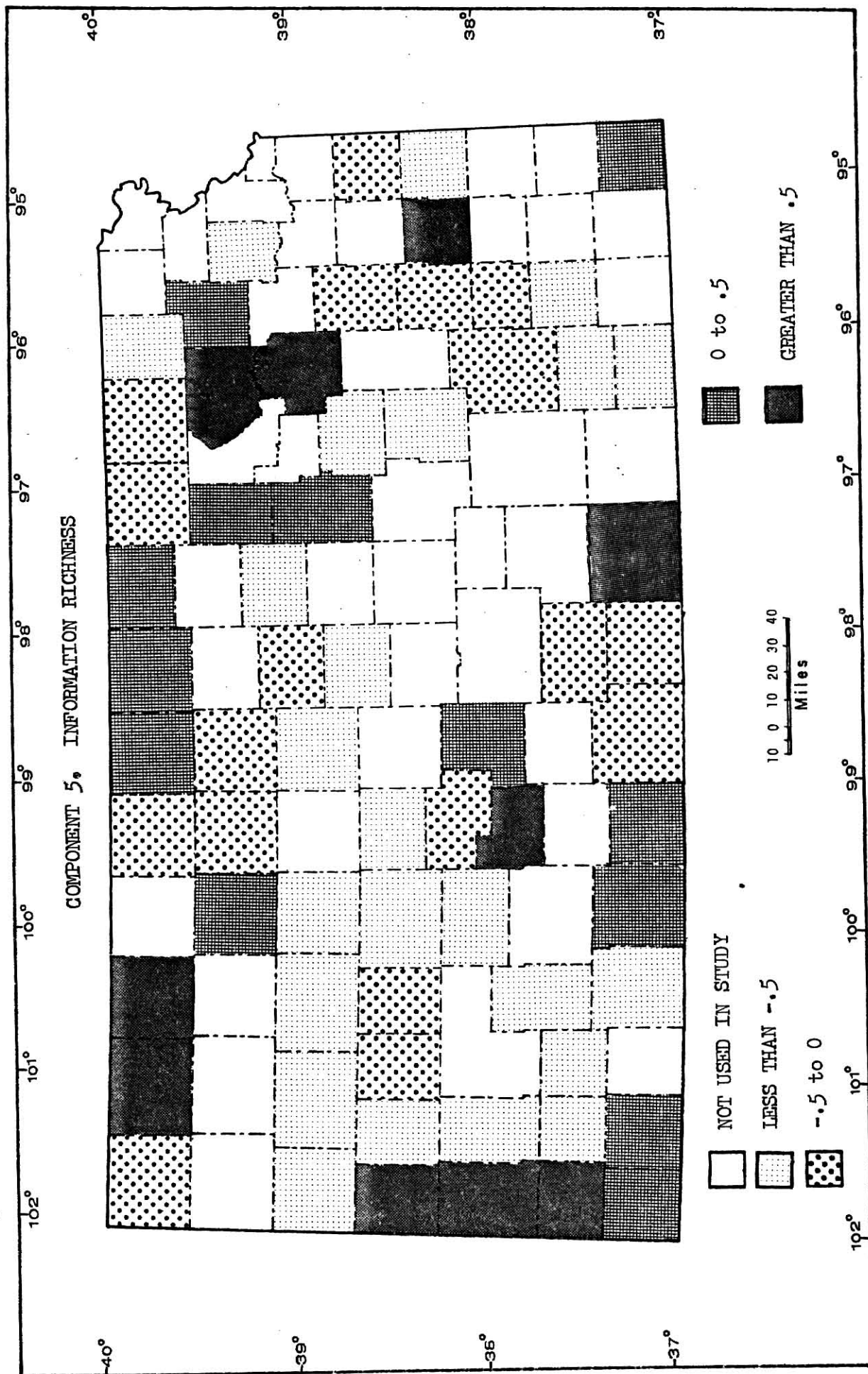


FIGURE 3.6



nature of the counties was suggested by the indication of relatively few violent deaths and by the lack of access to dental care. Counties which scored highest on this component were Cheyenne, Wallace, Greeley, Stevens, Graham, Trego, Ness, Rooks, Wabaunsee, Marshall, Nemaha, Jefferson, Wilson, Coffey, Stevens, Haskell, and Ottawa.

Counties scoring positively on Component Seven, "Racial Composition," had a high proportion of Blacks in their populations. High variable loadings included the percentage of Blacks in the population, the percentage of Black-owned homes, and the percentage of Black-rented homes. The divorce rate also had high loadings. The component had low loadings on voter participation.

Component Eight profiled counties with respect to the proportion of the elderly poor in the population. Evaluation of the defining variables for counties with high positive scores may reflect an older population (suggested by high loadings on assistance to the aged, health care workers per 1,000 population, and low loadings on housing occupance density). Where loadings marked a larger number of the elderly, housing quality tended to be poor, indicating a community where incomes were generally lower than the overall study group. Counties positively profiled by this component were Stanton, Greeley, Decatur, Clark, Gray, Edwards, Pawnee, Cherokee, Elk, Woodson, Morris, Chase, Ottawa, Jewell, and Osbourne.

FIGURE 3.7

COMPONENT 6. REMOTENESS WITH ECONOMIC VITALITY

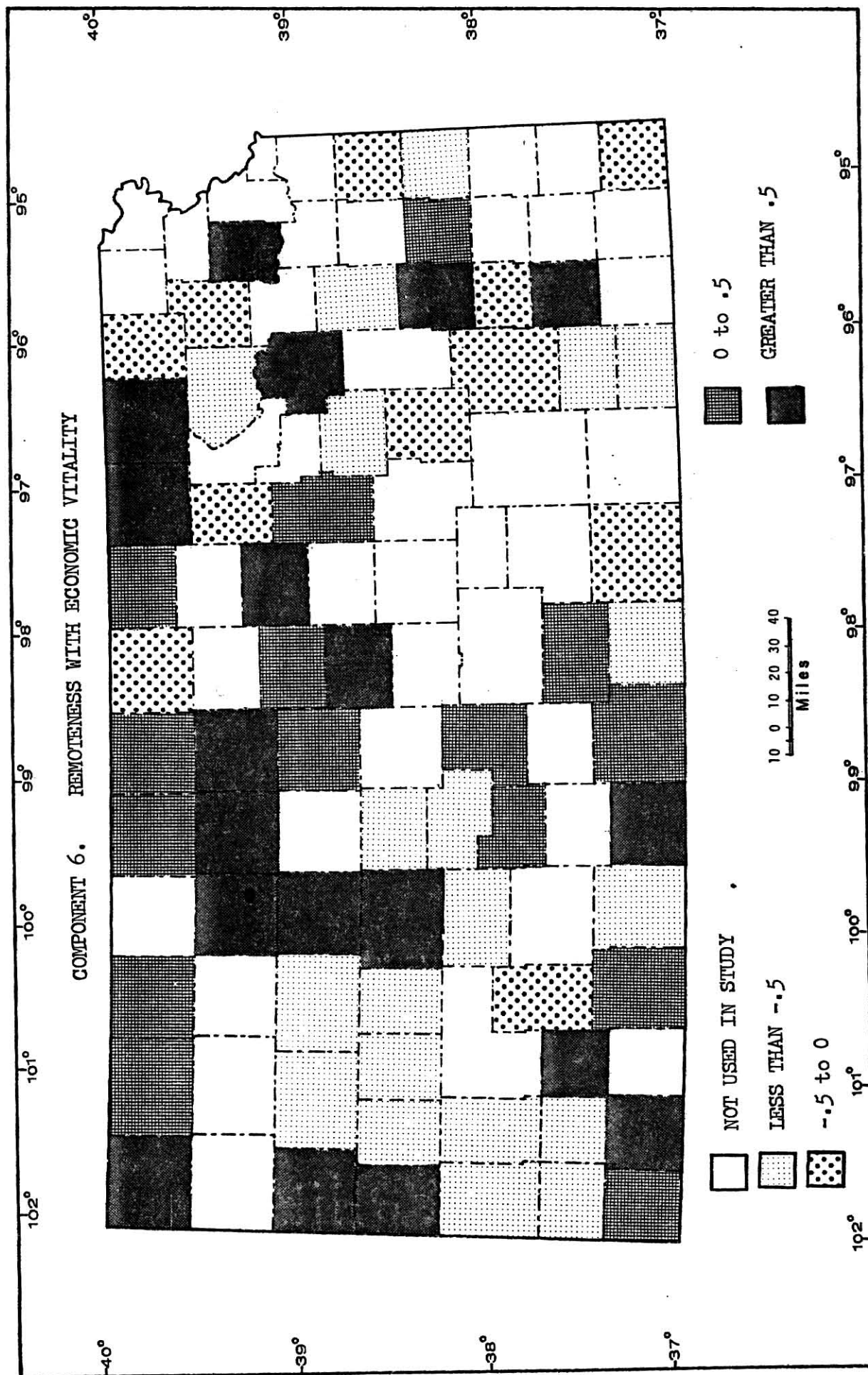
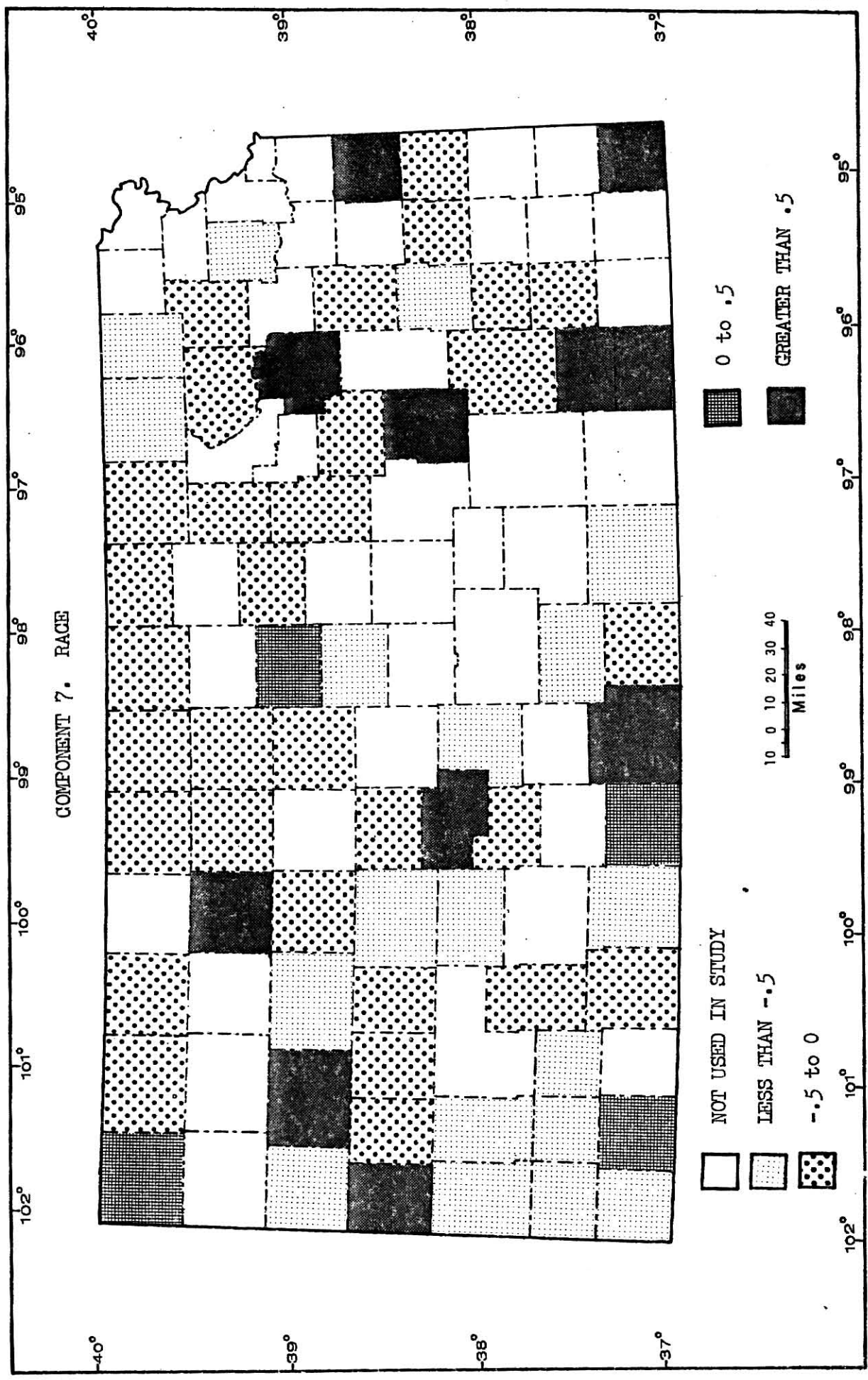


FIGURE 3.8



Component Nine distinguished counties on the basis of property crime and prisoner and jail expenditures. These crimes would be less serious than those which would require extradition to a larger population center. As we are dealing with rural counties in this study, these could be counties which are unusually more difficient in arrests and reports of property crime than are their counterparts, as minor infractions of the law are occasionally overlooked or let by with reprimands in small, close communities. Counties scoring positively and high on this component were Stanton, Grant, Kearney, Logan, Gove, Ness Rush, Russell, Lincoln, Ellsworth, Dickinson, Commanche, Sumner, Elk, Coffee, Anderson, Miami, Jefferson, Leavenworth, and Republic.

High, positive scores on Component Ten, "Health Care Facilities," profiled counties with unusually good medical facilities in terms of access and care. This component had high loadings on doctors and hospital beds for the population and low loadings on deaths due to infection, other than V.D. Counties positively profiled by this component were Rawlins, Greeley, Stanton, Kearney, Clark, Harper, Miami, Jackson, Ness, Rush, and Stafford.

Component Eleven, "'Weak' Violent Crime," profiled counties characterized by a moderately high loading on violent crime. Where violent crime was significant, then voter participation and county fair expenditures were low. Counties positively profiled by this component were Grant,

FIGURE 3.9

COMPONENT 8. THE ELDERLY POOR

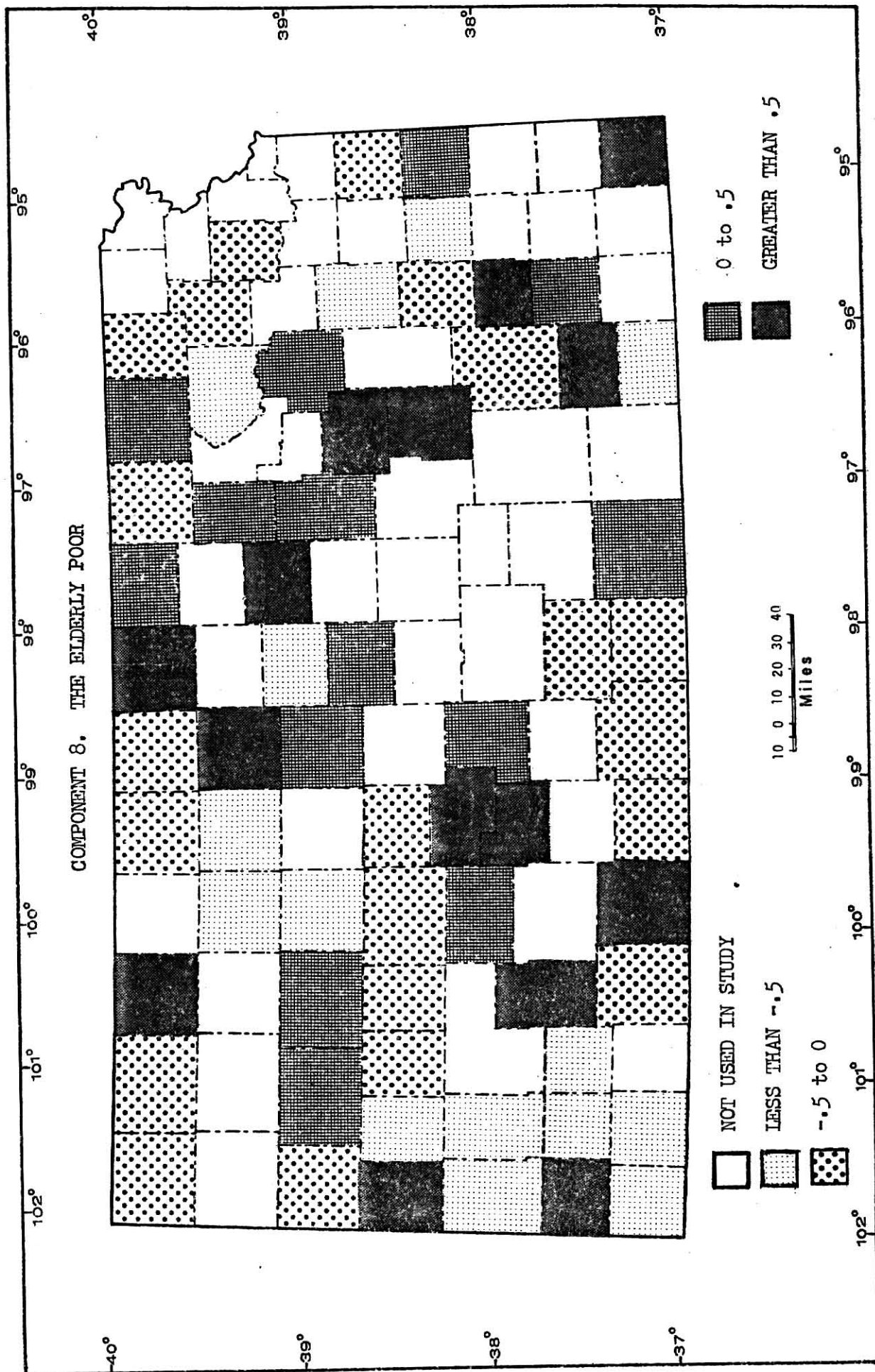


FIGURE 3.10

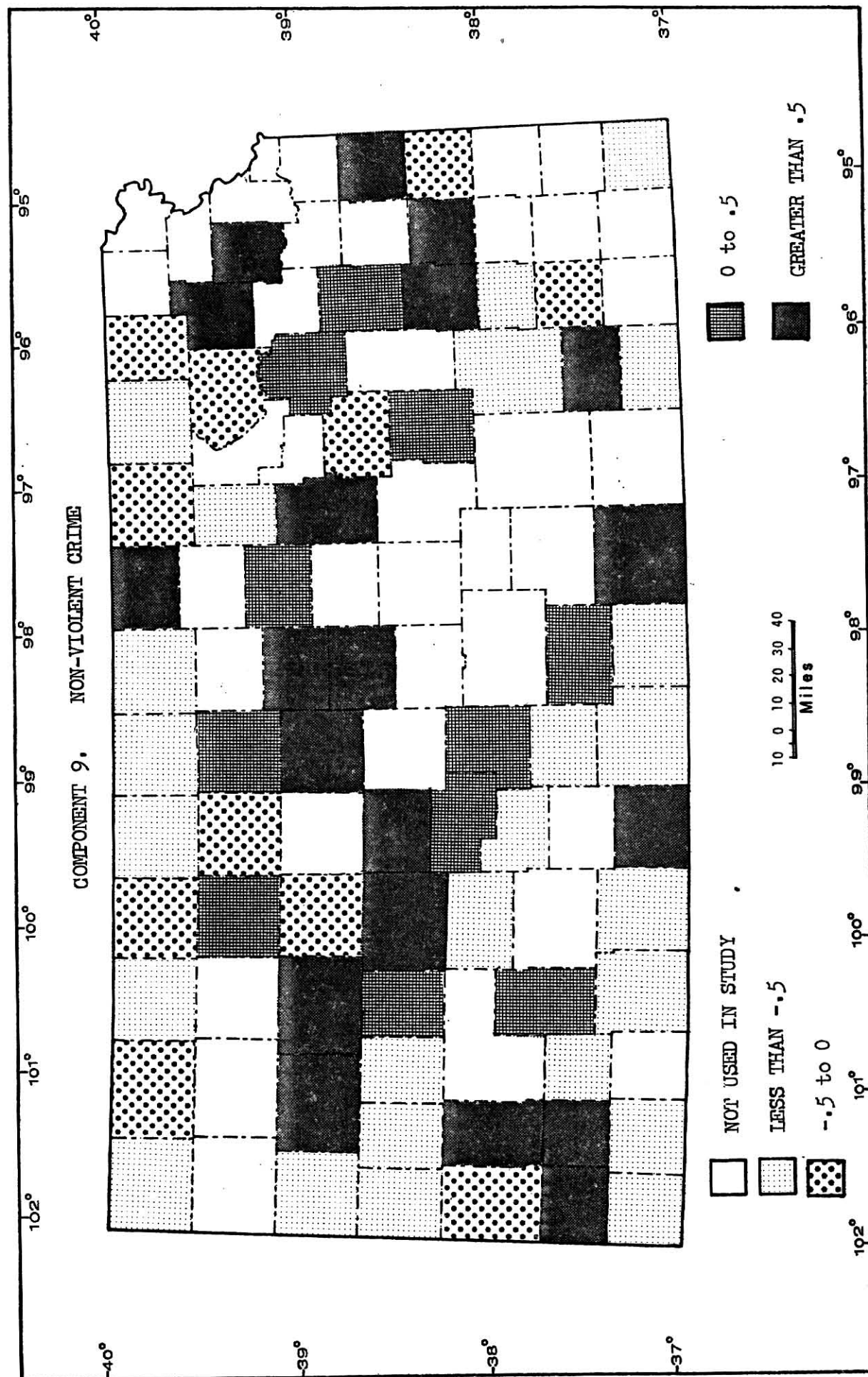
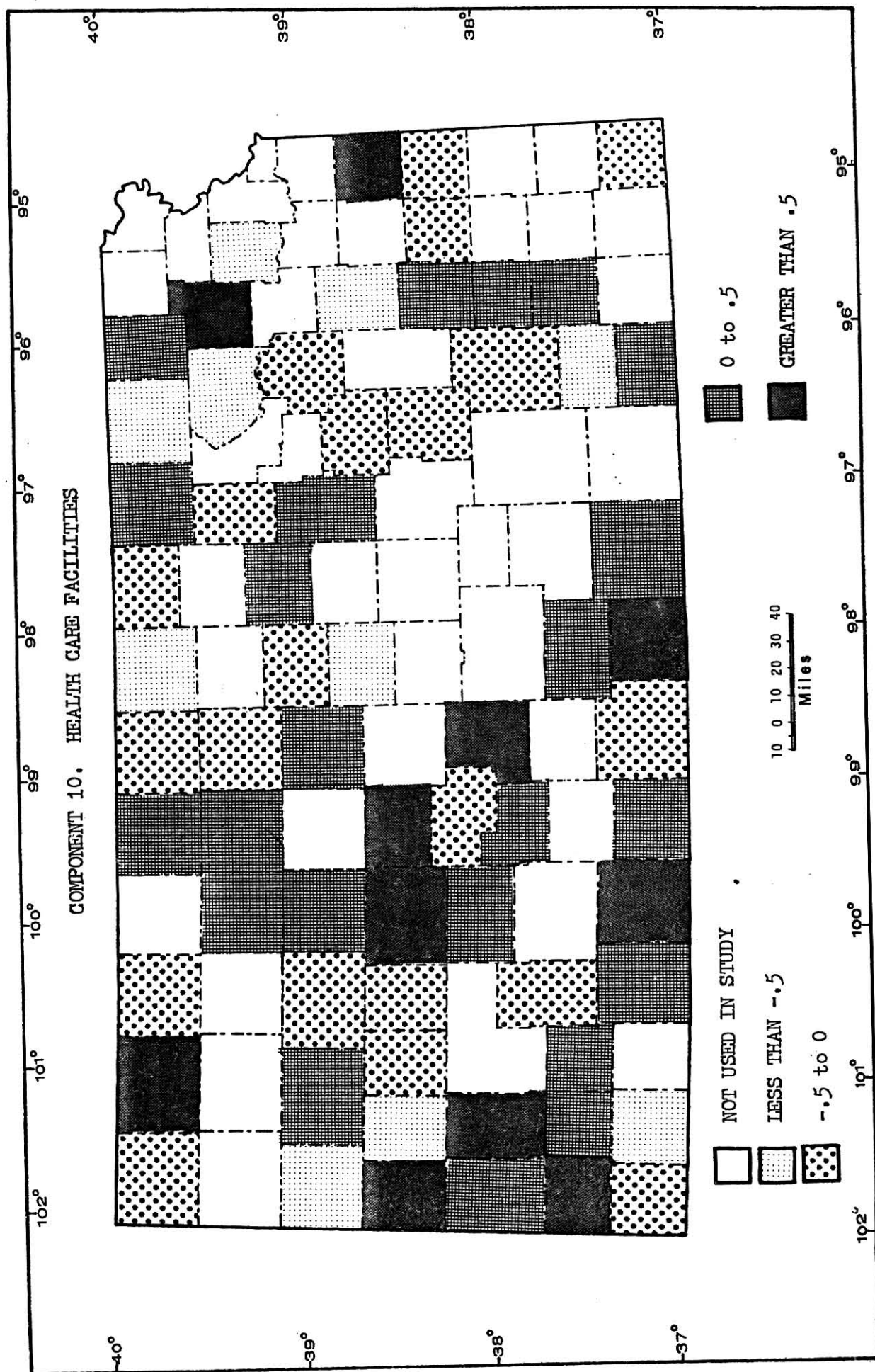


FIGURE 3.11

COMPONENT 10. HEALTH CARE FACILITIES



Hamilton, Wichita, Gove, Rawlins, Ness, Pawnee, Commanche, Harper, Wilson, Miami, Jefferson, Pottawatomie, Wabaunsee, Lyon, Clay, Ottawa, Smith, Morris, and Chase.

The remaining six components, listed in Table 3.2, were not considered significant enough to be included in an explanation of county variance.

COMPARISON WITH PREVIOUS STUDIES

One way of assessing the significance of the components was to compare them with those earlier, similar studies attempted. The research efforts cited here were those whose methodology was similar to that used in this study. These attempts included one study at the inter-state level,⁴ one attempted at the inter-city level,⁵ and one attempted at the intro-city level.⁶ Each of these was based upon similar indicators, and each indicator had similar defining variables. The analytical procedure employed was principle components analysis (discussed earlier in this chapter).

The first study for comparison was Smith's inter-state analysis.⁷ In this research, Smith attempted to distinguish locational variation in social well-being, using states as the units of observation. The author admitted the difficulties in electing to use this unit of observation: "A particularly unfortunate quality from the perspective of the present study is that characteristics ascribed to entire states can be largely the result of conditions in one or two major cities."⁸

The choice of major criteria paralleled that listed in Table 1.1 with the exception of Recreation, which was omitted for lack of data. A few substitutions were made to compensate for data insufficiencies. In the end, forty-seven variables were selected which, the author felt, were as near the seven "criteria" as possible. The variables were then subjected to principal components analysis.

Smith's first resultant component, "General Socio-Economic Well-Being," explained 38.56% of the total variance, a significant amount. The second, "Social Pathology," explained 13.74% of the total variance; and the third, "Mental Health," explained 11.98% of the total variance. These were the three components the author believed were the most significant. Of the others, the explained variance was as follows: Racial Segregation, 5.94%, Public Assistance-Unionization 3.72%, and Social Disruption, 3.5%.

The first, and major component distinguished states which were either high or low with respect to access to dentists and physicians, per capita incomes, and proportion of white collar workers, child support and unemployment payments, benefits for retired workers, educational attainment, and voter participation. Where these elements were high, then families living with the poverty level, poor housing, diet deficiencies, infant mortality, and illiteracy would be low.

This component was in some ways similar to not only the first obtained for the present research but also for the first

component of the inter-city analysis and the second component of the intra-city (Tampa) study. It appeared to be a ubiquitous dimension whose defining variables reflected the changes in scale. In the rural Kansas study, this component contained the three major variables of education, income, and housing; but it had no health care aspect (this came later, in a weak tenth component). Welfare and unemployment, also, did not appear in the first component of the rural county study. This indicated that while areas with a strong metropolitan influence scored high on welfare measures, the element was not descriptive of rural socio-economic status in the Plains. Infant mortality, which was strong in the inter-state first component, rated not at all in any of the significant components of the present research, suggesting that the variables was an urban problem and not one for the rural Kansas county.

"Social Pathology," Smith's second significant component, was much different than that obtained in the present research. Its defining variables included incidences of social disease, violent and non-violent crime, drug abuse, school segregation, illiteracy, and tuberculosis. In the rural Kansas county study no component showed this level of social disintegration. This reflected the influence of more urbanized areas which dominated the states in Smith's application.

The third of Smith's components, Mental Health, differed widely from the situation in rural counties. One problem here was that mental health and psychiatric treatment were not

TABLE 3.3

CRITERIA OF SOCIAL WELL-BEING AND VARIABLES USED IN STATE ANALYSIS

I. INCOME, WEALTH AND EMPLOYMENT

- i. Income and Wealth
 - 1. Per capita annual income (\$), 1968
 - 2. Families with annual income less than \$3000(%), 1959
 - 3. Total bank deposits per capita (\$), 1968
- ii. Employment Status
 - 4. Public assistance recipients (% population), 1964
 - 5. Union members per 1000 non-agricultural employees, 1966
 - 6. White-collar employees (% of total), 1960
- iii. Income Supplements
 - 7. Average monthly benefits for retired workers (\$) 1968
 - 8. Average monthly AFDC payments per family (\$) 1968
 - 9. Average monthly aid to the disabled (\$) 1968
 - 10. Average monthly old age assistance (\$) 1968
 - 11. Average weekly state unemployment benefit (\$) 1968

II. THE ENVIRONMENT

- i. Housing
 - 12. Median value of owner-occupied houses (\$) 1960
 - 13. Houses dilapidated or lacking complete plumbing (%) 1960
 - 14. Index of home equipment (max. equals 600) 1960

III. HEALTH

- i. Physical Health
 - 15. Households with poor diets (%) 1965
 - 16. Infant deaths per 10,000 live births 1967
 - 17. Tuberculosis deaths per million population 1967
 - 18. Hospital expenses per patient day (\$) 1965
- ii. Access to Medical Care
 - 19. Hospital beds per 10,000 population 1967
 - 20. Physicians per 10,000 population 1967
 - 21. Dentists per 10,000 population 1967
 - 22. Persons covered by hospital health insurance (%) 1965
- iii. Mental Health
 - 23. Residents in mental hospitals per 100,000 population 1965
 - 24. Patient days in mental hospitals per 1000 population 1965
 - 25. Mental hospital expenditures per patient day (\$) 1965

IV. EDUCATION

- i. Achievement
 - 26. Illiterates per 1000 population 1960
 - 27. Draftees failing armed service mental tests (%) 1968
- ii. Criminal Justice
 - 28. Median school years completed (x 10) 1960
 - 29. Persons attended college per 1000 population aged 25 and over
- iii. Level of Service
 - 30. Pupils per teacher 1968
 - 31. Public school expenditures per pupil (\$) 1967

TABLE 3.4

STRUCTURE OF THE THREE LEADING COMPONENTS OF SOCIAL WELL-BEING
AT THE STATE LEVEL

COMPONENT 1: GENERAL SOCIO-ECONOMIC WELL-BEING

- .9398 families with incomes less than \$3000.
- .9083 houses dilapidated etc.
- .8951 benefits for retired workers
- .8853 per capita income
- .8651 dentists/10,000 population
- .8556 AFDC payments
- .8086 state unemployment benefits
- .8065 value of owner-occupied houses
- .7993 households with poor diets
- .7993 infant deaths
- .7868 public school expenditures
- .7834 mental test failures
- .7780 eligible voters voting
- .7749 white-collar employees
- .7615 physicians/10,000 population
- .7587 median school years completed

COMPONENT 2: SOCIAL PATHOLOGY

- .8384 crimes of violence
- .7236 syphilis cases
- .6719 gonorrhea cases
- .6528 narcotics addicts
- .6422 school segregation
- .6325 registered voters
- .6043 crimes against property
- .5517 illiteracy
- .5413 tuberculosis deaths
- .5329 index of home equipment

COMPONENT 3: MENTAL HEALTH

- .8174 patient days in mental hospitals
- .7999 hospital expenses/patient day
- .7940 residents in mental hospitals etc.
- .7800 hospital beds/10,000 population
- .6323 divorces
- .5583 suicides
- .4932 mental hospital expenditures/patient days
- .4696 motor vehicle accident deaths
- .4601 crimes against property
- .4568 median school years completed
- .4548 persons attended college

variables in the latter study because the facilities and records for such treatment were found in larger, more urbanized counties. It was interesting that social disintegration in the rural Kansas counties was a much less distinct element than in other studies. Also, the more isolated, less urbanized the setting, the more the dimensions emphasized the importance of accessibility. The fourth and sixth components in the study reflected a peripheral location, as did components with low access to the media. The major scale influences found in the comparison were those dealing with decreased levels of social disintegration at the rural Kansas county level and the more distinctive consequences of inaccessibility.

In his study of S.M.S.A. areas, Smith⁹ conducted research using similar variables (Table 3.5) and identical methodology as the two studies mentioned above. Two resulting components (see Table 3.6), which he felt were significant were Affluence (with an explained variance of 27.9%) and Crime (with an explained variance of 16.5%).

Affluence paralleled the components of Socio-Economic Status discussed earlier. In this factor, there were high loadings on all defining variables: per capita income, incomes over \$20,000, bank deposits, per capita property taxes, retail sales, payments for dependent children, the retired, social security, and high local school expenditures. The component was composed of similar types of variables

TABLE 3.5

VARIABLES USED TO MEASURE SOCIAL WELL-BEING IN SMSA'S
WITH 250,000 OR MORE POPULATION

MATERIAL LIVING STANDARDS

1. Annual income per capita (\$) 1966
2. Annual incomes under \$3000 (%) 1967
3. Annual incomes over \$20,000 (%) 1967
4. Unemployment (% of total workforce) 1968
5. Average weekly earnings of production workers (\$) 1968
6. Local property tax per capita (\$) 1968
7. Median property value of FHA insured homes (\$) 1967
8. Total bank deposits per capita (\$) 1968
9. Total retail sales per capita 1963
10. Increase in retail sales (%) 1958-1968

WELFARE

11. Local welfare expenditures per capita (\$) 1967
12. Social Security recipients per 100,000 population 1968
13. Total social security payments per recipient (\$) Dec. 1968
14. Average benefit for retired workers (\$) Dec. 1968
15. Total anti-poverty funds per capita (\$) 1968
16. Old age assistance per recipient (\$) Feb. 1969
17. Families with dependent children assistance per family (\$)

HEALTH

18. Physicians per 100,000 population 1967
19. Hospital beds per 100,000 population 1967
20. Dentists per 100,000 population 1967
21. Local health and hospital expenditures per capita (\$) 1967

EDUCATION

22. Median school years completed 1960
23. Pupils per teacher in public schools 1967-1968
24. Local education expenditures per capita (\$) 1967

SOCIAL ORDER OR DISORGANIZATION (CRIME)

25. Murder and manslaughter per 100,000 population 1968
26. Forcible rape per 100,000 population 1968
27. Robbery per 100,000 population 1968
28. Aggravated assault per 100,000 population 1968
29. Burglary per 100,000 population 1968
30. Larceny \$50. and over per 100,000 population 1968
31. Auto theft per 100,000 population 1968

Source: Smith, 1973, page 114.

TABLE 3.6

STRUCTURE OF THE TWO LEADING COMPONENTS OF SOCIAL WELL-BEING
AMONG SMSAs WITH OVER 250,000 POPULATION

COMPONENT 1:	AFFLUENCE (explained variance: 27.9%)
	.8466 per capita property tax
	.8350 per capita income
	.7657 aid to dependent children payments
	.7268 per capital retail sales
	.7253 dentists per capita
	.7237 social security payments
	.6990 incomes of over \$20,000
	.6580 benefits for retired
	.6424 local education expenditures
	.6328 per capita bank deposits
	.6197 value of homes
COMPONENT 2:	(explained variance: 16.5%)
	.8140 burglary
	.7922 rape
	.7564 assault
	.7500 murder
	.6821 larceny
	.6537 robbery
	-.4854 benefits for retired
	-.4812 social security payments
	-.4724 aid to dependent children payments
	.4547 auto theft

Source: Smith, 1973, page 115.

(income, education, and housing), but the increased personal wealth was a remarkably more influential element in Affluence.

The Crime component was much more distinct and more important in the urban areas than in the less urbanized (rural) areas. It contained both violent crime and property crime whereas the rural county study had two very weak crime components. This was reflective of the counties' peripheral location and low population density.

The intra-city analysis¹⁰ emphasized elements similar to the inter-city level's, though it focused on the areal variation within one city. Socio-Economic Status, Gray's second component, differed somewhat from the first component of the present research in its specific variables although the general indicator areas were similar: housing, education, and income. Gray's dimension profiled areas with either high or low educational attainment, income, and housing quality.

In general, Gray's components (Table 3.8) conveyed more variability in disintegration than did the rural county study. Racial composition was an element common to both studies, although attendant problems of segregation, juvenile delinquency, and public assistance were not associated in the study of rural counties, suggesting not only the important difference scale made in the researches, but the importance of setting as well.

Lack of accessibility was again an element which distinguished the rural Plains study. It was an element not

FIGURE 3.12

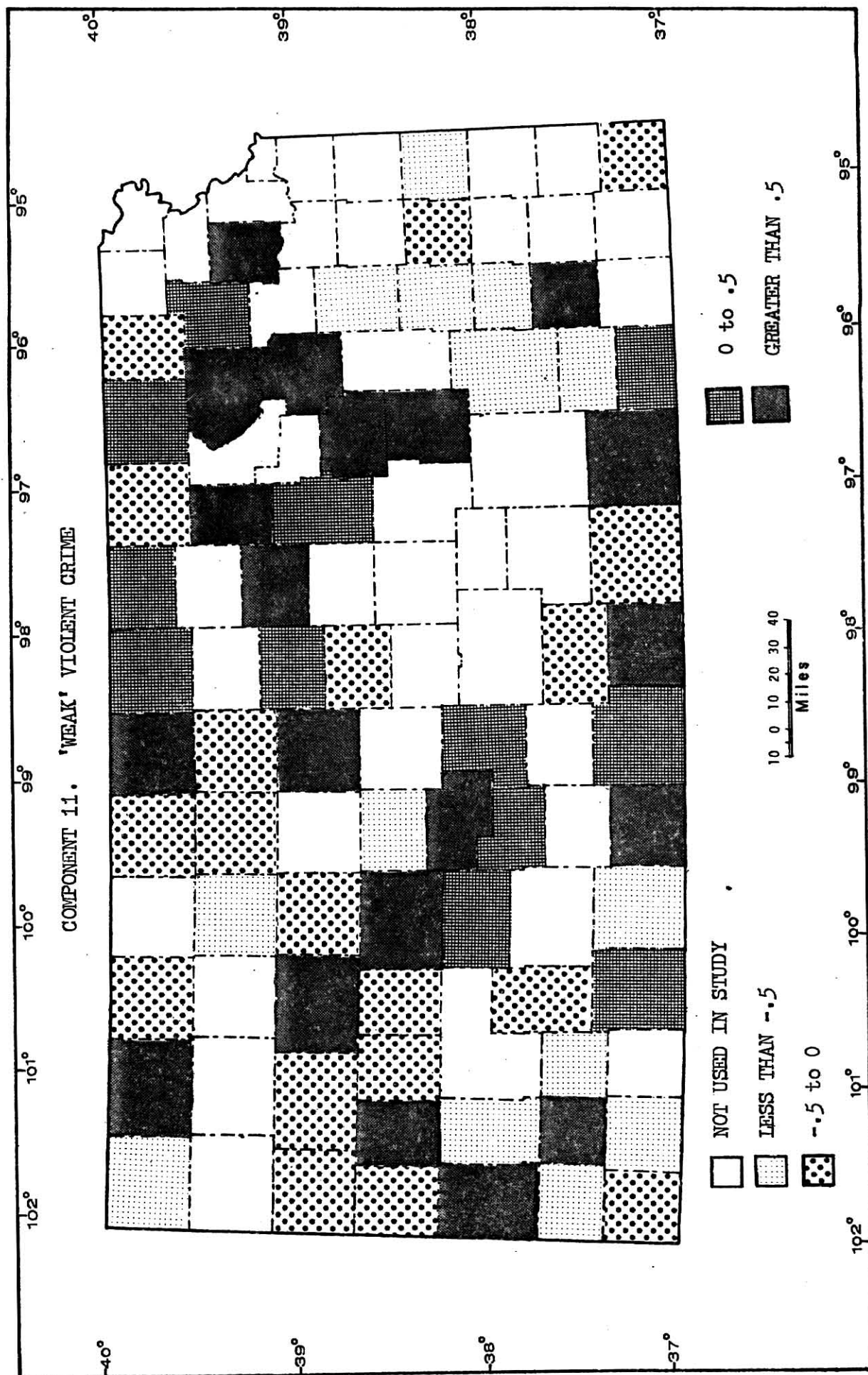


TABLE 3.7

CRITERIA OF SOCIAL WELL-BEING AND VARIABLES
USED IN THE TAMPA STUDY

I. ECONOMIC STATUS

i. Income

1. Income per capita (\$) of persons 14 and over 1970
2. Families with income less than \$3000 (%) 1970
3. Families with income over \$10,000 (%) 1970
4. Persons in families below poverty level (%) 1970

ii. Employment

5. Unemployed persons (%total workforce) 1970
6. Persons aged 16-24 working less than 40 weeks (%)
7. White-collar workers (%) 1970
8. Blue-collar workers (%) 1970

iii. Welfare

9. Families on AFDC program (%) October 1971
10. Persons aged 65 and over on Old Age Assistance (%) October 1971

II. ENVIRONMENT

i. Housing

11. Average value of owner-occupied units (\$) 1970
12. Owner-occupied units valued less than \$10,000 (%)
13. Average monthly rental of rented units (\$) 1970
14. Rented units with monthly rentals less than \$60 (%)
15. Units with complete plumbing facilities (%) 1970
16. Deteriorating and dilapidated houses (%) 1971

ii. Streets and sewers

17. Streets needing reconstruction (% of total length)
18. Streets needing scarification and resurfacing (% of total length) 1971
19. Sanitary sewer deficiencies (% of total area) 1971
20. Storm sewer deficiencies (% of total area) 1971

iii. Air Pollution

21. Maximum monthly dustfall (tons/sq. mile) 1969
22. Average suspended particulates 1969
23. Maximum monthly sulfation 1969

iv . Open Space

24. Area lacking park and recreation facilities (%) 1971

TABLE 3.8

HIGHEST LOADINGS ON LEADING SOCIAL WELL-BEING FACTORS
IN THE TAMPA STUDY

COMPONENT 1:	SOCIAL PROBLEMS (explained variance: 17.8%)
	.998 Death rate
	.946 Heart disease deaths
	.905 Cancer deaths
	.885 Criminal violation arrests
	.851 Juvenile delinquency arrests
	.789 Stroke deaths
	.682 Families on AFDC
	.619 Persons separated or divorced
	.605 Juvenile delinquency arrests by residence
	.567 Families with children having husband and wife
	.554 Narcotics violations
	.552 Families with incomes less than \$3000
	.520 Venereal disease
	.501 Persons 18-24 with 4 years high school or college
COMPONENT 2:	SOCIO-ECONOMIC STATUS (explained variance: 11.3%)
	.934 Persons over 25 with 4 years college
	.909 Average value of owner-occupied housing units
	.744 Income per capita
	.633 Blue-collar workers
	.615 Families with incomes over \$10,000
	-.568 Maximum monthly sulfation
	.556 Average monthly rental of rented housing units
	.548 White collar workers
	.533 Persons over 25 with 8 years school
	.498 Owner-occupied housing units valued less than \$10,000
	.454 Registered voters
COMPONENT 3:	RACIAL SEGREGATION (explained variance 9.5%)
	.878 Racial distribution index
	.846 Dwelling with more than 1.0 persons per room
	.710 Persons on Old Age Assistance
	.479 Persons over 25 with 4 years high school
	.465 Persons 18-24 with 4 years high school or college
	.462 Juvenile delinquency arrests by residence
	.434 White-collar workers
	.421 Families on AFDC

TABLE 3.8 (Continued)

COMPONENT 4: SOCIAL DEPRIVATION (explained variance: 8.3%)	
.834	Unemployed persons
.810	New Active tuberculosis cases
.640	Housing units with complete plumbing
.590	Narcotics violations
.513	Venereal disease
.450	Families with children having husband and wife
.441	Persons in families below poverty level
.434	Infant deaths

Source: Smith, 1973, page 128 .

uplicated at any other scale. In general, the replication of social well-being methodology from the previous studies reflected clearly the changes in scale and setting: accessibility was more a factor in the rural countryside than in areas with an urban bias because of less concentration of commercial activities and consequently longer distances which must be traveled for certain goods. Also, social disintegration was less prevalent in these peripheral locations than in the state or urban studies', suggesting a more isolated setting. Thus one must conclude that social well-being dimensions are scale and setting dependent.

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Chapter 4

PERCEIVED QUALITY OF LIFE

It was proposed in Chapter 1 that social well-being and perceived quality of life components are not congruent. To assess this, it was necessary to compare factors obtained through the principal components analysis of the well-being variables in Chapter 3 with some equivalent measure of perceived life quality. Since no available source contained the perception data required for such a comparison, a mechanism for gathering this information was needed. A survey based upon the derived social well-being components was designed and administered to residents in a representative sample of counties. Its purpose was to gather information on perception of quality of life in the same counties which were the units of observation for the analysis in Chapter 3. By having the people interviewed express degrees of agreement or disagreement with the previously determined components, and then aggregating these replies, it was possible to see if there was substantial consensus of opinion on conditions within those counties. There was then a basis for comparison with the components obtained for social well-being.

The discussion of the survey will be handled in three stages: a) the development of the survey document; b) the

execution of the survey; and, c) the analysis of the resultant data.

DEVELOPMENT OF THE SURVEY DOCUMENT

Considering the number of respondents required to constitute a sample representative of the counties' populations, it was decided that a survey by mail would be more efficient than personal interviews. A questionnaire was designed which, when returned by the respondents with sufficient information, could facilitate the comparative analysis attempted in Chapter 5. A copy of the survey is provided in the Appendix.

Two major types of information were elicited from the survey. First, the respondents were asked to supply such background information as county of residence, sex, and age. This information provided a needed profile of the people responding to the survey, a profile which could then be compared to the population as a whole to see if it were indeed representative and to test for bias in the age or sex of the respondents. The second type of information was that concerning perception of life quality. Since the data returned would be compared with the more objective data for the social aggregate, the survey would then have to be designed with those original components in mind.

The persons interviewed were asked to respond to statements by marking one of the following categories: strongly disagree, disagree, neutral, agree, or strongly agree. This would not only indicate an opinion (or lack of opinion) about the statement, it would also indicate the intensity of

opinion.

The first social well-being component was "Socio-Economic Status." It concerned four major areas: income, years of education, housing conditions, and school fund expenditures. Each of the survey's first five statements reflected one or all of the defining variables. The first, "Housing quality is generally very good for families in my county," evoked immediate comparison with the defining variable concerning the median value of housing. The second, "We don't spend much money to educate grade and high school students in my county," paralleled the variable measuring school expenditures per students, K-12. The third statement, "A large proportion of families in my county have inadequate incomes," was reflective of "Percent of families with incomes under \$3,000". "The level of educational attainment is high for people in my county," the fourth statement, represented three of the defining variables dealing with educational attainment of people over twenty-five years of age. According to the social well-being component, where the response to statements one, two and four was positive, then the response to statement three would be negative. The fifth statement, "My county offers more than adequate opportunities for people to improve their standard of living," was to elicit a more general appraisal of the dimension rather than one or two defining variables. The way these responses and those for the other ten components were recorded will be discussed later in this chapter.

The second of the social well-being components, "Participation and Alienation," had defining variables concerned with communication access, family, and participation in the democratic process. It is a component which measures social cohesion or disintegration. Survey statements six through ten were designed to elicit responses for this factor. Statement six, "There is a strong 'community spirit' in my county," was a general comment about the dimension. Statement number ten, "People in my county are poorly informed about national and world affairs," was intended to measure perception of media impact. Statement seven, "The divorce rate is low in my county," was directly parallel to the defining variable concerning the rate of divorce in the county, and was also reflective of pathology suggested by other variables dealing with family life. Statements eight and nine, "Voter interest in national elections is high in my county" and "The high school drop-out rate is high in my county," were designed to indicate the degree of social "belonging" in the community.

The third social well-being component was "Larger and Younger Communities." Survey statements eleven through fifteen elicited opinions concerning this component and its defining variables. The defining variables for this dimension indicated a county with high recreation expenditures, relatively high housing density, low deaths by cancer

(indicating a younger population), and a high percentage of deaths by auto, Black presence in rented housing and high median value of housing. Statement eleven measured perception of that second area, larger communities, with "Communities in my county are experiencing population growth." The defining variable concerning health care workers per one thousand people was dealt with directly in a statement questioning whether there were fewer health-care workers than the respondent thought adequate for that county. Statements thirteen and fifteen asked for opinions about the age structure of the county; the first, "An increasing share of my county's population is made up of younger people," elicited this information directly while the second, "People in my county resist change," was a more general way of eliciting much the same information. Statement fourteen tested opinion on the amount of expenditures allotted for recreational facilities.

"Socially Stable Isolated Areas," the fourth dimension, profiled a county with low suicide and abortion rates, and relatively limited access to the media. The statements which represented this component were numbers sixteen and seventeen. Number sixteen asked for a judgement about the abortion rate in the county. The remaining statement, "I feel that I'm well informed," was to register perceptions concerning media access.

The "Information Richness" component, number five, dealt chiefly with access to and use of library facilities and access to local newspapers. Statements eighteen through twenty represented this factor. Statement eighteen, "Most of my information is obtained from local newspapers," was designed to determine general opinion as to local news access. Numbers nineteen and twenty dealt with library facilities, the former with the adequacy of existing library facilities, the latter with the amount of use made of the facilities.

Component number six, "Remoteness with economic vitality," profiled a county which was peripheral to the metropolitan areas but still generated economic prosperity relative to its fellow counties. The defining variables dealt with violent deaths, unemployment and dentists per one thousand persons. Survey statement twenty-one asked for an opinion concerning the degree of unemployment among able-bodied workers in the county. The following statement, "My county can be described as somewhat isolated," evoked a more general response to the component as a whole: did the respondent feel that his county was truly in a peripheral location? The last statement representing this component, number twenty-three, was a more direct parallel to its defining variable: "My county has too few dentists to serve its needs."

The racial component, number seven, was paralleled in survey statements twenty-four and twenty-five. Whereas the component's defining variables were limited to a Black presence in the community, these two not only allowed comment

on the presence of other minorities in the county but they also register the degree of acceptance minorities would have in these communities.

Statements twenty-six and twenty-seven were concerned with the eighth component, "The Elderly Poor." This dimension represented a county with a relatively high number of the elderly who were poor, had high public health care needs, low housing density, and low housing quality. Statements twenty-six, "My county spends a great deal of public funds on care for the aged," elicited an opinion on the parallel defining variable. The second statement, "My county's population has a large number of the elderly poor," directly asked about the elderly presence in the community.

"Non-Violent Crime," the ninth component, had two defining variables concerning the percentage of property crime per 1,000 persons and county prisoner and jail expenditures. This component was represented simply by statements twenty-eight and twenty-nine: "My county has a high level of property crimes" and "My county spends too much on jail and prisoner expenses."

The tenth component obtained from Chapter 3's analysis was "Health Care Facilities." Statements thirty and thirty-one were designed to elicit the respondent's perception of the adequacy of health care facilities in his county. The first statement, "There are too few doctors in my county to serve its needs," paralleled closely the defining variable

concerning doctors per 1,000 persons. "My county had adequate hospital facilities," number thirty-one, was also a measure of perception of the presence or absence of health care in the county.

The final significant factor, "Violent Crime," was represented by the general statement, number thirty-two: "I am seldom concerned about my personal safety." This was thought to register the respondent's perception of an element of violence in the county's social environment.

EXECUTION OF THE SURVEY

As it was not possible to survey all sixty-five counties due to limitations of time and of expense, a representative sample of the units of observation was selected. This selection was facilitated by CNGRP, a contiguity grouping program. This method was based upon the distances between factor scores when they were plotted on orthogonal axes in multi-dimensional space. Each of the sixty-five units of observation was considered as a separate group; the distance between a group and one of its counterparts was calculated as the square root of the sum of squares of differences of the two locations on each axis. Thus, the distance between any two groups could be determined. Two groups whose factor scores were relatively close would therefore have less distance between them than two groups with more disparate factor scores. On the basis of this, counties could be success-

ively grouped according to how closely they scored in the component analysis in Chapter 3. In the first step of this procedure, the two groups (counties) which were most alike in their factor scores, i.e., were separated by the minimum distance, were joined, thus creating a new group. Then the distances between the rest of the groups and this new entity were calculated and the next step joined the group to its nearest neighbor. This step-wise reduction of the original 65 x 65 matrix continued until the last group was joined to all units. Eventually all of the counties were joined into one massive group; it was possible, however, to distinguish groups which remained independent until late in the grouping procedure. This indicated that there were some differences which characterized these groups and set them apart from each other. Ten such groups were discerned in this analysis, meaning that the sixty-five units of observation could be broken down into ten groups each of which displayed some internal homogeneity. Selecting one county from each of these groups then would provide a representative sample of the original sixty-five counties.

Clay was chosen as the representative of the largest group of counties. Clark was independent until late in the grouping and so had to be considered as one of the sample groups. Republic was the last county to join the ultimate group, so it, too, was considered. Three groups, each

containing three members, were distinguished and from these Waubensee, Grant, and Stevens were selected. There were four groups that had two members each, and from these Woodson, Graham, Ellsworth, and Pawnee were chosen. These ten counties were then a representative sample of all study units and were counties to whose population the survey was sent.

A PROFILE OF SAMPLE COUNTIES

Clay had the largest population of the ten sample counties, Using its component scores from Chapter 3 (see Table 4.1), Clay's social profile indicated it to be a non-metropolitan-fringe county with moderate social stability. Its population was composed only in small part the elderly poor and is served by relatively few county health care facilities. The rate of violent crime in Clay exceeded that of non-violent crime.

Clark, located in southwest Kansas, had the least population of the study with 2,896 citizens. Its social profile indicated it to be a county with high socio-economic status, and whose vitality was not hindered in a remote location. Its population included only a small percentage of Blacks, it had a relatively low incidence of crime, either violent or non-violent, and it scored moderately low on the social stability dimension. The county provided a high level of health care facilities. It had few large and growing population centers (this last observation was supported by

TABLE 4.1
COMPONENT SCORES FOR SAMPLE COUNTIES

Component	Clay	Clark	Republic	Wabaunsee	Grant	Stevens	Woodson	Graham	Ellsworth	Pawnee
1	-.1060	1.8256	-.1448	-.8594	1.1567	2.5754	-1.4949	.1840	-.2242	.6931
2	-.4463	-.7667	.1747	-.5799	2.8233	.3020	.2095	-.3042	1.2227	-.2140
3	-.0941	-1.7190	-.1534	-.8594	2.0532	-.7126	.0711	-.3330	-.3391	.1479
4	-.3673	.3519	-7.4962	-.5799	.0990	-.5021	-.2342	-.2147	.2159	.1353
5	.1110	.2554	.1364	.6859	-1.149	.1405	-.5394	.3790	-.9259	-.2965
6	-.1903	-2.7530	.4964	.9078	-.7699	1.3083	-1.344	1.1818	-.8041	-2.1311
7	-.0464	-.5592	-.3630	3.9305	-.5857	.9939	-.2055	3.8293	.7515	2.6493
8	.3402	1.0826	.3384	.5608	-1.4803	-.9816	.9104	-1.4251	.3569	1.0870
9	-.7934	-1.2556	.6778	.6666	1.0063	-1.1078	.5897	.5374	1.9139	.0760
10	-.3112	1.8184	-.0955	.2893	.0633	-.7739	.0346	.7973	1.1963	-.3393
11	.7121	-1.6503	.5208	.6726	.6654	-.7910	-1.6708	-1.4424	-.0238	1.4960

a reported -14.7 percent change in population between 1960 and 1970).¹

Republic, a county of 8,498 persons, was the last to be joined in the contiguity grouping. Its component scores suggested the county to be a very socially stable area with moderate economic vitality. Its population included very few Blacks and only a small proportion of the elderly poor. Its rate for non-violent crime exceeded that for violent crime.

Wabaunsee a county of 6,379 persons in northeastern Kansas, is located between Topeka and Manhattan. It was characterized by low scores on socio-economic status and social disintegration ("Participation and Alienation"). The county was not an isolated socially stable area, but it did have communities with moderate growth rates (Alma recorded an 8.0 percent growth in population between 1960 and 1970).² Its population contained a relatively high mix of Blacks and it had almost equally high scores on both violent and non-violent crime. It ranked very high on the information richness factor, probably due to its proximity to Topeka, a local media center.

Grant, a southwestern county of 5,961, was characterized by high scores on the socio-economic status dimension, and on that dealing with larger and younger communities (it was the county with the tenth highest population growth rate for the state between 1960 and 1970).³ Grant scored low on the remoteness with economic vitality factor. Its

population included few Blacks and few of the elderly poor. The county suffered from a high crime rate in both violent and non-violent crime.

Stevens lies south of Grant county and, in 1970, had a population of 4,198. It was a peripheral, socially stable area with economic vitality plus high socio-economic status. It scored only moderately high on social disintegration and indicated no larger, younger, or rapidly expanding communities. Its population contained a moderately high mix of Blacks but few of the elderly poor, and these were served by very few county health care facilities. The county benefitted from low scores on violent and non-violent crime.

Woodson was located in the southeastern portion of the state and had a population of 4,789. It suffered from a very low socio-economic status and low information access relative to other counties. Many of its residents were the elderly poor and though it had a low violent crime rate, Woodson had a moderately high rate of non-violent crime.

The eighth sample county, Graham, located in northwestern Kansas, had 4,751 citizens, a moderately large percentage of whom were Black. It experienced low social disintegration and low economic vitality. Its population included a small percentage of the elderly poor and it benefitted from high number of local health care facilities and a moderately high score on information richness. Graham experienced a low violent crime rate and only a moderately high non-violent crime rate.

Ellsworth, located in central Kansas, had a population of 6,146 in 1970. Its component scores suggested a county with a low rate of social disintegration, low information richness, and low number of larger and younger communities (it ranked fifth from the lowest when counties were compared according to population growth from 1960 to 1970; in fact, its population change in that time was -19.9 percent).⁹ It scored very low on the "remoteness with economic vitality" factor. Its population included a low proportion of Blacks but a moderately high proportion of the elderly poor, served by a very high number of health care facilities. Ellsworth did experience a high rate of non-violent crime.

The last sample county, Pawnee, is located in the south-central part of the state and had a population of 8,484 in 1970. It experienced high socio-economic status and was not an isolated or remote area. Its population had high proportion of both Blacks and the elderly poor and these were served by few local county health facilities. The county suffered from a relatively high rate of violent crime.

One thousand surveys were mailed to these counties. The number of surveys sent to each county was based upon the proportion of population in that county to the combined population of all the sample counties. The distribution of surveys was as follows: Clay, 158; Republic, 136; Clark, 55; Stevens, 67; Waubensee, 102; Grant, 96; Woodson, 77; Graham, 158; Ellsworth, 98; and Pawnee, 134.

ANALYSIS OF THE DATA

Of the one thousand surveys mailed, 495 were received (not counting those returned unopened or not answered completely). This indicated a survey response of 49.5%. The response rate for individual counties was as follows: Clay, 49%; Clark, 62%; Republic, 52%; Waubensee, 59%; Grant, 46%; Stevens, 47%; Woodson, 41%; Graham, 44%; Ellsworth, 49%; and Pawnee, 48%. It was felt that such a substantial return provided an adequate sample of the survey population.

The first step in the analysis of the survey replies was to study the biographical data supplied by the respondents to determine whether the people sampled were representative of the counties' populations. In Table 4.2, the percentages of male, female, persons aged 18 to 64 and persons over 65 years of age were calculated for both the population and for the survey sample of each county. This enabled a cursory comparison of the two groups. As can be seen from the data presented, the survey respondents were generally older than the population and the percentage of males responding was greater than in the total population. These variations were attributed to the manner in which the survey was administered; the names chosen from the phonebooks were more often than not those of the male heads of households. The variation in the age factor was attributed to retired persons having more

TABLE 4.2
POPULATION AND SAMPLE PROFILES

County	% Male	Population		
		% Female	% 18-64 years	% 65 years
Clark	48.2	51.8	69.0	18.0
Clay	48.4	51.6	69.0	20.3
Ellsworth	49.0	51.0	69.2	19.2
Graham	50.4	49.6	62.3	13.1
Grant	50.3	49.7	59.2	5.6
Pawnee	49.4	50.6	70.9	15.4
Republic	48.5	51.5	71.2	21.5
Stevens	50.8	49.2	65.0	9.3
Wabaunsee	50.0	50.0	68.7	19.7
Woodson	49.0	51.0	71.3	32.2

Sample				
Clark	74.0	26.0	65.0	35.0
Clay	77.0	23.0	69.0	31.0
Ellsworth	77.0	23.0	79.0	21.0
Graham	71.0	29.0	76.0	24.0
Grant	68.0	32.0	89.0	11.0
Pawnee	73.0	27.0	68.0	32.0
Republic	77.0	23.0	71.0	30.0
Stevens	75.0	25.0	81.0	19.0
Wabaunsee	60.0	40.0	57.0	43.0
Woodson	74.0	26.0	68.0	32.0

available time in which to respond to a survey. It was noted that the response patterns within the sample populations, however, were remarkably similar. The average percentage of the respondents of all counties who were male was 72.5%. The average percentage of the respondents of all counties who were between the ages of 18 and 65 was 72.3%.

Testing for Discrepancies

Grant County exhibited such a large discrepancy in its age categories that it was necessary to determine whether or not this affected the response patterns. A Kolomogorov-Smirnov test was employed to see whether there were significant differences in how people ages 18 to 64 responded in comparison to people over 65 (Table 4.3). Statements eleven, thirteen, fifteen, and twenty-two were chosen for this test because they were thought to be the most sensitive to differences in age.

The Kolomogorov-Smirnov (K-S) test determines whether there is agreement between two sets of sample values. If the two vary significantly, then their cumulative distributions would exhibit a distinct difference. The test statistic (D) is the greatest difference recorded between the two cumulative frequencies. A cumulative frequency distribution is constructed for each group, using identical classifications for both. For each classification, the difference

TABLE 4.3
RESPONSE PATTERNS OF THE TWO AGE GROUPS IN GRANT COUNTY TO SELECTED STATEMENTS

statement no.	responses	response freq. 18-64	response freq. > 65	cum. response 18-64 (N_1)	cum. response > 65 (N_2)	18-64 cum. freq. as % (F_1)	> 65 cum. freq. as % (F_2)	$F_1 - F_2$
11	Strongly Agree	10	0	10	0	25	0	25
	Agree	23	4	33	4	56	100	-44
	Neutral	4	0	37	4	10	0	10
	Disagree	4	0	41	4	10	0	10
	Strongly Disagree	0	0	41	4	0	0	0
13	Strongly Agree	4	1	4	1	10	25	-15
	Agree	25	2	29	3	61	50	11
	Neutral	9	0	38	3	22	0	22
	Disagree	3	1	41	4	7	25	-18
	Strongly Disagree	0	0	41	4	0	0	0
15	Strongly Agree	2	0	2	0	5	0	5
	Agree	5	0	7	0	12	0	12
	Neutral	9	1	16	1	22	25	-3
	Disagree	23	3	39	4	56	75	-19
	Strongly Disagree	2	0	41	4	5	0	5
22	Strongly Agree	6	0	6	0	15	0	15
	Agree	19	2	25	2	46	50	-4
	Neutral	1	0	26	0	2	0	2
	Disagree	15	2	41	4	37	0	-13
	Strongly Disagree	0	0	41	4	0	0	0

between the two cumulative distributions is determined by subtraction; the largest difference is D. Using the equation:

$$D = 1.95 \frac{N_1 + N_2}{N_1 N_2}$$

one can determine the value of D at the .001 level. The resultant D can then be compared with the maximum D obtained from the earlier subtraction; then the hypothesis of congruancy is rejected at the chosen significance level. As demonstrated in Table 4.4, there are no significant differences between the response patterns of the different age groups in Grant County on these selected statements. If no significant difference existed in a county with so disparate an age pattern, then it was safe to assume that no significant differences would exist in the other counties' responses.

In Table 4.2, Clay and Waubensee had the most extreme distributions of male-female responses. If it could be determined that no significant differences existed between these two, then it could be assumed that no significant differences existed between the other, more similar counties.

A Chi Square test was used to determine whether these two counties differed significantly. Using the equation:

$$\chi^2 = \frac{N (ad-bc)^2}{(a+b) (c+d) (a+c) (b+d)}$$

it was possible to determine whether Clay and Waubensee differed significantly in terms of replies by sex. Table 4.5 shows the results of this test which indicate that, at

TABLE 4.4

KOLOMOGOROV-SMIRNOV TEST FOR SIGNIFICANCE OF THE D STATISTIC

Value of D so large as to call for rejection of no significant difference
where D = maximum at 0.0001 level

Statement 11

$$D_{\max} = -.44$$

$$1.95 \sqrt{\frac{n_1 + n_2}{n_1 n_2}} = 1.95 \sqrt{\frac{45}{164}} = 1.02$$

$$-.44 < 1.02$$

Therefore, there is no significant difference at the .001 level

Statement 13

$$D_{\max} = .22$$

$$.22 < 1.02$$

Therefore, there is no significant difference at the .001 level

Statement 15

$$D_{\max} = -.19$$

$$-.19 < 1.02$$

Therefore, there is no significant difference at the .001 level

Statement 22

$$D_{\max} = .15$$

$$.15 < 1.02$$

Therefore, there is no significant difference at the .001 level

TABLE 4.5
CLAY VS. WABAUNSEE
SEX REPLY COMPARISON

	Clay	Wabaunsee	
Male	58	35	93
Female	17	23	40
	75	58	133

$$\begin{aligned}
 x^2 &= \frac{N (ad - bc)^2}{(a+b)(c+d)(a+c)(b+d)} \\
 &= \frac{133 ((58 \times 23) - (35 \times 17))}{(93) (40) (75) (58)} \\
 &= 4.4885
 \end{aligned}$$

To accept Null Hypothesis

at .001, x^2 must be less than 10.827

at .01, x^2 must be less than 6.635

at .02, x^2 must be less than 5.412

So, we can accept the null hypothesis at .02 level.

the .02 level, there were no significant differences between the two.

So, the replies received from the survey presented samples generally older than the population's and favoring men. There were, however, no significant differences among the counties' respondents with respect to age and sex.

Profile of Sample Counties' Responses

The survey responses to selected statements did reflect some variation. To review these replies, a profile of how the sample counties responded to selected statements will be presented.

To see if responses differed among the sample counties, the percentages of votes for each category were computed. Selecting key statements which must clearly reflected the components, a table was constructed (Table 4.6) to determine deviations in county responses. The responses for Clark County on statements one, three and four are in agreement with Component One: where housing quality is high, then educational attainment is also high and the level of families living in poverty will be low. Statement seven, dealt with the most observable family pathology, divorce, the respondents from Clark considered their divorce rate to be low as did the respondents from the other counties, save Grant. In conjunction with low family pathology, there was, in response to statement eight, an expressed belief that voter interest

TABLE 4.6
GENERAL RESPONSE TRENDS ON SELECTED QUESTIONS

Statement No.	1	3	4	7	8	11	13	16	20	21	22	24	27	28	30	32	35	
Woodson	+	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	+	
Wabaunsee	+	-	+	+	+	+	-	*	-	-	-	-	+	-	+	+	+	** 0 = .48 - = .79
Stevens	+	-	+	+	+	+	+	0	-	-	-	-	-	-	+	+	+	
Republic	+	-	+	+	+	-	-	-	-	-	-	-	**	-	+	+	+	
Pawnee	+	-	+	+	+	-	-	-	-	-	-	-	-	-	+	+	+	
Grant	+	-	+	-	+	+	+	+	0	-	0	+	-	-	+	+	+	* + = .39 - = .39
Graham	+	-	+	+	+	-	-	-	-	-	-	-	-	-	+	+	+	
Ellsworth	+	-	+	+	+	-	-	-	-	-	-	-	-	-	+	+	+	
Clay	+	-	+	+	+	-	-	0	-	-	-	-	+	-	+	+	+	
Clark	+	-	+	+	+	-	-	-	-	-	+	-	-	-	+	+	+	+ = Positive 0 = Neutral - = Negative

in national elections was high in Clark. Responses to eleven and thirteen indicated that people perceived no noticeable growth in this county, and they did feel that the age structure was youthful. Nor, looking at the response for statement twenty-seven, did they think that the elderly poor and minority groups commanded any sizeable proportion of the population's composition.

Clay County's respondents agreed with Clark's on statements one, three and four which dealt with socioeconomic status: they believed that their county generally had good quality housing, high educational attainment on the part of its citizens, and few families lived below the poverty level. The respondents also saw little in terms of a high divorce rate or lack of participation in the democratic process; they had no opinion at all as to the abortion rate. They felt that their communities were not experiencing any perceptible population growth nor were their populations becoming increasingly younger. Unlike Clark's respondents, Clay felt that their county's location was not an isolated one. Like Clay, however, they thought available library facilities were neglected by their fellow citizens. No perceptible unemployment rate had visited itself upon the county. Minorities were not thought an important percentage of the population, but there was a strong consensus of opinion that there were many of the elderly poor in their ranks. They did not feel that their county had a great

property crime rate nor were they alarmed about the violent crime rate. The availability of doctors was seen as a problem, but, all things considered, the respondents thought that their quality of life was good.

Ellsworth County's respondents perceived their housing standards and levels of educational attainment to be high, while the number of poverty-stricken families was perceived to be low. In terms of social disintegration, they saw a low abortion and divorce rate and high voter participation. Neither growth nor an increasing number of young people was believed to reflect the population there. The county itself was not thought to be in a peripheral location. Its citizens did not see themselves as frequent patrons of local library facilities, nor did they feel that they were threatened with unemployment. Neither minorities nor the elderly poor were perceived as composing a great percentage of the population. Crime, whether non-violent or violent, was not believed to be high in Ellsworth. A shortage of doctors was seen as a disadvantage. The Ellsworth respondents felt that their quality of life was good.

Graham County's responses did not differ significantly from Ellsworth's. Grant, on the other hand, differed in many ways. Its respondents did agree with the other counties that levels of housing quality and educational attainment were high. The Grant respondents were the only ones in the nine counties who thought that there was high interest in national elections in the county. Unlike the others, they perceived that the county was experiencing population growth

and an increasing number of this growing population were young people. They, like the people of Clay, expressed no definite opinion on the abortion rate in the county, and, like Clark, felt themselves to be isolated. No consensus of opinion was volunteered for usage of library facilities and unemployment was not thought to be an important factor. Where the previous counties saw no sizeable percentage of minorities in the population, Grant citizens voted in affirmation of that statement (24). They did not, however, feel that the population included many of the elderly poor. Non-violent and violent crime were considered major elements in Grant's social environment. Like the others, the respondents did not believe that the number of doctors in the county was sufficient to serve it adequately. Although their response patterns differed from the previous counties', the Grant people saw their quality of life as good.

The Pawnee and Republic people surveyed offered response patterns identical to that of Ellsworth and Graham counties, except that in Republic's vote on the number of elderly poor, the percentages were split; 39% in agreement and 39% not in agreement with the statement.

In Stevens County's response pattern, the consensus of opinion concerning levels of educational attainment, average family income, and housing quality were high. Rates for abortion and divorce were considered low in the county,

while voter interest in national elections was considered high. They felt that their county's population was increasing and that a greater percentage of the population was composed of younger people. The county, while thought to have a shortage of doctors, was not perceived as isolated. No consensus of opinion was reached concerning library facilities. Unemployment was not considered a serious problem in Stevens. Neither minorities nor the elderly poor were perceived as major components in the population, and neither violent nor non-violent crime was thought to be extreme there. As with the others, the Stevens people believed that their quality of life was good.

Wabaunsee response pattern differed from Graham's in only two respects. The respondents in the county felt that the population was growing, although they could detect no increase in percentage of young people. They did, however, believe that a considerable part of the population was composed of the elderly poor. The vote on abortion was in disagreement with the statement (16), but the disagreement was very weak; the votes for disagreement exceeded those for the neutral category by a mere one percent.

Woodson, the last of the ten counties, differed somewhat from Stevens in its replies. While its respondents saw housing quality and incomes as high, they believed the level of educational attainment was low. They saw the elderly

poor as a substantial part of the county's population. Like all other nine sample counties, the respondents from Woodson believed that their quality of life was good.

CONCLUSIONS

To obtain a measurement of life quality, a survey was developed whose statements were based upon the social well-being components determined in Chapter 3. One thousand respondents in ten sample counties were asked to complete the survey, registering their disagreement, agreement or lack of opinion on each statement. Discrepancies in age and sex of respondents were tested; no significant variation was found.

In the following chapter, these life quality measurements will be compared with the social well-being components to see if the sets are congruent. It has been previously hypothesized that they will not be congruent factors, that there are two geographies of social conditions which we must consider if we want to understand the social landscape.

MATERIALS CITED

1. Flora, Cornelia B., (Supervisor), Reference Tables: Population Change of Counties and Incorporated Places in Kansas, 1950-1970. (Manhattan, Kansas: K.S.U. Agriculture and Applied Science, Ag. Experiment Station, 1975).
2. Ibid., p. 78.
3. Ibid., p. 11.
4. Ibid., p..64.

Chapter 5

COMPARISON BETWEEN SOCIAL WELL-BEING AND PERCEIVED LIFE QUALITY COMPONENTS

The latter of the two-step modelling process introduced in the initial chapter of this text was the comparison of the social well-being components reported in Chapter 3 and the obtained survey information discussed in Chapter 4. The proposal that these two sets of data are not congruent is assessed in this chapter. If insignificant association between the two variable sets is obtained, then incongruency would be indicated; if, however, the two have a significant positive association, then there would be no significant difference between them. Incongruency is vital for support of this research's covering hypothesis; if it is not supported, then the indication would be that there is no detectable difference between the more objectively measurable indices for social well-being and the way in which people perceive their quality of life.

Tests of association rely upon the Spearman Rank Correlation Coefficient (r_s or r_{ho}). The test requires that two sets of scores be compared by obtaining the differences in their ranks, and that the differences be squared and then

the square of the differences be summed. The resulting values are substituted in the following equation:

$$r_s = \frac{1 - \frac{\sum_{i=1}^N D_i^2}{N(N^2-1)}}{1}$$

where:

D_i^2 = the squared differences between the ranks; and
 N = the number of units of observation

In testing the significance of r_s , a table of critical values for the rank correlation coefficient may be used (see Table 5.1). A lack of significant association between the two variable sets under study was hypothesized. It was expected that the hypothesis of no association would be accepted in the comparisons. This would support the alleged lack of congruency between the perceived data and the social well-being components.

As explained in Chapter 4, each component's defining variables were paralleled by corresponding statements in the survey; replies to the statements could be in agreement, in disagreement, or be neutral. In this present comparison, the percentage of responses for the reply (agreement or disagreement) which most closely corresponded with the scores of the component's defining variables was calculated for each of the sample counties. The percentages were then ranked from highest to lowest (for example, see Table 5.2). The factor score obtained by each sample county was also listed, then

TABLE 5.1

CRITICAL VALUES OF r_{ho} (Rank-Order Correlation Coefficient)

n*	level of significance for one-tailed test			
	.05	.025	.01	.005
	level of significance for two-tailed test			
	.10	.05	.02	.01
5	.900	1.00	1.000	----
6	.829	.886	.943	1.000
7	.714	.786	.893	.929
8	.643	.738	.833	.881
9	.600	.683	.783	.833
10	.546	.648	.746	.794
12	.506	.591	.712	.777
14	.456	.544	.645	.715
16	.425	.506	.601	.665
18	.339	.475	.564	.625
20	.377	.450	.534	.591
22	.359	.428	.508	.562
24	.343	.409	.485	.537
26	.329	.392	.465	.515
28	.317	.377	.448	.496
30	.306	.364	.432	.478

*n=number of pairs

SOURCE:

Siegel, Sidney Non-parametric Statistics for the Behavioral Sciences
 (New York: McGraw-Hill, 1956).

ranked from highest to lowest. The "reply" rankings for each county were subtracted from that of the factor scores and the resultant remainder was squared. The sum of these squares was calculated and then incorporated into the equation given before. In this way, the association (or lack of association) between the two could be indicated.

RESULTS OF THE SPEARMAN RANK CORRELATION TESTS

The first component, "Socio-Economic Status," had high loadings on defining variables which dealt with educational attainment, quality housing, and income; it had a low loading on the number of families whose annual income was below \$3,000. The first four survey statements (see the Appendices for a complete copy of the survey document) dealt specifically with these defining variables; the fifth asked for a more general opinion about the county's socio-economic status. If they were in accordance with the component factor loadings (see Table 3.2), the greatest percentage of responses would indicate agreement with statements one and four of the survey and disagreement with statements two and three. In looking at the obtained correlations for the statements associated with the first component (see Table 5.2), one can see that the results were mixed. While tests for statements one, two, and four indicated no association at the .01 level, the r_s for two and four suggest that the more objectively

TABLE 5.2

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Socio-Economic Status
Component One

County	% Replies in Agree- ment with statement one	Factor Scores	Rank of Factor Scores	Rank of Replies for statement one	D_1	D_1^2
Clark	.58	1.8256	2	9	-7	49
Clay	.65	-.1060	6	5	1	1
Ellsworth	.61	-.2242	8	6	2	4
Graham	.59	.1840	5	7.5	-2.5	6.25
Pawnee	.44	1.1567	3	10	-7	49
Republic	.83	.6831	4	1	3	9
Stevens	.72	-.1448	7	3.5	3.5	12.25
Waubansee	.74	-.8594	9	2	7	49
Woodson	.59	-1.4949	10	7.5	2.5	6.25
						192.00

$$r_s = .164$$

No association at .01

County	% Replies in dis- agreement with statement two	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.80	1.8256	2	2	0	0
Clay	.61	-.1060	6	9	-3	9
Ellsworth	.65	.2242	8	8	0	0
Graham	.74	1.1567	3	3	0	0
Pawnee	.69	.6831	4	5	-1	1
Republic	.68	-.1448	7	6.5	.5	.25
Stevens	.85	2.5754	1	1	0	0
Waubansee	.55	-.8594	9	10	-1	1
Woodson	.72	-1.4949	10	4	6	36
						49.5

$$r_s = .7$$

No association at .01

TABLE 5.2 (Continued)

County	% Replies in Dis- agreement with #3	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.61	1.8256	2	3	-1	1
Clay	.54	-.1060	6	6	0	0
Ellsworth	.55	-.2242	8	5	3	9
Graham	.44	.1840	5	8.5	-3.5	12.25
Grant	.58	1.1576	3	4	-1	1
Pawnee	.67	.6831	4	2	2	4
Republic	.51	-.1448	7	7	0	0
Stevens	.72	2.5754	1	1	0	0
Waubansee	.44	-.1894	9	8.5	.5	.25
Woodson	.34	-1.4949	10	10	0	0
						<u>27.5</u>

$$r_s = .833$$

Association at .01

County	% Replies in agreement with #4	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.84	1.8256	2	2	0	0
Clay	.66	-.1060	6	5	1	1
Ellsworth	.73	-.2242	8	4	4	16
Graham	.59	.1840	5	8	-3	9
Grant	.60	1.1567	3	7	-4	16
Pawnee	.74	.6831	4	3	1	1
Republic	.61	-.1448	7	6	1	1
Stevens	.85	2.5754	1	1	0	0
Waubansee	.42	-.8594	9	9	0	0
Woodson	.34	-1.4949	10	10	0	0
						<u>42</u>

$$r_s = .745$$

No association at .01

measured data for education and the perception people in the counties have of their educational systems' effectiveness are not as disparate as was hypothesized. There was association between statement three and the factor scores obtained by the sample counties for Component One. This suggested that there was no incongruency between the income data obtained from the Census and the perception the respondents have concerning incomes in their counties.

While the associations in Component One were mixed, the associations for the remaining components' statements unanimously supported the covering hypothesis of incongruency.

There was no association at the .01 significance level in any tests for statements representing Component Two, "Alienation and Participation" (see Table 5.3). This component loaded high on divorce rate, rate for high school drop-outs, and media access; it loaded low on voter participation. Statements six through ten on the survey represented this component with statement six being an indicator of the general nature of the component. If the replies to the survey corresponded with the component loadings, responses would be in agreement with statement nine (that there was a high drop-out rate in the county), and in disagreement with statements seven, eight, and ten. In Table 5.3, the r_s calculations revealed that the hypothesis of no significant association was accepted at the .01 level. This suggested that there was no significant correlation between the way

TABLE 5.3

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Participation and Alienation
Component Two

County	% Replies in Dis- agreement with #7	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.06	-.7667	8	9	-1	1
Clay	.25	.4463	2	4	-2	4
Ellsworth	.22	-1.2227	10	5	5	25
Graham	.27	-.3047	6	3	3	9
Grant	.49	2.8336	1	1	0	0
Pawnee	.21	-.2140	5	6	-1	1
Republic	.14	-.8338	9	8	1	1
Stevens	.28	.3020	3	2	1	1
Waubensee	.05	-.5799	7	10	-3	9
Woodson	.18	.2095	4	7	-3	9
						60

$$r_s = .636$$

No association at .01

County	% Replies in Dis- agreement with #8	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.19	-.7667	8	7	1	1
Clay	.35	.4463	2	1	1	1
Ellsworth	.18	-1.2227	10	8	2	4
Graham	.24	-.3047	6	5	1	1
Grant	.09	2.8336	1	9.5	-8.5	72.25
Pawnee	.27	-.2140	5	4	1	1
Republic	.31	-.8338	9	2	7	49
Stevens	.09	.3020	3	9.5	-6.5	42.25
Waubensee	.20	-.5799	7	6	1	1
Woodson	.23	.2095	4	3	1	1
						173.5

$$r_s = .052$$

No association at .01

TABLE 5.3 (Continued)

County	% Replies in Agreement with #9	Factor Scores	Rank of Factor Scores	Rank of Replies	D_i	D_i^2
Clark	.00	-.7667	8	10	-2	4
Clay	.06	.4463	2	6.5	-4.5	20.25
Ellsworth	.12	-1.2227	10	1.5	8.5	72.25
Graham	.06	-.3047	6	6.5	-.5	.25
Grant	.11	2.8336	1	3	-2	4
Pawnee	.08	-.2140	5	5	0	0
Republic	.04	-.8388	9	9	0	0
Stevens	.09	.3020	3	4	-1	1
Waubensee	.05	.5799	7	8	-1	1
Woodson	.12	.2095	4	1.5	2.5	6.25
						109.00

$$r_s = .339$$

No association at .01

County	% Replies in Dis-agreement with #10	Factor Scores	Rank of Factor Scores	Rank of Replies	D_i	D_i^2
Clark	.81	-.7667	8	1	7	49
Clay	.65	.4463	2	5	-3	9
Ellsworth	.55	-1.2227	10	9	1	1
Graham	.56	-.3047	6	8	-2	4
Grant	.67	2.8336	1	4	-3	9
Pawnee	.62	-.2140	5	6.5	-1.5	2.25
Republic	.74	-.8388	9	2	7	49
Stevens	.72	.3020	3	3	0	0
Waubensee	.62	.5799	7	6.5	.5	.25
Woodson	.50	.2095	4	10	-6	36
						159.5

$$r_s = .033$$

No association at .01

people viewed social disintegration in their community and the way their county scored in the factor analysis on this component.

Component Three, "Larger and Younger Communities," had high and positive loadings on housing density, health-care workers for the population, and recreational expenditures, indicating a younger and growing populace (this was supported in the discussion in Chapter 3). Statements eleven through fifteen represented this component, with statement fifteen asking for a more general appraisal of the component as a whole while the others paralleled the defining variables more exactly. If they were in accordance with the loadings in the component, responses would indicate agreement with statements eleven, thirteen, and fourteen and disagreement with statement twelve. The calculated r_s for these cases (see Table 5.4) indicate a very low correlation between the two sets, insignificant association at .01. This correlation supported the covering hypothesis of the research: there was no congruency between social well-being and perceived life quality.

The fourth component, "Socially Stable Isolated Areas," profiled counties with low loadings on the suicide and abortion rates and on access to local media. Statements sixteen and seventeen--"The abortion rate is high in my county" and "I feel that I'm well-informed"--represented this dimension in the survey responses. If they corresponded to the

TABLE 5.4
An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Larger and Younger Communities
Component Three

County	% Replies for #11	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.13	-1.7190	10	9	1	1
Clay	.26	-.0941	4	7	-3	9
Ellsworth	.22	-.3391	6	8	-2	4
Graham	.32	-.6544	8	5	3	9
Grant	.82	-.4833	7	1	6	36
Pawnee	.33	.1479	2	4	-2	4
Republic	.27	-.1534	5	6	-1	1
Stevens	.47	-.7126	9	2	7	49
Waubansee	.42	.6859	1	3	-2	4
Woodson	.16	.0711	3	10	-7	49
						<u>164</u>

$$r_s = .006$$

No association at .01

County	% Replies in Dis-Agreement with #12	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.78	-1.7190	10	1	9	81
Clay	.48	-.0941	4	4	0	0
Ellsworth	.39	-.3391	6	8	-2	4
Graham	.38	-.6544	8	9	-1	1
Grant	.47	-.4833	7	5	2	4
Pawnee	.59	.1479	2	2	0	0
Republic	.52	-.1534	5	3	2	4
Stevens	.40	-.7126	9	6.5	2.5	6.25
Waubansee	.24	.6859	1	10	-9	81
Woodson	.40	.0711	3	6.5	-3.5	12.25
						<u>193.5</u>

$$r_s = .173$$

No association at .01

County	% Replies in Agreement with #13	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.29	-1.7190	10	4	6	36
Clay	.19	-.0941	4	6	-2	4
Ellsworth	.16	-.3391	6	9	-3	9
Graham	.18	-.6544	8	7.5	.5	.25
Grant	.69	-.4833	7	1	6	36
Pawnee	.27	.1479	2	5	-3	9
Republic	.31	-.1534	5	3	2	4
Stevens	.42	-.7126	9	2	7	49
Waubansee	.18	.6859	1	7.5	-6.5	42.25
Woodson	.06	.0711	3	10	-7	49
						<u>238.5</u>

$$r_s = .445$$

No association at .01

County	% Replies in Agreement with #14	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.10	-1.7190	10	3.5	6.5	42.25
Clay	.09	-.0941	4	5	-1	1
Ellsworth	.08	-.3391	6	6	0	0
Graham	.03	-.6544	8	9	-1	1
Grant	.02	-.4833	7	10	-3	9
Pawnee	.18	.1479	2	2	0	0
Republic	.10	-.1534	5	3.5	1.5	2.25
Stevens	.06	-.7126	9	8	1	1
Waubansee	.07	.6859	1	7	-6	36
Woodson	.19	.0711	3	1	2	4
						<u>94.50</u>

$$r_s = .427$$

No association at .01

component's loadings the replies would indicate disagreement with both statements. The calculated r_s (see Table 5.5) for each of the two indicate extremely low associations, .042 and -.127 respectively, and no significant association at the .01 level.

The fifth component, "Information Richness," profiled counties with high access to and use of library facilities and high local media access. Statements eighteen through twenty reflected this component in the survey document. If perceived quality of life responses correspond to the variable loadings on this component, then agreement would be expected for all three of the survey statements. In Table 5.6 the calculated r_s for each of the statements indicated negative correlations on cases eighteen and twenty and an extremely low positive correlation (.148) in case nineteen. All calculated r_{ho} were not significant at the .01 level. There was, then, no correlation between how people perceived information richness in their counties and the factor scores their counties received in the component analysis.

"Remoteness with Economic Vitality" was the sixth component; it characterized counties according to unemployment, violent deaths, and dentists per 1,000 persons. Statements twenty-one through twenty-three on the survey were designed to reflect these variables. If perception of this dimension corresponded with the data for the social aggregate, then disagreement would be expected for statement twenty-one

TABLE 5.5

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Socially Stable Isolated Areas
Component Four

County	% Replies in Dis- agreement with #16	Factor Scores	Rank of Factor Scores	Rank of Replies	D ₁	D ₁ ²
Clark	.72	.3519	2	1	1	1
Clay	.48	-.3673	8	9	-1	1
Ellsworth	.67	.2159	3	2	1	1
Graham	.53	-.2147	6	7	-1	1
Grant	.40	.0993	5	10	-5	25
Pawnee	.54	.1353	4	6	-2	4
Republic	.60	-.74962	10	4	6	36
Stevens	.66	-.5021	9	3	6	36
Waubansee	.49	.9078	1	8	-7	49
Woodson	.57	-.2342	7	5	2	4
						<u>158.00</u>

$r_s = .04234$

No association at .01

County	% Replies in Dis- agreement with #17	Factor Scores	Rank of Factor Scores	Rank of Replies	D ₁	D ₁ ²
Clark	.06	.3519	2	9	-7	49
Clay	.11	-.3673	8	5	3	9
Ellsworth	.10	.2159	3	6	-3	9
Graham	.15	-.2147	6	3	3	9
Grant	.09	.0993	5	7	-2	4
Pawnee	.05	.1353	4	10	-6	36
Republic	.07	-7.4962	10	8	2	4
Stevens	.18	-.5021	9	2	7	49
Waubansee	.14	.9078	1	4	-3	9
Woodson	.19	-.2342	7	1	6	36
						<u>186</u>

$r_s = -.127$

No association at .01

TABLE 5.6

An assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Information Richness
Component Five

County	% Replies in Agree- ment with #18	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.13	.2254	3	10	-7	49
Clay	.31	.1110	6	8	-2	4
Ellsworth	.43	-.9259	9	3	6	36
Graham	.38	.3790	2	4	-2	4
Grant	.18	-1.1149	10	9	1	1
Pawnee	.45	-.2965	7	2	5	25
Republic	.36	.1364	5	6	-1	1
Stevens	.47	.1405	4	1	3	9
Waubansee	.35	3.9305	1	7	-6	36
Woodson	.37	-.5394	8	5	3	9
						<u>174</u>

$$r_s = -.055$$

No association at .01

County	% Replies in Agreement with #19	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.62	.2554	3	9	-6	36
Clay	.79	.1110	6	4	2	4
Ellsworth	.63	-.9259	9	8	1	1
Graham	.80	.3790	2	2.5	-.5	.25
Grant	.75	-1.1149	10	6	4	16
Pawnee	.95	-.2965	7	1	6	36
Republic	.80	.1364	5	2.5	2.5	6.25
Stevens	.76	.1405	4	5	-1	1
Waubansee	.65	3.9305	1	7	-6	36
Woodson	.56	-.5394	8	10	-2	4
						<u>140.5</u>

$$r_s = .14849$$

No association at .01

122

County	% Replies in Agreement with #20	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.16	.2554	3	9	-6	36
Clay	.22	.1110	6	6	0	0
Ellsworth	.20	-.9259	9	7.5	1.5	2.25
Graham	.29	.3790	2	4	-6.5	42.25
Grant	.40	-1.1149	10	1	9	81
Pawnee	.31	-.2965	7	2.5	4.5	20.25
Republic	.26	.1364	5	5	0	0
Stevens	.31	.1405	4	2.5	1.5	2.25
Waubansee	.20	3.9305	1	7.5	-6.5	42.25
Woodson	.09	-.5394	8	10	-2	4
						<u>192</u>

$r = -.16363$
 No association at .01

while twenty-two and twenty-three would have registered agreement among the respondents. The calculated r_s for these comparisons, found in Table 5.7, indicated that, at the .01 significance level, there was no association between the two sets. Hence, the covering hypothesis was once again supported by research findings.

The racial composition factor, the seventh component, was characterized by a high degree of Black presence in the county. Survey statements twenty-four and twenty-five reflected this dimension, though the latter asked for additional attitudinal information and the former did not specify a Black presence exclusively. (Comments included in the survey responses indicated a Mexican-American presence as well as a strong resentment of any territorial encroachment by members of a minority). A calculated rank correlation coefficient for statement twenty-four (see Table 5.8) indicated no association at the .01 significance level. There was, then, no association at the between the perception of racial composition and the parallel factor scores.

Component Eight, "The Elderly Poor," was distinguished by loadings on the proportion of the elderly in the population as well as the amount of county aid for the elderly. Survey statements twenty-six and twenty-seven reflected these elements and agreement was expected for each statement. In Table 5.9, the calculated r_s for each entry indicates very low correlations for both, .131 and .303. There was no

TABLE 5.7

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Remoteness With Economic Vitality
Component Six

County	% Replies in Dis- agreement with #21	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.84	-2.753	10	1	9	81
Clay	.55	-.1903	6	8	-2	4
Ellsworth	.72	-.1259	8	4	4	16
Graham	.62	1.1818	2	6	-4	16
Grant	.78	-.7699	7	2	5	25
Pawnee	.74	-2.1311	9	3	6	36
Republic	.48	.4964	4	9	-5	25
Stevens	.63	1.3083	1	5	-4	16
Waubansee	.60	.5608	3	7	-4	16
Woodson	.47	-.1344	5	10	-5	25
$r_s = -.576$						260

No association at .01

County	% Replies in Agreement with #22	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.54	-2.753	10	2	8	64
Clay	.26	-.1903	6	6	0	0
Ellsworth	.14	-.9259	8	9	-1	1
Graham	.41	1.1818	2	3	-1	1
Grant	.60	-.7699	7	1	6	36
Pawnee	.11	-2.1311	9	10	-1	1
Republic	.19	.4964	4	8	-4	16
Stevens	.34	1.3083	1	4	-3	9
Waubansee	.20	.5608	3	7	-4	16
Woodson	.28	-.1344	5	5	0	0
						144

$r_s = .127$

No association at .01

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Racial Composition
Component Seven

County	% Replies in agreement with statement 24	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.03	- .5592	8	9	-1	1
Clay	.05	- .0464	5	8	-3	9
Ellsworth	.18	- .7515	10	5	5	25
Graham	.21	3.8293	1	3	-2	4
Grant	.71	- .5857	9	1	8	64
Pawnee	.19	2.6493	2	4	-2	4
Republic	.06	- .3630	7	7	0	0
Stevens	.34	.9939	3	2	1	1
Waubansee	.02	.6666	4	10	-6	36
Woodson	.12	- .2055	6	6	0	0
						<u>144</u>

$$r_s = .1272$$

No association at .01

association between the social well-being components and the responses to the survey on questions relating to the elderly presence in the community; there was no significant association between either group at the .01 level.

The ninth component, "Non-Violent Crime," loaded high and positive on property crime and county jail and prisoner expenses. Statements twenty-eight and twenty-nine were reflective of these defining variables. It was expected that, if the perception of the dimension corresponded with the defining variables, that agreement would be found for both. Table 5.10 presented the rank correlation coefficients for the comparison. At the .01 significance level, there was no association indicated between perception of violent crime and the corresponding component scores.

"Health-care Facilities," the tenth component, loaded high and positively on access to physicians, hospital beds, and it loaded low in the percent of deaths due to infections. The survey statements designed to reflect this dimension were thirty and thirty-one. Agreement was expected for both statements. In calculating the rank correlation coefficient (Table 5.11), and comparing the resulting r_{ho} with the values in Table 5.1, there is no association at the .01 significance level between the two sets of scores.

Statement thirty-two reflected the last component, a weak "Violent Crime" dimension. Disagreement was expected for the statement if the responses to it corresponded to the

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: The Elderly Poor
Component Eight

County	% Replies in agreement with statement 26	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.58	1.0826	2	1	1	1
Clay	.46	.3402	5	2	3	9
Ellsworth	.42	.3569	4	5.5	-1.5	2.25
Graham	.38	- 1.4251	10	7	3	9
Grant	.42	- 1.4803	9	5.5	3.5	12.25
Pawnee	.30	1.0870	1	9.5	-8.5	72.25
Republic	.44	.3384	6	3.5	2.5	6.25
Stevens	.34	- .9816	8	8	0	0
Wabaunsee	.30	.2893	7	9.5	-2.5	6.25
Woodson	.44	.9104	3	3.5	- .5	.25
$r_s = .1318$						143.25

No association at .01

County	% Replies in agreement with statement 27	Factor Scores	Rank of Factor Scores	Rank of Replies	D ₁	D ₁ ²
Clark	.22	1.0826	7	2	5	25
Clay	.50	.3402	2	5	-3	9
Ellsworth	.28	.3569	6	4	2	4
Graham	.32	-1.4251	5	10	-5	2
Grant	.13	-1.4803	10	9	1	1
Pawnee	.20	1.0870	8	1	7	49
Republic	.39	.3384	4	6	-2	4
Stevens	.16	-.9316	9	8	1	1
Wabaunsee	.45	.2893	3	7	-4	16
Woodson	.57	.9104	1	3	-2	4
						<u>115</u>

$$r_s = .303$$

No association at .01

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Non-Violent Crime
Component Nine

County	% Replies in Agreement with statement 28	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.06	-1.2556	10	9	1	1
Clay	.14	-.7934	8	7	1	1
Ellsworth	.04	1.9139	1	10	-9	81
Graham	.24	.5374	6	4	2	4
Grant	.31	1.0063	2	2	0	0
Pawnee	.39	.0760	7	1	6	36
Republic	.18	.6778	3	5	-2	4
Stevens	.09	-1.1078	9	8	1	1
Wabaunsee	.15	.6726	4	6	-2	4
Woodson	.28	.5897	5	3	2	4
$r_s = .17546$						136

No association at .01

County	% Replies in Agreement with statement 29	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.12	-1.2556	10	7	3	9
Clay	.13	-.7934	8	5	3	9
Ellsworth	.22	1.9139	1	1	0	0
Graham	.18	.5374	6	2	4	16
Grant	.02	1.0063	2	10	-8	64
Pawnee	.15	.0760	7	3	4	16
Republic	.03	.6778	3	9	-6	36
Stevens	.06	-1.1078	9	8	1	1
Wabaunsee	.13	.6726	4	5	-1	1
Woodson	.13	.5897	5	5	0	0
$r_s = .07879$						152

No association at .101

TABLE 5.11

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: Health Care Facilities
Component Ten

129

County	% Replies in agreement with statement 30	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.77	1.8184	1	6.5	-5.5	30.25
Clay	.77	-.3112	8	6.5	1.5	2.25
Ellsworth	.86	1.1963	2	3	-1	1
Graham	.74	.7973	3	10	-7	49
Grant	.87	.0633	4	2	2	4
Pawnee	.75	-.3393	9	9	0	0
Republic	.70	-.0955	6	8	-2	4
Stevens	.81	-.7739	10	5	5	25
Wabaunsee	.90	-.2426	7	1	6	36
Woodson	.84	.0346	5	4	1	1
$r_s = .07576$						152.5
No association at .01						

County	% Replies in agreement with statement 31	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.81	1.8184	1	2	-1	1
Clay	.72	-.3112	8	4	4	16
Ellsworth	.65	1.1963	2	7	-5	25
Graham	.71	.7973	3	5	-2	4
Grant	.68	.0633	4	6	-2	4
Pawnee	.80	-.3393	9	3	6	36
Republic	.84	-.0955	6	1	5	25
Stevens	.59	-.7739	10	8	2	4
Wabaunsee	.13	-.2426	7	10	-3	9
Woodson	.22	.0346	5	9	-4	16
$r_s = .15162$						140
No association at .01						

TABLE 5.12

An Assessment of Association Between Social Well-Being Components
And Quality of Life Survey: "Weak" Violent Crime
Component Eleven

County	% Replies in disagreement with statement 32	Factor Scores	Rank of Factor Scores	Rank of Replies	D_1	D_1^2
Clark	.52	-1.6503	9	10	-1	1
Clay	.72	.7121	2	4	-2	4
Ellsworth	.65	-.0238	6	7	-1	1
Graham	.80	-1.4424	8	2	6	36
Grant	.69	.6654	3	5.5	-2.5	6.25
Pawnee	.73	1.4960	1	3	-2	4
Republic	.69	.5208	5	5.5	-.5	.25
Stevens	.82	-.7910	7	1	6	36
Wabaunsee	.63	.6650	4	8	-4	16
Woodson	.60	-1.6708	10	9	1	1
$r_s = .36060$						<u>105.5</u>

No association at .01

component's loadings. The calculated r_s , presented in Table 5.12 was .36060. When this was compared with Table 5.1, no association was indicated between perception and component scores.

SUMMARY

This chapter marked the culmination of the research effort to determine if social well-being and perceived quality of life components were actually distinct entities. If this were the case, then the research conducted previously using just the more objective data for the social aggregate--social well-being analysis--did not account for a very significant element on the social landscape; i.e., how the residents themselves perceived their lives and how content they were with their situation. This would suggest a problem with social planning: how does one effect social change without taking into account all measurable interrelationships possible? Such action would be parallel to trying to alter the physical landscape without first considering relationships between surface, substructure, and the other elements involved.

Except for a small variation in Component One, the tests conducted in this chapter indicated that there was no significant association between the two sets at the .01 significance level. There are then two geographies of social

conditions, one based upon analysis of census and similar data and the other upon how people view their quality of life. If our knowledge of the social landscape is to be complete, we must then give both perspectives equal consideration; one approach alone is neither sufficient nor comprehensive.

Chapter 6

SUMMARY AND CONCLUSIONS .

Concern for the improvement of social conditions in the United States has generated many legislative programs, "wars" on poverty and illiteracy, and debates over public welfare systems. But substantial improvement in the well-being of American society depends upon a more complete understanding of such conditions, of the variables and the forces which define them. Serious efforts have been made by social scientists to isolate these defining components, thus developing a series of indicators which could be used to describe and monitor change in the nation's social state. But the list so far constructed has neglected consideration of scale and setting in describing social conditions and it has ignored an essential, parallel list of indicators reflecting satisfaction with life quality.

The goal of the present research was two-fold: to assess the influence of scale and setting variation on social well-being components when variables and method of analysis remain constant; and to test for congruency between the more "objective" well-being indicators and the perceived life quality of persons living within the units of observation.

The initial step was to create a list of social well-being indicators for a unit which had a different scale and setting than those previously studied, using variables and a methodology employed in the earlier studies. Sixty-five rural counties in Kansas were selected on the basis of size of population centers and lack of major institutions. Fifty variables similar to those used by Smith and Wilson in their studies were collected for each county and then subjected to principal components analysis. The resultant eleven social well-being components were compared to those for the state and urban studies to see what effect the change in scale and setting had upon the outcome. Two significant patterns emerged from the county study: the peripheral location of the counties was strongly characterized by lack of accessibility to medical and recreational facilities; and the importance of elements of social disintegration such as suicide rates, the number of violent deaths, and that of divorces, was sharply decreased. The patterns differed from the other studies, supporting the thesis that scale and setting do measurably influence test results. Such findings may be elementary to geographers who have dealt with problems of areal size and regional variation as a part of their discipline, but they have been overlooked, ignored, or dismissed by researchers from other disciplines. This, then, suggested an important contribution which geographers could

make to social reporting--the uncovering of regional patterns in social conditions. The locating of problem areas and extreme cases would be a necessary prerequisite to any planning effort.

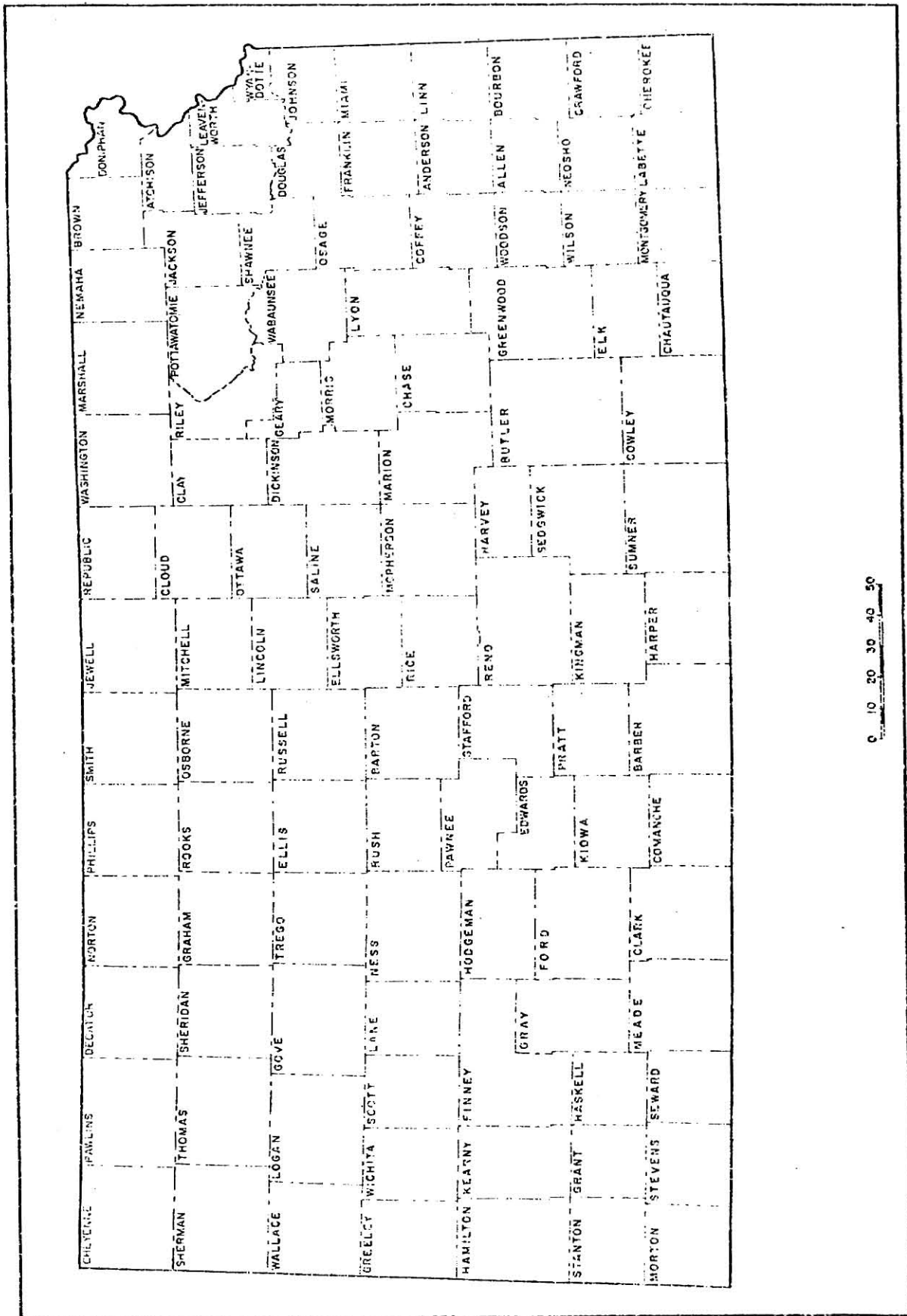
The second step in the research was to compare the social well-being components with parallel primary data on perceived life quality. This primary information was obtained from a survey whose elements were based upon the well-being dimensions. Surveys were sent to a representative sample of the populations in the selected rural counties. It was hypothesized that these two factors, social well-being and perceived quality of life, were not congruent at any scale and setting, that they were distinct elements. This was a crucial issue because if they did reveal different information about social conditions, then all of the time and funding which have gone into the study of these more objective indicators have not provided a comprehensive portrait of social conditions in the units studied.

No significant association was found to exist between the two sets of data; there were, then, two geographies of social conditions in rural Kansas. This was not merely a more complete description of life in less-urbanized areas, it was an indication of the importance of having and understanding two complementary data sources. Social planning efforts based on only one of these sources would not be adequate.

The value of such a study lies not only in its more complete description of variations in social conditions, although that is itself a useful destiny. Its value also lies in its potential for social planning. By more accurately characterizing local variation, changes in conditions can be monitored and assessed with more refinement, and planning policy can be formulated with confidence created from a more comprehensive data source. Specifically, the present research supported an argument that less-urbanized areas should have an appropriate set of social accounts. More generally, it indicated a need for different social accounts for specific units, based on their particular scales and settings. The research has attempted to contribute a new perspective to the study of social conditions, to suggest another approach to the problems of social indicators research.

APPENDICES

APPENDIX I



APPENDIX II

LIST OF THE SELECTED VARIABLES

1. Median school years completed for persons 25 years of age and over
2. The number of students per teacher in grade and high school
3. The percent of high school graduates
4. The percent of high school drop-outs
5. County school expenditures per student
6. Density of occupance in year-round housing
7. Percent of year-round housing occupied by owner
8. Percent of year-round housing with all plumbing facilities
9. Percent of year-round housing with heating
10. Median value of year-round housing
11. The number of doctors per 1000 population
12. The number of dentists per 1000 population
13. The number of hospital beds per 1000 population
14. Per capita county expenditures on health
15. The number of county health workers per 1000 population
16. Infant mortality
17. The percent of deaths due to infection and paracites
18. The percent of deaths due to cancer
19. The percent of deaths due to suicide
20. The number of induced abortions per 1000 population
21. The percent of deaths due to violent death other than auto accident
22. The percent of deaths due automobile accidents
23. The number of violent crimes per 1000 population
24. The number of property crimes per 1000 population
25. The number of divorces per 1000 population
26. Per capita civil defense expenditures by county
27. Per capita prisoner and jail expenditures by county
28. Per capita income
29. Percent of families with incomes under \$3000.
30. Percent of civilian labor force unemployed
31. Percent of population who are Black
32. Percent of year-round housing owned by Blacks
33. Percent of year-round housing rented by Blacks
34. Percent of voters who voted in 1972 state amendments vote
35. Percent of voters who voted for 1972 Presidential and Vice-Presidential candidates
36. Local radio stations which can be received in the county per 1000 population
37. Local t.v. stations which can be received in the county per 1000 population
38. Local daily and weekly paper circulation per 1000 population
39. Telephones available per 1000 population
40. Auto registrations per 1000 population
41. Per capita county expenditures on recreation
42. Library patron circulation per county population
43. Per capita expenditure on county fairs
44. Library adult books and periodicals per county population
45. County public assistance to the ages per 1000 population
46. County public assistance to dependent children
47. Percent of Black families with both husband and wife present
48. Percent of white families with both husband and wife present
49. Percent of persons over 25 with four years of high school
50. Percent of persons over 25 with four or more years of college

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MEANS AND STANDARD DEVIATIONS

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STANDARD DEVIATIONS	0.76695	2.78301	0.10581	0.03502	95.09227	0.26086	0.07931	0.04727
	0.01763	2572.20679	0.25228	0.16080	4.82805	1.06201	0.21413	0.01715
	0.29944	0.74006	0.10079	0.05761	0.02217	0.04273	0.78793	5.32951
	0.96763	0.21820	0.32268	285.78540	0.02241	0.01606	0.00752	0.00665
	0.00949	0.04066	0.04819	392.71191	4458.95703	0.20193	0.04634	75.79599
	1.16816	3.27123	1.47826	0.89772	6517.45313	4830.48828	0.43035	0.01753
	0.00575	0.01913						

APPENDIX IV CORRELATION COEFFICIENTS

ROW 1	0.0000	0.05950	-0.09506	-0.00761	0.29032	0.16347	-0.13441	0.44918	0.14512	0.39526
0.21670	-0.00646	-0.01774	0.04957	-0.04957	0.05232	0.05391	0.07145	-0.17479	0.03747	0.03125
0.21253	0.15032	0.12277	0.17827	0.06057	0.06057	-0.02220	0.11679	0.53981	-0.37677	0.09786
0.09646	0.03024	0.17180	0.27567	0.04588	0.04588	-0.01913	-0.10997	-0.07541	0.24413	-0.00704
0.02857	0.23339	0.20352	0.30401	-0.21935	-0.21935	-0.15002	0.12584	0.21923	0.80482	0.51934
ROW 2	0.05950	1.00000	0.04321	0.16545	-0.44931	0.14924	0.17999	-0.10381	-0.02876	0.03111
0.24734	0.12694	-0.10950	0.00582	-0.25851	-0.25851	-0.12425	0.17100	0.05177	-0.04904	-0.03533
0.12491	0.06130	0.08883	0.11237	0.07446	0.07446	0.12658	-0.03390	-0.02991	0.02291	0.10024
0.05427	0.07252	0.13741	-0.05510	-0.24224	-0.24224	0.18212	0.02305	-0.13373	0.17039	0.05439
-0.04958	0.31455	-0.24059	0.14826	0.31437	0.31437	0.19356	0.24299	-0.14932	-0.00863	-0.09372
ROW 3	-0.09506	0.04321	1.00000	0.61562	-0.09136	-0.07420	0.06562	-0.17186	-0.03825	-0.20825
-0.03532	-0.12597	0.00213	0.15785	0.09576	0.09576	-0.10556	-0.01635	-0.00724	-0.02831	-0.03275
-0.17203	0.04436	0.05255	-0.12121	0.09942	0.09942	0.29422	0.06482	-0.20495	0.16115	0.25769
-0.21628	-0.00674	-0.00249	-0.02002	0.08873	0.08873	0.13165	0.25809	-0.12696	-0.16151	0.07777
-0.01571	-0.09810	-0.15406	0.05747	0.25624	0.25624	0.27797	-0.10367	-0.27861	-0.19563	-0.05014
ROW 4	-0.09761	0.16545	0.61562	1.00000	-0.09268	0.09677	-0.00026	-0.10474	-0.03259	0.05554
-0.12158	-0.02270	-0.00248	0.25850	0.05747	0.05747	-0.04247	0.05910	-0.03990	-0.02649	-0.03143
0.12491	0.13747	0.20235	0.11590	0.25459	0.25459	0.56922	0.02062	-0.11358	0.00140	0.25877
0.11460	0.12646	0.13356	-0.17115	-0.27650	-0.27650	0.25722	0.46303	-0.23678	-0.10260	-0.04649
0.11687	0.04210	0.00625	-0.04075	0.15401	0.15401	0.51615	0.16523	-0.22420	-0.12251	-0.03513
ROW 5	0.20032	-0.44931	-0.08136	-0.09268	1.00000	0.10353	-0.41754	0.51961	0.26934	0.36964
-0.09194	-0.12046	0.18223	-0.01441	0.05222	0.05222	0.07517	-0.18901	-0.10379	-0.03515	-0.05595
-0.02269	0.05296	0.08055	-0.09953	-0.07952	-0.07952	-0.18509	0.21170	0.45286	-0.43273	-0.03344
-0.05932	0.00542	0.00835	0.25730	0.22124	0.22124	-0.32277	-0.32201	-0.09126	-0.12343	-0.03977
0.16307	0.05304	0.47299	0.11574	-0.45343	-0.45343	-0.31098	-0.09971	0.47953	0.52282	0.57256

ROW 6	0.16347	0.14924	-0.07480	0.09677	0.10353	1.00000	-0.00445	0.50630	0.49503	0.63633
	-0.18674	-0.26332	0.08139	-0.05214	-0.11886	-0.28626	0.19510	-0.42473	-0.05802	-0.20592
	0.08425	0.34755	0.15148	0.21722	-0.07637	0.29933	-0.00461	0.04391	-0.05867	-0.18315
	0.15412	0.07163	0.30585	0.27585	-0.07468	-0.20602	-0.00321	-0.26843	0.50637	-0.19709
	0.31261	0.19133	0.36579	-0.04321	-0.032637	-0.13995	0.12731	0.30523	0.30157	0.30255
ROW 7										
	-0.13441	0.17999	0.06662	-0.00026	-0.41754	-0.00445	1.00000	-0.18674	-0.17238	-0.19049
	-0.01880	0.23436	-0.03712	0.05076	-0.19399	0.04515	0.14312	0.10602	0.02182	0.00026
	-0.15522	0.03082	-0.19762	-0.11241	-0.03657	-0.02064	0.06475	-0.30657	0.05295	0.01113
	0.03324	0.01429	-0.15159	-0.21468	-0.08616	0.16590	0.07910	-0.07031	0.02653	-0.30774
	-0.21669	-0.11205	-0.09779	-0.13168	0.17150	0.17105	-0.03145	-0.13521	-0.21369	-0.24886
ROW 8										
	0.44918	-0.10381	-0.17186	-0.10474	0.51961	0.50630	-0.18674	1.00000	0.52629	0.65310
	0.12133	0.07002	0.23717	-0.14936	-0.18072	-0.07064	-0.04728	-0.30733	-0.12015	-0.13335
	0.18017	0.21481	0.14272	0.09590	-0.12277	-0.04268	0.15783	0.49118	-0.58323	0.03223
	0.04989	0.02215	0.12962	0.24793	0.10892	-0.08558	-0.14324	-0.14334	0.41386	-0.15741
	0.17465	0.15463	0.41801	0.13459	-0.59368	-0.34326	0.00779	0.43784	0.62561	0.64634
ROW 9										
	0.14512	-0.02876	-0.06825	-0.03259	0.28884	0.49503	-0.17238	0.52629	1.00000	0.45749
	-0.06605	-0.19485	0.02532	0.01645	-0.28128	-0.00732	0.06742	-0.32196	-0.13735	-0.19463
	0.16939	0.30007	0.08858	0.09919	-0.06158	0.05044	0.09549	0.23530	-0.25565	-0.05815
	0.08734	0.06510	0.23163	0.17817	0.00393	-0.23169	-0.12829	-0.08577	0.16720	-0.04743
	0.29546	0.21232	0.34734	0.03671	-0.51459	-0.25944	0.03652	0.28621	0.31108	0.35237
ROW 10										
	0.39526	0.08111	-0.20925	0.06964	0.36964	0.63633	-0.19049	0.65310	0.45749	1.00000
	-0.01180	-0.07795	0.12814	-0.14455	-0.12482	-0.03778	0.14110	-0.46279	-0.07552	-0.10061
	0.28536	0.39590	0.23263	0.16711	-0.10260	0.11762	0.00478	0.31517	-0.59892	-0.03608
	0.08290	0.07424	0.19350	0.29165	-0.08275	-0.12655	-0.13728	-0.20720	0.33093	-0.17768
	0.47416	0.21549	0.49483	-0.00027	-0.56849	-0.16893	0.01453	0.42021	0.51807	0.57035
ROW 11										
	0.21670	0.24734	-0.03582	-0.12158	-0.09194	-0.18674	-0.01880	0.12133	-0.05605	-0.01180
	1.00000	0.07593	0.04961	0.00546	-0.23115	0.20682	-0.06350	-0.10744	0.15554	0.18698
	-0.11943	-0.07940	0.26304	0.03879	-0.03425	-0.09423	-0.01545	0.15756	0.03332	-0.05693
	0.12542	0.17652	0.10432	-0.23581	0.01548	0.16864	0.05462	0.03631	0.10390	-0.04241
	-0.05292	0.06790	-0.08123	0.08644	-0.08719	-0.05977	0.07302	-0.09451	0.14430	0.03879
ROW 12										
	-0.00646	0.18684	-0.12597	-0.02270	-0.12046	-0.26332	0.23436	0.07002	-0.19485	-0.07795
	0.07593	1.00000	0.14345	0.23282	-0.10864	0.28456	-0.04700	0.24298	0.05573	0.15991
	0.18933	-0.17888	0.01489	-0.04854	0.06551	-0.00472	0.07013	0.11009	-0.01656	0.42393
	0.07337	0.09980	-0.09136	-0.10478	-0.16301	0.35529	0.09012	-0.02425	0.12985	0.10725
	-0.31267	-0.14498	-0.13509	-0.01696	-0.07286	0.08687	-0.16011	-0.10700	-0.07526	-0.02144

ROW 13

0.01774	-0.10950	0.00213	-0.00848	0.18223	0.08189	-0.03712	0.23717	0.02532	0.12814
0.14345	0.00900	1.00900	-0.01355	-0.30333	0.02500	-0.09403	0.07181	0.05008	0.05906
-0.03664	0.22040	0.02040	-0.05476	0.01593	0.10450	0.07851	0.04859	-0.22364	0.19590
0.09103	0.33949	0.33949	-0.01156	-0.04410	0.10354	-0.05590	-0.06626	0.06980	-0.07468
-0.07833	0.13754	0.13754	-0.04909	-0.28487	-0.07172	-0.13164	-0.09752	0.04723	0.07354

ROW 14

0.04957	0.00582	0.15785	0.25850	-0.01441	-0.05214	0.05076	-0.14936	0.01645	-0.14455
0.00546	0.23282	-0.01355	1.00000	0.11850	0.11242	0.11105	0.10962	0.13611	0.10029
-0.03879	0.07037	0.00960	0.00982	0.07451	0.13741	0.20324	-0.07121	0.04226	0.12794
-0.06558	-0.03176	0.09141	-0.06009	-0.26029	0.02280	0.07084	-0.24510	-0.01768	-0.12455
-0.02980	-0.13167	-0.14587	-0.11490	0.14879	0.14366	0.13736	-0.13499	-0.11581	-0.11298

ROW 15

0.05282	-0.25851	0.09576	0.05747	0.08522	-0.11888	-0.19399	-0.18072	-0.28128	-0.12482
-0.23115	-0.10864	-0.30333	0.11850	1.00000	-0.06520	0.05925	-0.06969	0.10886	0.03698
-0.09716	0.27657	-0.14097	0.15705	-0.05432	-0.10496	0.13811	-0.15047	0.04463	-0.14596
-0.12394	-0.13042	0.06384	0.15368	0.19246	-0.33128	-0.17992	0.03516	-0.17725	0.19539
0.21769	-0.14648	0.02131	0.20115	0.38807	0.08171	-0.10934	-0.05278	0.01440	0.03843

ROW 16

0.05391	-0.12425	-0.10566	-0.04247	0.07517	-0.28626	0.04515	0.07064	-0.00732	-0.03778
0.20682	0.28456	0.02500	0.11242	-0.06520	1.00000	0.09663	-0.00064	-0.08477	0.06886
-0.10843	-0.20493	-0.14846	-0.20238	0.09511	-0.13748	0.10030	0.26634	0.17018	0.11658
0.08218	0.08856	-0.14022	-0.02320	0.07801	0.02681	0.00802	-0.02145	-0.06810	-0.00319
-0.10867	-0.06704	0.19950	0.01576	-0.02912	0.13319	0.00200	-0.07078	0.16189	0.22868

ROW 17

0.07145	0.17100	-0.01635	0.05910	-0.18901	0.19510	0.14312	-0.04728	0.06742	0.14110
-0.06350	-0.04700	-0.08403	0.11105	0.05925	0.09663	1.00000	-0.08533	-0.01110	-0.03642
-0.11326	0.10993	0.03274	0.10651	-0.24709	-0.06398	0.07464	0.00397	0.01008	-0.08742
0.10990	0.13594	-0.06039	0.04334	-0.04868	-0.08061	-0.05042	-0.24127	0.06839	-0.03430
-0.04062	-0.12364	-0.07506	-0.18627	0.01881	-0.04896	0.06351	0.00751	0.05727	-0.07502

ROW 18

0.17479	0.08177	-0.00784	-0.08990	-0.10379	-0.42473	0.10602	-0.30733	-0.32196	-0.46279
-0.10744	0.24298	0.07181	0.10962	-0.06969	-0.00064	-0.08533	1.00000	0.13867	0.16944
-0.17567	-0.34856	-0.15241	0.03373	0.17170	-0.05677	0.20712	-0.03934	0.18835	0.24391
0.07274	0.05000	-0.14279	-0.11874	-0.13723	0.38921	0.01319	0.06624	-0.14462	0.25739
-0.32540	-0.09468	-0.26878	-0.11388	0.35877	0.16314	0.08252	-0.14361	-0.27403	-0.32463

ROW 19

0.05747	-0.04904	-0.02881	-0.02649	-0.08515	-0.05802	0.02182	-0.12015	-0.13735	-0.07552
0.15554	0.05573	0.05008	0.13611	0.10886	-0.08477	-0.01110	0.13867	1.00000	0.86044
-0.05508	0.13294	0.00360	0.24865	-0.05586	-0.02597	-0.10414	-0.04724	-0.01527	-0.04121
-0.05200	-0.06874	-0.00327	-0.03520	0.06143	0.27623	0.09009	-0.25859	0.01691	-0.01959
0.00009	0.00435	0.10537	0.15603	0.18782	-0.03277	-0.14120	0.01572	0.02084	0.00100

ROW 20	0.08186	-0.03533	-0.04275	-0.01418	-0.05896	-0.20592	0.00026	-0.13335	-0.19463	-0.10061
	0.18698	0.15991	0.05506	0.10029	0.03698	0.06886	-0.03642	0.16944	0.86044	1.00000
	-0.06540	-0.01509	0.05580	0.18549	0.11007	-0.02425	-0.07287	0.14384	0.04931	0.11885
	-0.05963	-0.03967	0.02853	-0.08765	-0.02693	0.31374	0.08722	-0.02160	-0.00824	0.00320
	-0.13106	-0.06651	0.06952	0.07718	0.21132	-0.00274	-0.05826	-0.02714	-0.00479	-0.02476
ROW 21	0.21353	0.12481	-0.17203	0.12491	-0.02269	0.08425	-0.15522	0.18017	0.16939	0.28536
	-0.11943	0.18933	-0.09511	-0.08079	-0.09716	-0.10843	-0.11326	-0.17567	-0.05508	-0.06540
	1.00000	0.10834	0.10933	0.29936	0.11222	0.06807	-0.00594	0.19681	0.02032	0.22003
	-0.00577	0.03896	0.00000	0.10373	-0.09438	-0.08183	0.03076	0.02040	0.05897	0.01236
	0.06088	0.14307	-0.09554	0.08847	-0.16316	0.04071	-0.03098	0.09403	0.17249	0.20856
ROW 22	0.15082	0.06130	0.04436	0.13747	0.05296	0.34755	0.03082	0.21481	0.30007	0.39590
	-0.07940	-0.17088	-0.03664	0.07037	0.27657	-0.20493	0.10993	-0.34856	0.13294	-0.01509
	0.10834	1.00000	-0.01067	0.04539	-0.19562	0.07434	0.08753	-0.13043	-0.22423	-0.05299
	0.00052	-0.09441	0.38053	0.29821	0.12093	-0.11521	-0.01532	-0.15396	-0.02145	-0.19588
	0.57675	0.17408	0.29053	0.29985	-0.12852	0.00505	0.02849	0.23430	0.28987	0.27046
ROW 23	0.12277	0.08883	0.05255	0.20235	0.09055	0.15148	-0.19762	0.14272	0.08858	0.23263
	0.26304	0.01489	0.22040	0.00960	-0.14097	-0.14846	0.03274	-0.15241	0.00360	0.05580
	0.10933	-0.01067	1.00000	0.25230	0.03816	0.28938	-0.09184	0.02986	-0.11208	-0.06123
	-0.04219	-0.06010	0.04690	-0.04793	-0.22699	0.05232	0.07101	-0.02303	0.15959	0.07396
	0.13924	0.04327	0.01148	-0.23682	-0.13600	-0.09164	0.02395	0.02823	0.00972	-0.01774
ROW 24	0.17827	0.11237	-0.12121	0.11590	-0.09953	0.21722	-0.11241	0.09590	0.09919	0.16711
	0.03879	-0.04854	-0.05476	0.00982	0.15705	-0.20238	0.10651	0.03373	0.24865	0.18548
	0.29936	0.04539	0.25230	1.00000	0.21535	0.24020	0.20104	-0.03458	-0.12051	-0.07471
	0.13770	0.15263	0.02598	-0.02679	-0.16277	-0.01139	0.12900	0.05789	0.12945	0.25410
	-0.01772	0.12974	-0.10034	-0.15622	0.03431	0.11188	0.19240	-0.15960	0.05217	0.10344
ROW 25	0.06057	0.07446	0.09942	0.25458	-0.07552	-0.07637	-0.03657	-0.12277	-0.06158	-0.10260
	-0.03425	0.06551	0.01593	0.07451	-0.05432	0.09511	-0.24709	0.17170	-0.05585	0.11007
	0.11222	-0.19562	0.03816	0.21535	1.00000	0.35929	-0.03847	0.07032	-0.01022	0.24782
	0.37328	0.38624	0.23945	-0.19393	-0.36146	0.23937	0.20140	-0.00044	-0.00162	0.13457
	-0.23518	0.06045	0.10087	-0.07705	0.28760	0.50819	0.37250	-0.26421	-0.03196	-0.01709
ROW 26	-0.02220	0.12658	0.29422	0.56922	-0.18509	0.29933	-0.02064	-0.04268	0.05044	0.11752
	-0.09423	-0.00472	0.10450	0.13741	-0.10496	-0.13748	-0.06398	-0.05677	-0.02597	-0.02425
	0.06807	0.07434	0.28938	0.24020	0.35929	1.00000	-0.05227	-0.06693	-0.05750	0.16258
	0.16491	0.01996	0.22796	-0.11144	-0.36971	0.29113	0.61584	-0.06624	0.09542	-0.05175
	0.06353	0.08688	0.03282	-0.21634	0.17777	0.42934	0.13254	-0.11227	-0.05895	-0.14271

ROW 27	0.11679	-0.03890	0.04482	0.02062	0.21170	-0.00461	0.06475	0.15703	0.00549	0.00478
	0.01545	0.07013	0.07851	0.20324	0.13811	0.10030	0.07464	0.20712	-0.10414	-0.07267
	-0.00494	0.08753	-0.09184	0.20104	-0.03847	-0.05227	1.00000	0.06611	-0.06052	0.19272
	0.06293	0.06025	-0.03522	0.17861	0.01818	-0.10397	-0.02378	-0.14628	-0.26727	-0.10992
	-0.02302	-0.05292	-0.07467	0.01830	-0.01535	0.07539	0.03908	-0.02631	0.12341	0.06612
ROW 28	0.53981	-0.02891	-0.20495	-0.11358	0.45286	0.04391	-0.30657	0.49118	0.23530	0.31517
	0.15756	0.11009	0.04859	-0.07121	-0.13047	0.26634	0.00397	-0.03934	-0.04724	0.14384
	0.19681	-0.13043	0.02586	-0.03458	0.07032	-0.06693	0.06611	1.00000	-0.28415	0.11243
	0.14884	0.11068	0.13842	0.12137	-0.02495	0.01553	-0.03559	0.06237	0.20481	-0.10760
	-0.02035	0.12115	0.21547	0.12482	-0.02554	-0.15919	0.12845	0.41545	0.62327	0.45546
ROW 29	0.37677	0.02291	0.16615	0.00140	-0.43278	-0.50867	0.05295	-0.58323	-0.25565	-0.59892
	0.02832	-0.01654	-0.22364	0.04226	0.04453	0.17018	0.01008	0.18835	-0.01527	0.04981
	0.02032	-0.22423	-0.11208	-0.12051	-0.01022	-0.05750	-0.06052	-0.28415	1.00000	-0.03379
	-0.24896	-0.26127	-0.17197	-0.26953	0.02900	0.01457	0.09606	0.15152	-0.32429	0.06927
	-0.25427	-0.12517	-0.45242	-0.03989	0.40698	0.21016	-0.09918	-0.43143	-0.47238	-0.56832
ROW 30	0.09746	0.10034	0.25769	0.25877	-0.02344	-0.18315	0.01113	0.03223	-0.06815	-0.03608
	-0.06493	0.42393	0.19590	0.12794	-0.14596	0.11658	-0.08742	0.24391	-0.04121	0.11885
	0.22003	-0.05299	-0.06123	-0.07471	0.24782	0.16258	0.19272	0.11243	-0.03379	1.00000
	-0.00716	0.04340	0.05843	0.00634	-0.15176	0.25637	0.17031	0.00415	-0.02710	0.02138
	-0.17935	-0.11693	-0.13986	0.14062	0.14244	0.26006	-0.04456	-0.17845	0.00351	0.05467
ROW 31	0.09646	0.08427	-0.01628	0.11460	-0.05932	0.15412	0.03324	0.04989	0.08734	0.08290
	0.12542	0.07337	0.18265	-0.06558	-0.12394	0.08218	0.10990	0.07274	-0.05200	-0.05963
	-0.00577	0.00052	-0.04219	0.13770	0.37328	0.16491	0.06293	0.14884	-0.24896	-0.00716
	1.00000	0.88651	0.40725	-0.16679	-0.20802	0.19024	0.08498	0.03039	0.09696	-0.05523
	-0.07302	0.02129	0.15290	-0.05098	-0.05763	0.16550	0.20299	-0.13492	0.14507	0.02154
ROW 32	0.08024	0.07252	-0.00674	0.12866	0.00542	0.07163	0.01429	0.02215	0.06510	0.07424
	0.17652	0.09980	0.09103	-0.03176	-0.13042	0.08856	0.13594	0.05000	-0.06874	-0.03967
	0.03896	-0.09441	-0.05010	0.15263	0.38624	0.01996	0.06625	0.11058	-0.26127	0.04548
	0.88651	1.00000	0.25151	-0.21589	-0.22248	0.09535	-0.04055	0.03217	0.01724	-0.00792
	-0.12851	-0.03558	0.14306	-0.09700	-0.13043	0.13210	0.21791	-0.11601	0.07371	0.09650
ROW 33	0.17180	0.13741	-0.00249	0.13356	0.00835	0.30585	-0.15159	0.12962	0.23163	0.19350
	0.10432	-0.09136	0.33949	0.09141	0.06384	-0.14022	-0.06039	-0.14279	-0.00327	0.02859
	0.00000	0.38853	0.04690	0.02098	0.23945	0.22796	-0.03522	0.13042	-0.17197	0.09843
	0.40725	0.25151	1.00000	0.01295	-0.12577	-0.07524	0.00784	0.04568	0.08673	-0.06326
	0.23185	0.19050	0.15037	0.29295	0.02456	0.20387	0.17055	-0.01200	0.15775	0.00516

ROW 34	0.27567	-0.05510	-0.02002	-0.17115	0.25738	0.27505	-0.21468	0.24793	0.17817	0.29165
	-0.23581	-0.10478	-0.01156	-0.06009	0.15368	-0.02320	0.04334	-0.11874	-0.03520	-0.03765
	0.10373	0.29831	-0.04793	-0.02675	-0.19393	-0.11144	0.17061	0.12137	-0.26993	0.00636
	-0.16679	-0.21509	0.01206	1.00000	0.55249	-0.28011	-0.23939	-0.05759	0.21076	0.02837
	0.25645	0.24399	0.12179	0.22629	-0.21735	-0.23552	0.05246	0.31927	0.37373	0.39364
ROW 35	0.04588	-0.24224	0.08873	-0.27950	0.22124	-0.07468	-0.08616	0.10892	0.00393	-0.08275
	0.01548	-0.16301	-0.04410	-0.26029	0.19246	0.07801	-0.04868	-0.13723	0.06143	-0.02693
	-0.09438	0.12093	-0.22699	-0.16277	-0.36146	-0.36971	0.01818	-0.02495	0.02900	-0.15176
	-0.20802	-0.22248	-0.12577	0.55249	1.00000	-0.27760	-0.26804	0.10755	0.01251	0.12837
	0.10606	0.20038	0.06961	0.39964	-0.15480	-0.40027	-0.19271	0.17304	0.13996	0.26383
ROW 36	-0.01918	0.10212	0.13165	0.25722	-0.32277	-0.20602	0.16590	-0.08558	-0.23169	-0.12655
	0.16864	0.35529	0.10054	0.02280	-0.33128	0.02681	-0.08061	0.38921	0.27623	0.31374
	-0.08183	-0.11521	0.05232	-0.01139	0.23937	0.29113	-0.10397	0.01553	0.01457	0.25637
	0.19024	0.09535	-0.07524	-0.28011	-0.27760	1.00000	0.42235	-0.09751	0.11810	-0.05784
	-0.17153	-0.07315	-0.23911	-0.07883	0.16807	0.26642	0.02182	-0.18010	-0.12292	-0.23170
ROW 37	-0.10997	0.08305	0.25809	0.46303	-0.32201	-0.00321	0.07910	-0.14324	-0.12829	-0.13728
	0.05462	0.09012	-0.05590	0.07084	-0.17992	0.00802	-0.05042	0.01319	0.09009	0.08722
	0.03076	-0.01532	0.07101	0.12900	0.20140	0.61584	-0.02378	-0.03559	0.09606	0.17031
	0.03498	-0.04055	0.07784	-0.28939	-0.26804	0.42235	1.00000	-0.03304	0.02187	-0.06194
	-0.10055	0.01275	-0.06126	-0.15708	0.21863	0.40876	0.21997	-0.12209	-0.15256	-0.18890
ROW 38	-0.07541	-0.13373	-0.12696	-0.23678	-0.08126	-0.26843	-0.07031	-0.14334	-0.08577	-0.20720
	0.03631	-0.02425	-0.06626	-0.24510	0.03516	-0.02145	-0.24127	0.06624	-0.25859	-0.21610
	0.02040	-0.15396	-0.02303	0.06789	-0.00044	-0.06624	-0.14628	0.06337	0.15152	0.00415
	0.03038	0.03217	0.04568	-0.05759	0.10755	-0.09751	-0.03304	1.00000	-0.02904	0.31428
	-0.09384	0.35442	-0.12581	0.25426	0.00066	-0.15685	-0.15084	0.02137	-0.15518	-0.12925
ROW 39	0.24413	0.17039	-0.16151	-0.10260	-0.13343	0.50687	0.02653	0.41386	0.16720	0.33008
	0.10390	0.12985	0.06980	-0.01768	-0.17725	-0.06810	0.06839	-0.14462	0.01691	-0.00824
	0.05897	-0.02145	0.15999	0.12946	-0.00162	0.09542	-0.26727	0.20481	-0.32429	-0.02710
	0.04656	0.01724	0.08673	0.21076	0.01251	0.11810	0.02187	-0.02904	1.00000	-0.02288
	0.00836	0.10942	0.06926	-0.02173	-0.20788	-0.19706	0.15765	0.13127	0.25262	0.20302
ROW 40	-0.00704	0.00489	0.07777	-0.04649	-0.00877	-0.19709	-0.30774	-0.15741	-0.04743	-0.17768
	-0.04241	0.10725	-0.07468	-0.12455	0.19539	-0.00319	-0.03430	0.25739	-0.01959	0.00320
	0.01236	-0.19588	0.07996	0.25410	0.13457	-0.05175	-0.10992	-0.10760	0.06927	0.02138
	-0.05523	-0.00792	-0.06336	0.02837	0.12887	-0.05784	-0.06194	0.31428	-0.02288	1.00000
	-0.14843	0.14235	-0.01013	0.20286	0.17934	-0.11605	-0.14169	-0.12455	-0.14663	-0.00794

ROW 41	0.02357	-0.04958	-0.01571	0.11687	0.16307	0.31261	-0.21669	0.17466	0.29546	0.47416
	-0.05292	-0.31267	-0.09347	-0.02980	0.21769	-0.10867	-0.04062	-0.32540	0.00009	-0.13106
	0.06088	0.57675	0.13524	-0.01772	-0.23518	0.06353	-0.02302	-0.02035	-0.25427	-0.17935
	-0.07302	-0.12851	0.23185	0.25645	0.10606	-0.17153	-0.10055	-0.09384	0.00836	-0.14843
	1.00000	0.05222	0.26261	0.05010	-0.15121	-0.05618	0.08457	0.31761	0.11367	0.16889
ROW 42	0.23339	0.31455	-0.09810	0.04210	0.05304	0.19133	-0.11205	0.15463	0.21232	0.21549
	0.06790	-0.14498	-0.07833	-0.13167	-0.14648	-0.06704	-0.12364	-0.09468	0.00435	-0.06651
	0.14307	0.17408	0.04327	0.12974	0.06045	0.08688	-0.05292	0.12115	-0.12517	-0.11653
	0.02129	-0.03558	0.19058	0.24399	0.20038	-0.07315	0.01275	0.35442	0.10942	0.14235
	0.05222	1.00000	0.22224	0.61305	-0.20890	-0.12103	0.00089	0.13483	0.24773	0.25911
ROW 43	0.20352	-0.24059	-0.15406	0.00625	0.47299	0.38579	-0.09779	0.41801	0.34784	0.49483
	-0.04123	-0.13509	0.13754	-0.14587	0.02131	0.19950	-0.07506	-0.26878	0.10537	0.06952
	-0.09554	0.29053	0.01148	-0.10034	0.10087	0.03282	-0.07467	0.21547	-0.45242	-0.13986
	0.15290	0.14306	0.18807	0.12179	0.06961	-0.23911	-0.06126	-0.12581	0.06926	-0.01013
	0.26251	0.22224	1.00000	0.19738	-0.28445	-0.15840	-0.02983	0.38620	0.40880	0.53113
ROW 44	0.30401	0.14826	0.05747	-0.04075	0.11974	-0.04321	-0.13168	0.13459	0.03671	-0.00027
	0.08644	-0.01696	-0.04909	-0.11490	0.20115	0.01576	-0.10627	-0.11388	0.15603	0.07718
	0.08647	0.29985	-0.23682	-0.15622	-0.07705	-0.21634	0.01830	0.12482	-0.03989	0.14062
	-0.05098	-0.09700	0.28265	0.22629	0.39964	-0.07883	-0.15708	0.25426	-0.02173	0.20286
	0.05010	0.61305	0.19738	1.00000	0.00557	-0.14612	-0.20897	0.08551	0.32870	0.29948
ROW 45	-0.21935	0.01437	0.25624	0.15401	-0.45343	-0.32637	0.17150	-0.59368	-0.51459	-0.56849
	-0.08719	-0.07286	-0.20487	0.14879	0.38807	-0.02912	0.01881	0.35877	0.18782	0.21132
	-0.15316	-0.12852	-0.13600	0.03431	0.28760	0.17777	-0.01535	-0.29544	0.40598	0.14244
	-0.05763	-0.13043	0.03456	-0.21735	-0.15480	0.16807	0.21863	0.00066	-0.20788	0.17934
	-0.15121	-0.20890	-0.28445	0.00557	1.00000	0.49911	0.07240	-0.40695	-0.43506	-0.45986
ROW 46	-0.15802	0.19356	0.27797	0.51615	-0.31098	-0.13996	0.17105	-0.34826	-0.25944	-0.16893
	-0.05877	0.08687	-0.07172	0.14366	0.08171	0.13319	-0.04896	0.16314	-0.03277	-0.00274
	0.04071	0.00505	-0.09166	0.11188	0.50819	0.42934	0.07339	-0.15919	0.21016	0.26006
	0.16550	0.13210	0.20387	-0.23552	-0.40027	0.26642	0.40876	-0.15685	-0.19706	-0.11605
	-0.05618	-0.12103	-0.15840	-0.14612	0.49911	1.00000	0.26378	-0.37011	-0.23650	-0.19196
ROW 47	0.12584	0.24299	-0.10367	0.16523	-0.09971	0.12731	-0.03145	0.00779	0.03652	0.01453
	0.07302	-0.16011	-0.13164	0.13736	-0.10934	0.00200	0.06351	0.08252	-0.14120	-0.05826
	-0.03098	0.02849	0.02395	0.19240	0.37250	0.13254	0.03808	0.12845	-0.09918	-0.04456
	0.20299	0.21791	0.17085	0.06246	-0.19271	0.02162	0.21997	-0.15084	0.15765	-0.14169
	0.08457	0.00089	-0.02988	-0.20897	0.07240	0.26378	1.00000	-0.04036	0.10602	-0.05859

ROW 48	0.21923	-0.14932	-0.27861	-0.22420	0.47953	0.30523	-0.13521	0.43784	0.28621	0.42021
	-0.09451	-0.10700	-0.09752	-0.13499	-0.05278	-0.07078	0.00751	-0.14361	0.01572	-0.02714
	0.09403	0.23430	0.02823	-0.15960	-0.26421	-0.11227	-0.02631	0.41545	-0.43143	-0.17845
	-0.13492	-0.11601	-0.01880	0.31827	0.17304	-0.12010	-0.12209	0.02187	0.13127	-0.12455
	0.31761	0.13483	0.30620	0.08551	-0.40695	-0.37011	-0.04036	1.00000	0.40858	0.40721
ROW 49	0.80482	-0.00863	-0.19563	-0.12251	0.52282	0.30157	-0.21369	0.62561	0.31108	0.51807
	0.14430	-0.07526	0.04723	-0.11501	0.01440	0.16189	0.05727	-0.27403	0.02084	-0.00479
	0.17249	0.28987	0.00972	0.05217	-0.03196	-0.05895	0.12341	0.62327	-0.47238	0.00351
	0.14507	0.07371	0.15775	0.37373	0.18996	-0.12292	-0.15256	-0.15518	0.25262	-0.14663
	0.11367	0.24773	0.40880	0.32870	-0.43506	-0.23650	0.10602	0.40858	1.00000	0.68833
ROW 50	0.51904	-0.09372	-0.06014	-0.08518	0.57256	0.30255	-0.24888	0.64634	0.35287	0.57085
	0.08879	-0.02144	0.07354	-0.11298	0.03843	0.22868	-0.07502	-0.32463	0.00100	-0.02476
	0.20856	0.27046	-0.01774	0.10044	-0.01709	-0.14271	0.06612	0.45546	-0.56832	0.05467
	0.02154	0.09650	0.00516	0.39384	0.26383	-0.23170	-0.18890	-0.12925	0.20302	-0.00794
	0.16889	0.25911	0.53113	0.29948	-0.45986	-0.19196	-0.05859	0.40721	0.68833	1.00000

APPENDIX V

EIGENVALUES

7.89021	4.55269	3.29266	2.75607	2.45848	2.39016	2.10769	2.00401	1.90893	1.64915
1.52311	1.29650	1.33693	1.19750	1.13065	1.05826	1.01961	0.97479	0.96410	0.83345
0.75456	0.64272	0.59062	0.57467	0.54616	0.46280	0.44559	0.39799	0.37381	0.31517
0.27930	0.27065	0.25182	0.22546	0.19378	0.16993	0.15356	0.14899	0.12417	0.11050
0.03839	0.07880	0.07319	0.05500	0.05112	0.04265	0.03142	0.02329	0.01515	0.00673

CUMULATIVE PROPORTION OF TOTAL VARIANCE

0.15720	0.24326	0.31471	0.36983	0.41900	0.46681	0.50896	0.54904	0.58722	0.62020
0.65060	0.67853	0.70527	0.72922	0.75183	0.77300	0.79339	0.81239	0.83217	0.84994
0.86503	0.87786	0.88959	0.90119	0.91211	0.92137	0.93028	0.93824	0.94571	0.95202
0.95761	0.96303	0.96806	0.97257	0.97645	0.97934	0.98292	0.98590	0.98838	0.99059
0.99237	0.99394	0.99541	0.99651	0.99753	0.99838	0.99901	0.99947	0.99978	0.99995

APPENDIX VII

FACTOR MATRIX

[illegible]

VARIABLE 7

0.06585	0.01484	-0.27517	0.19436	0.11429	-0.12019	0.47395	-0.21030	0.08708
-0.31156	0.18959	0.14525	-0.02475	-0.04704	0.31837	0.01151	-0.23244	0.00475
-0.22392	-0.02673	-0.04756	0.07235	0.17338	-0.07633	0.01832	0.09576	0.07694
-0.04884	0.01636	0.02886	0.01764	0.05920	-0.00665	-0.03068	-0.02739	0.00046
0.03658	-0.01220	-0.00598	-0.03657	0.01884	0.02523	0.01248	0.00393	0.01733
0.02168								

VARIABLE 8

0.16579	-0.17804	-0.12224	0.10331	-0.00706	0.18171	0.00684	0.00405	0.05835
0.05159	-0.00432	0.00310	-0.01713	-0.05853	0.15381	-0.00498	-0.00331	0.07977
-0.07419	-0.00528	0.01670	0.01499	0.17573	0.07332	-0.03922	-0.15078	0.03403
0.00597	0.06213	0.02957	-0.15690	-0.07679	0.04056	0.07439	-0.09382	-0.06025
-0.05289	0.01175	0.03665	0.00556	0.04356	0.04726	0.00106	0.00964	0.01733

VARIABLE 9

0.15150	0.16991	-0.18086	-0.08471	-0.08055	0.08647	0.00194	-0.03024	0.05848
-0.12095	0.00602	0.22650	0.35918	-0.09108	-0.17305	0.13992	0.18113	0.14343
0.16948	-0.12704	-0.03135	0.08120	-0.00989	-0.05761	-0.09896	0.03289	0.01591
0.14008	-0.07594	-0.07232	0.03577	-0.10765	0.01316	-0.05826	0.01018	-0.01554
0.02032	-0.02939	-0.03261	0.02186	0.00677	0.00768	0.00552	0.00701	-0.01490

VARIABLE 10

0.30856	0.15843	-0.12926	0.08125	0.07735	0.06798	-0.01919	0.04993	0.02941
-0.11500	0.16336	-0.04918	-0.03321	0.05591	-0.04362	-0.12124	-0.04894	-0.16594
-0.02491	-0.04268	0.06450	-0.17899	-0.04714	0.01257	-0.01973	0.03354	0.04464
-0.15663	-0.02295	0.18158	0.00063	0.04792	-0.02030	0.03839	-0.03500	-0.06304
-0.01954	0.02034	-0.02851	-0.01324	0.02836	-0.00061	0.01764	-0.01853	-0.01314

VARIABLE 11

0.12987	-0.36402	-0.03667	-0.04768	0.30931	-0.17118	0.04770	-0.16442	-0.30321
-0.00367	-0.13009	0.01646	-0.07356	0.01168	0.16255	-0.23393	-0.04352	0.12158
0.14685	0.14565	0.07602	0.05208	-0.12092	-0.08259	0.09886	-0.07736	0.03153
0.09279	-0.01023	0.07097	-0.02676	-0.06111	0.03718	-0.08264	0.01220	-0.02278
-0.02461	-0.01421	-0.03424	-0.02002	-0.00427	-0.00713	-0.01247	0.00784	-0.01177

VARIABLE 12

0.16672	-0.53516	-0.04268	0.19303	0.09816	0.25120	0.21431	0.04667	0.28896
-0.20076	0.24171	-0.24606	0.12314	0.19588	0.11166	-0.17630	0.04094	0.10832
-0.07583	0.05620	-0.00401	0.20211	0.07337	0.02524	-0.17922	0.05419	0.00531
0.04752	-0.04981	0.05544	0.00464	-0.03896	0.08603	0.09867	0.00840	0.04512
-0.01178	-0.01640	-0.01877	0.01468	-0.03718	-0.00941	-0.01017	-0.01870	-0.02712

VARIABLE 13

0.19856	-0.24120	-0.14705	0.13785	-0.09351	0.10959	-0.22284	-0.39045	0.47216
0.02636	-0.21111	-0.11918	-0.00432	-0.22831	0.11233	0.03519	0.04476	-0.30593
-0.10130	0.01223	-0.13248	-0.05621	0.11639	-0.11376	0.11033	0.02339	0.00515
-0.02915	0.09379	-0.05492	0.02633	-0.04550	0.07505	-0.02353	-0.00212	0.00694
0.00280	-0.03074	-0.05230	0.00865	0.00322	0.01602	0.01437	0.01584	-0.01115

VARIABLE 21

0.20005	0.19106	-0.02929	0.09268	-0.20180	0.14033	0.33398	0.05870	0.37669	0.05831
-0.05432	-0.48371	0.28314	0.02615	-0.19014	-0.22482	-0.18017	0.02984	0.12766	0.06894
-0.14156	0.02830	0.00507	0.00763	0.13848	0.08647	0.01124	0.24482	-0.03950	0.05251
-0.04404	-0.00004	0.04794	0.04722	-0.03090	-0.00006	0.00889	-0.05524	0.00025	-0.04155
0.01515	0.05169	0.01515	0.02293	0.04185	-0.02540	-0.01542	-0.01105	0.02190	0.00756

VARIABLE 22

0.40265	0.10167	0.51953	0.30518	0.14809	0.10698	-0.14594	0.23118	-0.18400	0.11903
0.02145	-0.27545	0.01132	0.02189	-0.05942	0.11007	0.08485	-0.10543	0.10632	-0.01272
0.05717	0.07417	-0.08381	-0.24105	0.10714	-0.01868	-0.06766	-0.07364	-0.14312	-0.17238
-0.06883	-0.03395	0.02629	0.05111	-0.04256	0.08430	-0.01949	-0.08573	-0.04224	0.03478
-0.06660	-0.04503	0.01574	-0.03312	0.02122	0.02727	-0.04380	0.01012	-0.00469	-0.00831

VARIABLE 23

0.11789	0.28559	0.08799	-0.15678	-0.00363	0.26413	0.21438	-0.43511	0.13788	0.02002
0.45687	0.04734	-0.09438	-0.10627	-0.00596	0.11560	0.05929	-0.13497	-0.11778	-0.15578
-0.19147	0.28398	-0.04670	0.06889	0.16394	0.03708	0.16117	-0.01854	-0.14159	-0.06283
-0.04116	0.14621	-0.06249	-0.05946	0.02502	0.03842	-0.04317	0.03255	0.02322	-0.03525
0.03122	-0.01341	0.04986	0.01106	-0.01298	0.01263	0.00453	0.00999	-0.00310	0.00595

VARIABLE 24

0.04551	0.33789	0.06926	0.14406	-0.16097	0.24405	-0.18950	-0.26370	0.57730	0.22497
0.10331	-0.00126	0.15683	0.26017	0.02865	-0.14552	0.24472	-0.05646	0.06654	0.00727
0.05765	-0.00724	0.02305	-0.03868	-0.14053	0.10405	-0.13200	-0.03931	0.00609	-0.01393
0.07403	0.01333	0.06151	-0.03509	-0.00307	0.02900	-0.02548	0.05300	0.07376	-0.00937
-0.02630	-0.03430	-0.07868	0.01916	-0.06780	-0.01646	-0.03577	0.02013	0.00422	-0.00916

VARIABLE 25

-0.21996	0.55898	-0.20158	0.24249	-0.25813	-0.26091	-0.08197	-0.18131	0.07539	-0.09961
-0.22601	0.00478	-0.01238	-0.07825	0.12091	-0.25687	-0.06802	-0.08979	-0.15436	0.03067
-0.00908	0.17722	-0.09299	0.01083	0.07403	-0.07373	0.02393	-0.15211	-0.11790	0.08229
-0.07661	-0.11238	0.17824	0.01332	0.13501	-0.03354	-0.00104	0.02405	-0.00897	-0.04188
-0.05404	0.03936	0.00709	-0.00158	0.00837	0.03472	0.00215	-0.00964	-0.02097	-0.01295

VARIABLE 26

-0.13819	0.67004	0.30890	0.09302	-0.02275	0.03353	0.28914	-0.21753	-0.04998	-0.05763
-0.09581	0.12996	-0.00562	0.01997	0.06242	0.04575	0.20029	0.11467	0.11396	-0.09017
-0.09877	-0.04015	-0.04978	0.11353	0.11780	-0.18217	-0.07616	-0.03334	0.11375	-0.04453
0.16986	0.00474	0.15322	-0.02607	-0.06983	-0.03437	0.09400	-0.07900	-0.06455	0.07185
0.04522	0.00351	0.02855	0.03942	-0.00450	0.00512	-0.02023	-0.00262	-0.00305	0.01231

VARIABLE 27

0.06141	0.03426	-0.06732	0.15241	0.22062	-0.36647	0.01576	0.27180	0.29048	0.30767
0.17802	-0.05118	-0.20567	0.45603	0.01887	0.00088	0.31741	-0.04598	0.04182	-0.06598
0.10569	-0.02828	0.05658	0.18599	0.05520	-0.03685	0.19877	-0.00421	0.03092	0.05259
-0.12549	-0.10457	-0.02622	-0.00625	0.06268	0.01455	0.01228	-0.05536	0.00844	0.03492
0.01540	-0.02226	0.02101	0.01531	0.03110	-0.02624	0.00227	-0.01330	-0.01840	0.00930

VARIABLE 28	0.15494	-0.51571	0.08669	0.02116	-0.07480	0.07716	-0.00736	0.15618	-0.31366
	-0.05675	-0.16743	-0.05668	-0.06089	0.14807	-0.08288	0.27845	0.13247	-0.04468
	0.02327	0.06313	0.16861	-0.04124	0.16812	-0.05054	-0.07972	0.10633	0.01000
	0.10725	0.05197	0.12934	0.01525	0.02917	0.03669	-0.07579	0.05364	0.02537
	-0.00535	0.04393	-0.04767	-0.05185	0.02537	-0.02287	0.02604	-0.00804	0.00792
VARIABLE 29	-0.29253	0.05542	0.05204	-0.11362	0.04495	0.10109	0.09302	0.03410	-0.23593
	-0.16909	0.01330	0.03445	0.12795	-0.19784	-0.08734	0.15793	0.20970	-0.10431
	0.00935	-0.13530	0.07315	0.14278	0.11862	0.02993	-0.00116	-0.03337	-0.19400
	-0.18990	-0.00547	0.03475	0.01782	0.03488	0.04598	0.09332	0.02456	0.07799
	0.00373	-0.03841	-0.02688	-0.02977	0.01931	0.04818	0.00547	-0.00339	0.01100
VARIABLE 30	0.29624	-0.30590	0.28623	0.13212	-0.14037	0.45684	0.20844	-0.01926	0.28682
	-0.10822	-0.01407	-0.14855	-0.06031	-0.03332	-0.11514	0.04248	0.07361	-0.04990
	0.21638	0.23156	-0.08992	-0.19936	-0.18748	0.13591	0.02638	-0.03305	-0.08504
	0.00952	0.01864	-0.05641	0.04236	0.00514	-0.03951	0.01233	0.00952	-0.00768
	-0.00998	-0.00281	-0.05169	-0.03490	-0.00535	0.00330	0.00198	0.01007	0.01828
VARIABLE 31	0.53540	-0.22966	-0.07981	-0.28431	-0.28923	-0.48806	0.03137	-0.18420	0.15916
	0.06325	0.12317	0.05905	-0.16114	0.09190	-0.04521	0.00756	0.21899	0.07501
	-0.03130	-0.07694	0.10012	0.10514	-0.02362	0.04447	0.05142	0.02639	-0.05378
	0.07602	-0.00278	-0.00274	-0.00363	0.06010	-0.01179	0.02487	-0.04097	-0.05140
	-0.04494	-0.03686	-0.04324	-0.05028	0.02093	0.00154	-0.07938	0.00974	0.00568
VARIABLE 32	0.46381	-0.28840	-0.11554	-0.26903	-0.34904	-0.48208	0.01858	-0.06396	0.14588
	0.03828	0.22649	0.10266	-0.15349	0.08643	-0.17306	-0.07298	0.08892	0.18271
	-0.11461	0.04854	0.04520	-0.01233	-0.05109	0.03934	0.03866	-0.01280	-0.03534
	0.02093	-0.03423	-0.03035	-0.01981	-0.02346	0.02693	0.00601	-0.01255	0.07529
	-0.00482	0.00367	0.02142	0.03076	0.01203	0.02221	0.09328	0.00454	-0.00011
VARIABLE 33	0.41391	0.13923	0.25176	-0.23390	-0.07310	-0.26488	0.00703	-0.34327	0.19611
	-0.25711	-0.31067	-0.28802	0.05531	-0.03680	0.03372	0.19875	0.09902	-0.07527
	-0.01286	0.09094	0.02666	0.10001	0.08253	-0.10013	-0.04929	0.00479	0.10728
	-0.01676	-0.05692	0.05103	-0.01889	0.00355	-0.14791	0.04625	0.02201	0.00405
	0.03265	-0.01099	0.06107	0.00894	-0.04263	-0.00263	0.00312	-0.02365	0.01801
VARIABLE 34	-0.24333	0.15123	0.24741	0.03064	0.02857	0.09779	0.23742	0.19114	0.19510
	0.25418	-0.20455	-0.09752	0.02860	-0.14363	-0.07354	-0.20322	0.26614	-0.09437
	0.10811	-0.04281	0.11176	0.04748	-0.17125	-0.03732	-0.06749	0.02680	0.00453
	-0.00994	-0.13077	0.04201	-0.11406	-0.03107	0.02423	-0.01735	0.01886	-0.04722
	-0.03844	-0.06880	0.01848	-0.03859	-0.02731	0.01792	0.01352	0.00104	0.00222

VARIABLE 42

0.32950	0.04573	0.00939	0.31004	-0.53066	0.32415	0.09636	0.14479	-0.16467	-0.03290
-0.04713	0.02636	-0.05310	0.30112	0.29079	0.04943	0.03490	0.01909	-0.011599	-0.05036
-0.24638	-0.04906	-0.09474	0.07587	-0.12912	0.00305	0.06300	0.01115	-0.07936	0.03041
0.02309	0.05219	-0.01346	0.08172	0.03456	-0.05699	-0.03807	0.03524	-0.10809	0.03367
-0.03836	-0.00820	-0.00767	-0.07224	0.00418	-0.06149	0.00161	0.01079	0.01396	0.00868

VARIABLE 43

0.58994	0.09696	0.01349	0.12694	0.09560	-0.18543	-0.17436	-0.22743	-0.32863	-0.12072
-0.20943	0.03096	0.24896	0.02874	0.29180	0.01837	0.03328	-0.06588	-0.16066	-0.15787
0.00582	0.06076	0.06510	-0.05531	0.09832	0.01592	0.15983	0.09060	0.05180	-0.12837
0.00664	-0.04860	-0.02420	0.11153	0.00010	-0.08679	0.04545	-0.03360	0.14993	-0.03507
-0.01763	-0.03705	-0.02283	0.03442	-0.03880	-0.02847	-0.01240	-0.00389	0.01837	0.01173

VARIABLE 44

0.27039	-0.20730	-0.11180	0.64450	-0.29144	0.19693	0.02883	0.29141	-0.32535	0.06875
0.02552	-0.05813	0.00890	0.01774	0.05393	0.04370	-0.02203	0.10809	-0.10746	0.03866
0.03506	-0.10071	0.00935	-0.01105	-0.00855	0.04824	0.16331	0.04695	-0.08331	0.06117
-0.03040	0.02313	0.00555	-0.11918	0.00409	0.04662	0.10458	0.01122	0.01118	0.01192
0.06466	0.03449	0.01060	0.06517	-0.07489	0.04650	-0.02844	0.00697	-0.00053	-0.01814

VARIABLE 45

-0.68696	0.01961	0.15065	0.40078	0.02945	-0.00807	-0.18883	-0.00360	0.11134	-0.08444
-0.15623	0.06869	-0.05217	-0.18708	-0.02207	0.01320	0.08387	0.09234	-0.07103	-0.11412
0.17814	0.12591	0.02929	0.14988	0.05492	-0.04366	0.05416	0.18678	-0.09169	0.07538
-0.02216	0.14251	0.05212	0.07046	-0.10097	0.03310	0.04061	0.00368	0.00421	0.01512
0.03585	-0.05959	-0.08650	-0.03804	0.04796	-0.01133	0.02084	0.01881	-0.01341	-0.02081

VARIABLE 46

-0.47402	0.52120	0.14749	0.26220	0.02527	-0.24753	0.02640	0.13565	0.02058	-0.17642
-0.12529	-0.11663	0.03357	-0.05273	-0.02638	-0.11758	0.06379	-0.14014	-0.05462	-0.18377
0.02036	-0.05647	0.00320	0.13257	-0.06417	0.07093	-0.23929	-0.03073	-0.12936	0.04262
0.03957	0.02084	-0.24156	-0.04594	0.07732	-0.00410	0.09466	-0.01327	0.00824	-0.01580
-0.00657	-0.05390	0.05757	0.00425	0.00146	0.00864	0.00423	-0.00570	0.02974	0.00291

VARIABLE 47

-0.00564	0.41873	0.07235	-0.05660	-0.11990	-0.10275	-0.26030	0.13490	0.29945	-0.31162
-0.13608	0.09176	-0.45671	-0.01307	0.09421	-0.10862	-0.06936	-0.22370	0.07070	0.05778
-0.06625	0.04370	0.15846	-0.31718	-0.03249	0.15602	0.12271	-0.03085	0.01061	-0.00974
0.01022	0.00114	0.00389	-0.01475	-0.08614	0.01523	0.08432	0.02433	-0.01319	0.02831
0.07763	0.01792	0.02145	-0.02209	0.00443	-0.03078	-0.01074	-0.01176	0.00024	0.00727

VARIABLE 48

0.62243	-0.17055	0.00852	-0.08037	0.13882	0.05181	0.05601	-0.08977	0.00170	-0.15635
-0.32724	-0.08677	-0.10703	0.11019	-0.03650	0.37357	-0.03507	0.04312	0.04620	0.01226
-0.09195	0.14696	0.20515	0.11133	0.16683	0.02850	-0.15263	0.04700	-0.12218	0.05807
-0.02637	-0.17792	0.04022	-0.17702	0.00291	-0.04636	-0.02201	0.04007	-0.00909	0.00382
0.02859	-0.04242	-0.03728	-0.02724	-0.02311	-0.01903	-0.00353	0.00067	0.00302	-0.00283

VARIABLE 49

0.75937	0.12775	-0.25749	0.22505	0.07162	-0.00814	-0.05716	0.17775	0.11091	-0.19253
0.02100	0.08810	-0.05422	-0.00640	-0.14647	-0.02635	0.05746	0.14636	-0.04972	-0.06843
-0.01639	-0.04983	-0.15334	-0.10222	0.10760	-0.06343	-0.03960	0.00327	0.04994	-0.10242
0.07822	0.01341	0.01899	-0.08020	0.04709	0.10024	0.02731	-0.02866	-0.00580	-0.11190
-0.01427	-0.00493	0.02620	0.01062	-0.00597	-0.08646	0.06592	0.01902	-0.01206	-0.01813

VARIABLE 50

0.77154	0.04151	-0.19773	0.24300	0.07994	-0.09840	0.07697	0.05178	0.04306	-0.07945
-0.01110	0.10672	0.22613	0.01459	0.00773	-0.10385	0.00498	-0.15988	-0.11705	0.05218
0.03719	-0.02563	0.06853	-0.01262	-0.09171	-0.05533	-0.22056	0.06298	-0.10196	-0.11905
-0.11662	0.10350	0.03610	0.01307	-0.00938	-0.01363	-0.04799	0.02896	0.02602	0.14968
0.05200	0.03488	0.00771	0.02058	-0.00618	-0.00810	0.04323	-0.03399	-0.02777	0.00866

ROTATED FACTOR MATRIX

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VARIABLE 10	0.05026	0.46956	0.04802	-0.08241	-0.16561	0.08076	-0.32590	0.09593	-0.03655
0.59324	-0.05380	-0.10131	0.24039	-0.01792	-0.01563	0.05336			
-0.05689									
VARIABLE 11	-0.00470	-0.07777	-0.14452	0.09681	0.09013	0.10244	-0.04522	-0.01017	0.03892
0.07423	-0.03242	0.02663	0.01271	-0.00459	-0.08238	-0.01447			
0.84706									
VARIABLE 12	0.09823	-0.37073	-0.07366	-0.01635	-0.34466	0.08272	0.07272	-0.13014	0.08399
0.05675	-0.16699	-0.39458	0.17142	0.51090	-0.04767	-0.17131			
0.03457									
VARIABLE 13	-0.04639	-0.05115	-0.05292	-0.12376	0.09656	0.15875	-0.22448	0.00219	0.75147
0.09079	0.10611	-0.17809	0.09685	0.13462	0.07208	0.00050			
0.00997									
VARIABLE 14	0.10017	0.09054	-0.09537	-0.12404	0.08597	-0.10136	0.02398	0.04312	0.00961
-0.11465	0.06855	0.13845	-0.05943	0.73602	-0.12685	0.02915			
0.01099									
VARIABLE 15	-0.16934	0.32130	-0.01796	0.00530	0.08359	-0.06353	0.76071	0.21881	-0.14081
-0.01096	0.06357	-0.07861	-0.12366	0.07836	-0.09989	0.16850			
-0.18330									
VARIABLE 16	-0.01524	-0.28928	0.03157	0.00914	0.04761	0.04336	0.02553	-0.19187	-0.09867
0.17837	-0.03443	-0.02371	-0.09986	0.27891	-0.70522	-0.09735			
0.15612									
VARIABLE 17	-0.18768	0.10514	0.03100	-0.20601	0.12674	0.19973	-0.05499	0.13513	-0.54921
-0.01171	0.20634	-0.05166	0.21497	0.30173	0.02395	-0.10695			
0.07795									
VARIABLE 18	0.03136	-0.56647	-0.17935	0.07264	0.11888	0.10317	0.11287	-0.06077	0.03888
-0.18741	-0.12615	0.10796	-0.20303	0.31666	0.40369	0.01710			
-0.22049									
VARIABLE 19	0.00387	0.06183	-0.94805	0.04779	0.06340	-0.04906	0.07203	0.11586	0.00484
-0.01563	-0.00906	-0.08208	0.00684	0.00431	0.04581	-0.03618			
0.04055									
VARIABLE 20	0.03803	-0.10220	-0.91676	-0.01101	-0.01975	-0.02893	0.09237	0.01316	0.05252
0.01337	-0.04458	-0.00258	-0.01838	0.07125	-0.03049	0.04554			
0.10181									
VARIABLE 21	0.04843	0.07627	0.04241	0.04340	-0.85124	-0.04052	-0.11036	0.18655	-0.06202
0.15764	-0.09128	-0.03185	-0.01877	-0.10435	0.02514	0.08624			
-0.06463									

[illegible]

APPENDIX XII FACTOR COMPONENT SCORES

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SOCIAL WELL-BEING KS CNTYS 1970

11	-1.8279	0.5594	-1.0063	0.5075	2.2633	0.4736	-0.1824	-0.8390	2.1051
2	-0.4290	-0.1360	-0.4214	-1.5533	0.8860	0.0567	0.4349	3.7393	
21	1.1466	0.0237	-1.3277	0.0583	-0.4012	0.2452	3.9495	-0.3083	-0.9107
2	-0.4614	0.3264	-0.1915	-0.4314	-0.6234	-0.8473	1.9189	0.0853	
31	-0.5158	-0.7224	0.1433	0.2625	-1.4149	-0.1495	0.7732	2.3825	0.2121
2	-0.3469	0.7547	0.3347	0.4232	-1.0353	-0.1993	-1.4684	0.7533	
41	-1.8793	-0.5516	0.0515	-0.0056	-1.1433	-0.5833	0.3136	-0.7859	-0.9949
2	0.3081	0.2779	-0.4749	-0.4201	-1.9214	0.6993	-0.6519	0.4322	
51	-1.1986	4.5764	0.1053	0.2672	0.0782	-0.3430	0.9462	0.1813	-0.8577
2	-0.4278	-0.3576	4.7544	-0.0267	-0.8943	0.5026	-0.4822	0.2005	
61	-0.6670	0.2366	0.0553	0.2510	-0.0217	0.9835	0.1319	-0.0536	-0.9329
2	-0.0563	-1.5188	-1.3654	-2.2729	0.6674	0.1507	-0.0952	-0.0492	
71	1.8256	-0.7567	-1.7190	0.3519	0.2554	-2.7530	-0.5592	1.0826	-1.2556
2	1.8184	-1.6503	0.2021	-1.2567	-0.6757	1.1027	1.1181	-0.2879	
81	-0.1060	0.4463	-0.0941	-0.3673	0.1110	-0.1903	-0.0464	0.3402	-0.7934
2	-0.3112	0.7121	-0.2532	-0.5077	0.2549	0.8237	0.7590	-0.0922	
91	-1.1520	0.3770	0.2580	0.2804	-0.4442	0.7422	-0.6936	-0.3394	0.2987
2	0.0435	-1.3949	0.8547	0.0989	0.7070	-0.1643	-0.3730	-0.1319	
101	0.9361	-0.1349	-0.6718	0.3407	0.5103	1.5304	-0.8233	-0.0292	1.0056
2	0.0937	3.8092	-0.1057	0.7458	-1.6190	-0.5900	-1.0778	0.3446	
111	-0.1781	0.1764	0.1400	0.1997	0.6965	0.3602	-0.0487	1.1053	-1.2469
2	-0.4484	-0.2448	-0.5951	-1.0091	-0.0770	-0.3261	0.9390	-0.3401	
121	0.7639	3.2996	-0.2090	0.0382	0.3656	0.0992	-0.4335	0.1640	0.6334
2	0.2989	0.3791	-0.7659	0.8334	0.6627	-0.1005	-0.1886	-1.3654	
131	1.2477	-0.6444	-0.9616	0.4112	1.3366	0.4521	-0.4604	0.9834	-0.7242
2	0.4718	0.4359	3.8472	-0.9361	0.2764	0.2062	0.3782	-0.3043	
141	-1.1565	-0.6860	-1.1099	0.1281	1.5240	-0.5641	0.3097	2.6343	0.7238
2	-1.1253	-1.6055	-0.3644	-1.5200	0.0836	0.2985	-0.9523	2.3135	
151	-0.2242	-1.2227	-0.3391	0.2159	-0.9259	0.8041	-0.7515	0.3569	1.9139
2	1.1963	-0.0238	0.8621	0.0309	-0.7276	1.5253	-0.1325	-1.1301	
161	0.2200	-0.3627	0.0331	0.8024	-0.9837	-0.7479	-0.8554	0.0311	1.2499
2	-0.2201	0.5993	-0.6544	-1.0199	1.7647	-1.1739	-0.6139	-0.9249	
171	0.1840	-0.3042	-0.3330	-0.2147	0.3790	1.1819	3.8293	-1.4251	0.5374
2	0.7973	-1.4424	-0.4333	0.7345	-0.5333	-0.5707	-0.7220	0.0083	
181	1.1567	2.8335	2.0532	0.0993	-1.1149	-0.7699	-0.5857	-1.4803	1.0063
2	0.0633	0.6654	-0.8639	-0.4425	0.7049	1.2727	0.3510	2.5572	
191	0.2780	0.0328	0.2799	0.0428	-0.7305	-0.0096	-0.2176	0.9378	0.4452
2	-0.5010	-0.3399	-0.6992	-0.5542	0.8697	0.1711	-1.7497	0.3621	
201	0.5552	-0.0603	4.7929	-0.4077	1.8105	1.5152	0.9134	1.9587	-1.4063
2	1.7316	-0.2785	-0.0329	0.3727	-0.0069	0.2939	0.0917	-0.3448	
211	-0.7940	-0.0320	-1.2083	-0.4831	-0.0951	-0.4270	-0.1058	-0.1900	-0.9698
2	-0.2476	-0.8992	-0.2535	1.7993	-0.8623	1.3301	-0.6891	0.8263	
221	0.9565	-0.6155	0.3314	-0.0084	1.0963	-0.0585	-0.6454	-0.6145	-0.3768
2	0.3839	0.5497	0.6837	-0.9631	-0.1545	-0.1246	-4.3253	-0.7460	
231	-0.2514	-0.5785	0.4937	-0.0241	-0.1038	-0.5631	-0.4186	-0.3812	-1.0957
2	0.9432	1.4246	-0.6453	1.0987	0.2224	3.0743	-1.0766	0.9388	
241	1.6312	-0.2140	-0.4406	-0.0191	-0.4854	2.0652	-0.0525	-1.1926	-0.6359
2	0.0959	-2.0280	0.1963	1.1670	0.8985	-0.1238	0.0908	0.9752	
251	0.9213	-1.6653	0.8476	-0.0815	-0.9302	-0.7535	-0.5926	0.3559	-1.2614
2	0.4930	0.2876	0.9956	2.0894	0.1393	-0.8776	0.5432	4.0743	
261	-0.1527	0.1105	-0.3978	0.3281	0.1324	-0.5187	-0.0354	-0.0445	1.1180
2	-0.4445	0.0100	0.1033	1.2361	0.7623	-0.5676	0.4193	-0.7132	
271	-0.1977	-1.5985	0.8282	0.2724	-1.7214	1.0245	1.6278	-0.4250	0.9992
2	-4.2760	0.7324	1.4558	-0.4364	1.7235	2.4252	0.2323	-0.8631	
281	-0.0472	0.1251	-0.2949	0.1783	0.2499	-0.0930	-0.3953	1.0496	-1.3736
2	-0.7646	0.3536	-0.3120	-0.6715	-0.4604	-1.6776	1.1787	-0.2690	
291	1.5023	0.0235	0.4201	0.7495	-0.1021	0.8077	-0.7589	-0.2243	2.4726
2	0.6814	-1.9143	0.0155	-0.5958	-2.1914	2.3307	1.2933	-0.7733	
301	0.1223	-0.8264	0.0532	0.3819	-0.1923	0.2625	-0.3954	-0.0018	0.0906
2	0.3481	-0.1338	0.2677	0.8389	0.6517	1.5228	0.4986	-0.3592	
311	0.8090	-0.4552	0.0330	-0.1223	-0.2375	-0.9421	-0.3781	-0.5056	0.1053
2	-0.0856	-0.1152	0.2266	-0.7436	0.4973	-1.0662	-0.1547	-0.2027	
321	-1.0528	-0.2303	0.4247	0.0876	-0.2000	0.0368	0.1035	-1.1071	1.4431
2	-0.1928	0.3592	-0.0432	-0.9901	-4.5131	-0.4172	0.6624	-0.4844	
331	-1.8569	0.2084	-0.1256	-0.2194	-0.7213	-0.9916	-0.4060	0.3519	-0.1124
2	-0.5193	-1.3204	-0.1433	2.3488	-1.2933	-1.1511	-0.5628	0.0052	

341	0.6611	-0.2603	-0.1536	0.2042	-0.7100	-1.1539	1.6690	0.0233	1.5143
2	0.0942	-0.0424	0.1734	-0.0804	0.7787	-1.6430	-0.3840	-0.4021	
351	-0.0191	1.5471	-0.4413	0.3568	-0.1163	0.8072	-1.0025	0.0481	-1.4789
2	-1.1608	0.1078	-1.7401	0.1880	0.1681	0.2445	0.1237	-0.3675	
361	0.9745	-0.3032	-0.4295	-0.4166	-0.6135	0.1147	-0.0349	-0.5180	-0.6058
2	0.1889	0.1879	-0.0389	-0.2740	-0.7589	-0.7302	1.0459	0.4631	
371	-0.9354	0.1704	0.3577	0.2035	-0.2559	-0.5205	1.9851	-0.3404	1.3371
2	4.1181	0.4261	-0.3443	0.9147	1.3519	-0.0054	0.3100	-0.3521	
381	-0.6191	-0.0587	-0.3363	0.1168	-0.6465	-0.6054	-0.4574	0.6879	-0.3710
2	-0.4798	0.8179	-0.2439	1.3955	-1.1691	0.0800	-0.4830	0.2976	
391	1.4049	-0.0059	-0.5968	0.3099	0.3486	0.4093	-0.7406	-1.7677	-0.8208
2	-0.0871	-0.5378	-0.3051	0.2792	-0.2997	-0.7217	-1.2683	0.1416	
401	-1.4651	-0.7527	0.1208	-0.0533	-0.8697	-0.0573	-0.6951	-1.3630	-0.3589
2	0.4042	-0.1069	0.2335	0.5359	0.5566	-0.5316	0.1532	-1.3493	
411	-0.4029	-0.2187	-0.0317	0.0667	-1.9502	1.0316	-0.6862	-0.4808	0.6761
2	1.7264	1.6298	1.0409	-1.5968	0.9954	-1.0972	0.8949	1.5511	
421	-0.5836	-0.2839	-0.4990	-0.4999	-0.2402	-0.8028	-0.3212	-0.8655	0.0322
2	-0.8668	-0.6661	0.1943	1.2873	0.7746	-0.0808	0.6556	-0.6047	
431	0.1350	0.2399	-0.6280	0.8383	-0.0912	0.9905	-0.3289	0.6838	0.1591
2	-0.2315	0.1510	-0.9415	0.0765	-0.6900	-0.0483	0.6455	-0.1262	
441	0.3011	0.4593	-0.4483	0.1550	-0.9915	1.1941	-0.1182	3.8309	0.2796
2	0.0259	0.5532	-0.2878	0.5042	0.9047	-0.8462	0.5591	-0.7799	
451	0.6831	-0.2140	0.1479	0.1353	-0.2965	-2.1311	2.6493	1.0870	0.0760
2	-0.3393	1.4760	-0.5186	0.1350	0.6590	1.4322	-0.2289	-0.0865	
461	-0.8012	-0.9756	-0.4516	-0.3536	-0.0474	-0.1679	-0.3486	-0.3671	-1.1637
2	0.3664	-0.4139	0.5296	0.5158	0.4776	0.0001	1.7332	-0.4507	
471	-0.7555	-0.7454	0.0143	-0.1481	3.2277	-1.2027	-0.0787	-1.9473	-0.4618
2	-1.0260	1.4910	0.7437	1.2888	1.3059	0.2737	1.1444	-0.7678	
481	-0.4491	-0.8388	-0.0381	-0.0356	0.7118	0.2150	-0.4909	-0.5335	-0.3327
2	0.6877	0.7970	1.3447	-0.8287	0.1048	-1.3079	-0.6547	-0.6465	
491	-0.1448	0.1747	-0.1534	-7.4962	0.1364	0.4964	-0.3630	0.3384	0.6778
2	-0.0955	0.5208	-0.2425	-0.7988	-0.1332	0.2309	0.3441	-0.1355	
501	-0.0916	0.6285	-0.5878	0.0169	-0.2445	0.5535	-0.1485	-0.8314	-0.0493
2	0.3167	-0.4141	-0.1925	0.8690	0.7109	-1.1763	-0.3199	-0.1698	
511	-0.9371	-0.8713	0.0113	-0.1450	0.1762	-0.9898	-0.3094	-0.5317	-0.9511
2	0.8881	-0.9562	0.0400	-1.3839	0.9221	1.2418	-1.0441	-0.3887	
521	0.5177	0.5632	-1.0742	0.5201	0.0653	0.1765	-0.3981	0.3960	0.3778
2	0.3701	0.7408	-0.7303	0.0614	0.5410	0.2183	-0.1363	0.0906	
531	0.9515	0.9056	0.4423	-0.0434	-0.1175	-1.5840	-0.2083	-0.4021	-0.7129
2	-0.2920	-0.0741	-0.8157	-1.1816	0.2266	-0.4118	-0.5012	-0.5210	
541	-0.1787	-0.3653	-0.2659	0.1102	0.4144	0.3919	-0.3442	-0.0138	-0.7717
2	-0.2131	0.6276	-0.3744	-0.5526	0.1263	0.0330	1.4485	-0.3968	
551	1.3919	-0.2078	-1.4728	0.2241	0.2671	0.1038	-0.8297	0.0341	0.1379
2	-0.8294	0.3944	-0.2866	0.7306	-0.7975	-0.0946	0.1481	-0.0061	
561	1.7332	-0.5619	2.0424	-0.5684	1.0343	-1.5972	-0.6984	0.2674	2.5625
2	-1.3093	-1.8701	1.0764	0.8853	-0.2443	-1.7085	-0.0475	-0.0482	
571	2.5754	0.3020	-0.7126	-0.5021	0.1405	1.3083	0.9939	-0.9316	-1.1078
2	-0.7739	-0.7910	-0.5942	-0.0158	-0.1487	0.1924	-2.0536	0.3902	
581	0.5354	0.3465	-0.5193	0.0940	0.5521	-0.4266	-0.6189	0.3177	0.8949
2	0.3247	-0.2471	-0.4570	0.7359	0.1015	1.8756	0.8504	-0.9384	
591	-0.3765	-0.5883	-0.1290	0.1985	-0.5610	1.0019	-0.1915	-0.7377	-0.2045
2	0.8169	-0.0460	0.6312	-1.1957	0.0386	-0.9106	0.7997	-0.0983	
601	-0.8594	-0.5799	0.6859	0.9078	3.9305	0.5608	0.5666	0.2893	0.6726
2	-0.2426	0.6650	-1.1579	0.6325	-0.4101	-0.3380	0.3867	-0.0348	
611	-0.2978	-0.6453	2.6108	0.7880	-0.7581	1.9022	-0.7414	-0.2637	-1.1172
2	-1.0508	-0.4382	-0.3161	0.2289	-0.4443	-0.2417	0.7026	-0.0275	
621	-1.8207	0.2159	-0.2515	0.3947	-0.1823	1.1530	-0.0203	-0.1879	-0.3711
2	0.2129	-0.1299	-0.4270	-1.1768	0.2951	0.2172	-1.3541	-0.7900	
631	-0.0687	0.1695	2.2726	0.4574	-0.7051	-2.8849	-0.1442	-0.9111	-0.5374
2	-0.8456	0.5643	-0.8211	-1.5801	-0.9632	-0.9459	0.2289	-0.4360	
641	-0.5602	1.3280	-0.6427	0.0961	0.1000	-0.2423	-0.3702	0.1995	-0.4827
2	0.3509	0.7407	-0.8445	0.6914	0.1124	-0.1900	-0.2528	-0.9109	
651	-1.4949	0.2095	0.0711	-0.2342	-0.5394	-0.1344	-0.2055	0.9104	0.5897
2	0.0346	-1.6708	-0.4579	1.1731	0.6303	-0.9184	-0.4848	-0.3331	

APPENDIX XIII.

Survey Document

February 18, 1976

Fellow Kansan,

I need your assistance, I'm currently engaged in a project supported by the Center for Rural Development Research at Kansas State University, studying the social well-being and perceived quality of life in selected Kansas counties. While I can find much information on your county in published sources such as the Census, I feel that in order to develop better programs to improve the quality of life for people in less urbanized areas, it is necessary to understand how you evaluate factors that affect your well-being.

I hope that you'll respond to the enclosed questionnaire. It will take very little of your time, and it will assist me in the preparation of my Master's thesis. A prompt return is necessary if I am to complete my study on time. Please return your survey in the enclosed envelope; the return postage has been paid. Thank you for your help.

Sincerely,

Patricia Lambert

While the judgements represented in the thesis prepared by Miss Lambert will be her own and not those of the Department of Geography or the University, her study will meet accepted scholarly standards. I urge you to help a serious student. All information will be analyzed and filed without names or addresses

Dr. H. L. Seyler
Faculty Advisor

BACKGROUND INFORMATION: All information is recorded by county of residence. Your name and address are not needed or recorded. Please fill in the following blanks:

COUNTY OF RESIDENCE _____ AGE _____ SEX _____

LIVE IN TOWN _____ LIVE OUT OF TOWN _____

YEARS LIVED IN YOUR COUNTY _____ YEARS OF SCHOOL COMPLETED _____

NUMBER OF CHILDREN AT HOME _____ OCCUPATION (please indicate if you are retired _____ NUMBER OF SOCIAL, CIVIC, OR FRATERNAL ORGANIZATIONS OF WHICH YOU ARE A MEMBER (for example: the American Legion, the Chamber of Commerce, etc.)

PLEASE RESPOND TO THE STATEMENTS ON THE FOLLOWING PAGES BY MARKING THE APPROPRIATE BLANK AND COMMENT AS YOU WISH. ONCE AGAIN, MANY THANKS FOR HELPING ME WITH MY STUDY.

1. HOUSING QUALITY IS GENERALLY VERY GOOD FOR FAMILIES IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
2. WE DON'T SPEND ENOUGH MONEY TO EDUCATE GRADE AND HIGH SCHOOL STUDENTS IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
3. A LARGE PROPORTION OF FAMILIES IN MY COUNTY HAVE INADEQUATE INCOMES.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
4. THE LEVEL OF EDUCATIONAL ATTAINMENT IS HIGH FOR PEOPLE IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
5. MY COUNTY OFFERS MORE THAN ADEQUATE OPPORTUNITIES FOR PEOPLE TO IMPROVE THEIR STANDARD OF LIVING.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:

6. THERE IS A STRONG "COMMUNITY SPIRIT" IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
7. THE DIVORCE RATE IS LOW IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
8. VOTER INTEREST IN NATIONAL ELECTIONS IS HIGH IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
9. THE HIGH SCHOOL DROP-OUT RATE IS HIGH IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
10. PEOPLE IN MY COUNTY ARE POORLY INFORMED ABOUT NATIONAL
 AND WORLD AFFAIRS.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
11. COMMUNITIES IN MY COUNTY ARE EXPERIENCING POPULATION
 GROWTH.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
12. MY COUNTY HAS TOO FEW PUBLIC HEALTH WORKERS TO SERVE
 ITS NEEDS:
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
13. AN INCREASING SHARE OF MY COUNTY'S POPULATION IS MADE
 UP OF YOUNGER PEOPLE.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
14. MY COUNTY SPENDS TOO MUCH MONEY ON PUBLIC RECREATIONAL
 FACILITIES.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:

15. PEOPLE IN MY COUNTY RESIST CHANGE.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
16. THE ABORTION RATE IS HIGH IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
17. I FEEL THAT I'M WELL INFORMED.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
18. MOST OF MY INFORMATION IS OBTAINED FROM LOCAL NEWSPAPERS.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
19. MY PUBLIC LIBRARY HAS A SUFFICIENT SELECTION OF BOOKS
 AND PERIODICALS FOR ADULT READERS.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
20. MOST ADULTS REGULARLY USE THE LOCAL LIBRARIES IN MY
 COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
21. UNEMPLOYMENT OF ABLE-BODIED WORKERS IS A PROBLEM IN
 MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
22. MY COUNTY CAN BE DESCRIBED AS SOMEWHAT ISOLATED.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
23. MY COUNTY HAS TOO FEW DENTISTS TO SERVE ITS NEEDS.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ neutral _____
24. A SUBSTANTIAL PERCENTAGE OF RESIDENTS IN MY COUNTY ARE
 MEMBERS OF A MINORITY GROUP.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:

25. PEOPLE WOULD BE UNEASY IF LARGE NUMBERS OF A MINORITY GROUP MOVED INTO MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
26. MY COUNTY SPENDS A GREAT DEAL OF PUBLIC FUNDS ON CARE FOR THE AGED.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
27. MY COUNTY'S POPULATION HAS A LARGE NUMBER OF ELDERLY POOR.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
28. MY COUNTY HAS A HIGH LEVEL OF PROPERTY CRIMES.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
29. MY COUNTY SPENDS TOO MUCH MONEY ON JAIL AND PRISONER EXPENSES:
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
30. THERE ARE TOO FEW DOCTORS IN MY COUNTY TO SERVE ITS NEEDS.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
31. MY COUNTY HAS ADEQUATE HOSPITAL SERVICES.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
32. I AM SELDOM CONCERNED ABOUT MY PERSONAL SAFETY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:
33. I HAVE THE OPPORTUNITY FOR CULTURAL ENRICHMENT IN MY COUNTY.
 strongly disagree _____ disagree _____ neutral _____
 agree _____ strongly agree _____ comments:

34. THE SUICIDE RATE IS HIGH IN MY COUNTY.

strongly disagree _____ disagree _____ neutral _____
agree _____ strongly agree _____ comments:

35. MY QUALITY OF LIFE IS VERY GOOD.

strongly disagree _____ disagree _____ neutral _____
agree _____ strongly agree _____ comments:

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COMPARISONS OF SOCIAL WELL-BEING COMPONENTS AND
PERCEIVED QUALITY OF LIFE INDICATORS
IN RURAL KANSAS COUNTIES.

by

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B.A., Kansas State University, 1973

AN ABSTRACT OF A MASTER'S THESIS

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ABSTRACT

In the last two decades, there has been increased interest among social scientists in the description and analysis of areal variation in social conditions. This interest has been, in part, a response to growing public awareness that the "good life" is not within the grasp of every American. The popular concern for improving social conditions has placed pressures on public administrators who, lacking adequate information sources on which to base policy, have turned to the academic community for useful social indicators to guide decision-making and planning.

In their investigations, researchers have confronted conceptual as well as practical obstacles in developing a system of social accounts. Lack of universally available data has been one such obstacle, for no mechanism exists to date which is a comprehensive source for social statistics. Another obstacle has been the failure of researchers to design a list of indicators of social conditions which would parallel the traditional economic indicators. A third obstacle has been in the confusing terminology used in research attempts. The indiscriminate use of similar labels to describe different phenomena has made the social indicators movement a terminological jungle of terms like "social well-being," "quality of life," and "level of living."

Another problem area has been the lack of research at scales and settings more appropriate to social planning efforts. Most studies have concentrated on large targets such as the state and national levels. Aggregated data for these levels obscure extreme situations and mask regional variation. Lack of data for smaller units is the excuse most often given for not using scales like the county, or settings such as less-urbanized areas.

This study replicates earlier social well-being research at the rural county level. Comparison between the results obtained here and those of earlier studies is an attempt to assess the influence of scale and setting on social well-being components. The governing hypothesis is that social well-being components are not congruent at different scales and settings, and that these components and perceived quality of the indicators are not congruent at any scale.

To test this hypothesis, principal components analysis was applied to sixty-five less-urbanized Kansas counties and fifty variables chosen to replicate those in earlier research. The resulting components reveal differences which reflect variations in scale and setting. To assess accordance between the social well-being components and perceived life quality, a survey was developed which reflected the dimensions revealed in the components analysis. These two data sets were compared for congruency. No significant association obtained between the more "objective" data for a social aggregate and the way respondents perceived their quality of life.

There are, then, two geographies of social conditions, the one obtained from analysis of census and similar data and the other revealed in perception data. Studies such as this may serve to broaden our knowledge of locational variation of social characteristics on the landscape. If developmental planning policy is to be effective and publically supported, then planners must recognize these two elements. One perspective alone is neither adequate nor comprehensive.