

C O M M U N I T Y A C T I O N I N A P P A L A C H I A

An Appraisal of the "War on Poverty" in a
Rural Setting of Southeastern Kentucky

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UNIT 2

ECONOMIC PROGRESS IN AN APPALACHIAN COUNTY: THE
RELATIONSHIP BETWEEN ECONOMIC AND SOCIAL CHANGE

by

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COMMUNITY ACTION IN APPALACHIA

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ABSTRACT

ECONOMIC PROGRESS IN AN APPALACHIAN COUNTY: THE RELATIONSHIP BETWEEN ECONOMIC AND SOCIAL CHANGE

The statistical tests conducted with Time-One and Time-Two survey data indicate that there has been positive economic and social change among the rural people of Messer, Kay Jay, and Middle Fork communities of Knox County, Kentucky. Since random sampling procedures were followed and the samples were large enough, inferences about the rural population of these three communities can be made.

The data indicate that there has been economic and social change among these rural families, a change in those characteristics which are related to economic development, which would appear to be antecedent to greater economic growth, though one might be expected to lag behind or precede the other for a time. They are more sensitive to the local, state, national, and international events that shape their lives, and the statistics indicate that these people are spending more hours attending to the mass media in 1968 than they did in 1966. They have more money to spend on the necessities and "luxuries" of life than they did in 1966, although the number of those who are unemployed has increased, and the employment level of those who are employed has dropped. The implication of this statistic is that the increased amount of average family income is not due to an increased exploitation of productive sources of income but to an increased dependency on transfer payments. The aggregate statistics on the county point to this ominous fact.

Furthermore, the center activities are presumably occupying the time of the most impoverished. The negative beta coefficient in the forty-six

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variable problem indicates that as family income increases, the extent, or amount, of participation in center programs decreases; the most impoverished are likely to be the ones to take advantage of the programs. In the spring of 1968 more persons were participating in center programs regularly and more persons were undergoing economic and social change as indicated by the eleven-variable problem run for time-two data. If indeed the community centers in these areas have been the "hang-outs" where fruitful discussions about common goals and problems took place, where persons came to converse with young people from VISTA and other organizations, where persons sought advice on everything from birth control measures to filling out tax reforms, then the centers have rendered a great service. The survey data indicate that the community center concept is not an anathema but consistent with the process of social change. That is, those persons who showed advancement with respect to certain key receptiveness-to-change variables in Time Two also were participating more in center activities. The regression problem results for the eleven variables in Time Two indicate that social and economic change is underway in these Knox County communities, and this is the kind of trend that must be encouraged.

It should be noted that the population for the statistical problems in this project was defined as the rural families living in Messer, Kay Jay, and Middle Fork. No inferences beyond this population to Knox County as a whole should be made. Finally, it should be stressed that the lack of adequate survey data on the economic standards of these families made the development of a sound and reliable economic scale impossible. More extensive data on buying habits, investment and savings habits, sources of income, etc., would have rendered a better picture of the economic conditions of these communities and the county.

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Since this investigator joined the OEO-CAP Evaluation Project in June of 1968, he had very little time to waste in getting his report completed. Everyone with whom I had to deal on the project was very helpful in directing me to the data I needed. Special thanks must go to B. K. Singh and Dr. Lewis Donohew, project investigators, who provided valuable insight into the approach to the economic phase of the project. These colleagues also made the necessary data available to me during the hectic months of data evaluation and interpretation. Thanks must be extended to Dr. Ottis Murphy, project investigator, who also gave me valuable insight and information concerning the economic conditions of the rural families in Knox county. He has included a valuable case study in the final project report entitled The Knox County Economic Opportunity Anti-Poverty Arts and Crafts Store Project (Unit 10) which is very germane to my section of the project. Dr. Murphy also provided me the participation variable information and explicated the design of this factor. Thanks must also be given the project director, Dr. Paul Street, whose patience and help made the culmination of this paper possible.

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FOREWORD

The first part of this report is replete with secondary data presented as evidence of economic progress or decline in Knox County and three other contiguous counties that make up the South Cumberland Valley Development Area. This author was somewhat encumbered with the problem of too little up-to-date data which could be purveyed as testimony to the economic development of the area over the last few years. But this is not a unique problem in economic research, especially for those investigators who have focused on trends in a particular region (e.g., a county within a state), in a particular industry, or in a particular developing country where modern and efficient methods of data collection were not operative.

One of the most formidable problems facing the development economist is time. It is the lapse of time between forecasting and policy formulation, between policy formulation and implementation of needed programs, that most inhibits the development process. Of course, I have assumed here that the economists' forecast of future needs and future trends is accurate. This is not always the case, however, because economic trends are largely a function of human behavior, the charting of which is itself a difficult task.

Economists consult history when trying to predict the economic behavior of man. Economic forecasting has an historical base, and to the extent that history provides the cues of what lies ahead, accurate prediction of economic needs and trends is a function of the number of computerized data tapes containing pertinent and contemporary economic and social statistics.

But even if data banks are maintained, the economist is confronted with another problem when he relates statistics for one month, quarter, or year to comparable figures for similar time periods. Cyclical fluctuations—the sporadic and yet patterned changes in economic trends—can act as bottlenecks in the predictive process if economists are not careful in controlling for seasonal and yearly fluctuations. The reader of an economic report filled with data on economic indicators and comparisons of the data must be aware of the impact of cyclical fluctuations. Appraisals of current trends in particular industries, for example, must be interpreted in the light of the economy as a whole and trends in other industries, the linkage effects of which affect factor prices and product prices of dependent industries. The reader must also be aware of the peak and trough months of particular business cycles when he interprets specific data.

The following pages contain statistics on Knox County and contiguous counties as well as data for Kentucky and the nation as a whole. Before the reader evaluates the county and state statistics as compared to the national data, he must be cognizant of the cyclical sensitivity of the national and state economy. The National Bureau of Economic Research establishes the monthly dates of peaks and troughs in business cycles. There have been three complete cycles since 1948, and the terminal peak of a fourth cycle has not come as yet since the national economy is in its nintieth month of continued expansion. The initial peak of the first cycle came in November of 1948, the trough in October of 1949, and the terminal peak month came in July of 1953. Since cycles are continuous, the terminal peak of one cycle is the initial peak of the following cycle. The trough of the second cycle came in August of 1954 and in July of 1957 the terminal peak of the cycle was registered. In April of

1958 the third cycle reached its nadir and climbed to a high point in May, 1960. The national business cycle trough of the fourth cycle came in February of 1961.¹

In May of 1966, L. Randolph McGee had reported, under the auspices of the Bureau of Business Research at the University of Kentucky, a report on the post-World War II sensitivity of the Kentucky and national economics during cyclical expansions and contractions. Dr. McGee, associate professor of economics at the University of Kentucky, employed four specific series for the purpose of comparing the economy of Kentucky with the national economy during the post-war years: personal income, cash receipts from farm marketings, non-agricultural employment, and agricultural employment.²

With respect to seasonally-adjusted, monthly, personal income, Kentucky's average annual rate of increase from 1946-1965 was 5.1 per cent compared to a national average increase of 5.6 per cent.³ After employing the same methods of measuring business-cycle peaks and troughs as the researchers at the National Bureau of Economic Research, McGee concluded that the peaks and troughs in the personal-income cycles of the national and Kentucky economies have roughly coincided with the turning points of the aggregate business cycle which reflect overall economic activity. Since World War II, personal income in Kentucky has moved along at the same rate as United States personal income during periods of expansion; but during periods of contractions, Kentucky personal income has tended to drop lower than the national personal income.⁴

¹L. Randolph McGee, "Cyclical Sensitivity of Kentucky's Economy," A research brief published by the Bureau of Business Research, University of Kentucky (May, 1966), p. 7.

²Ibid., p. 3.

³Ibid., p. 9.

⁴Ibid., p. 11.

In the period from January, 1947, through September, 1965, the average annual, seasonally-adjusted rate of growth of cash receipts from farm marketing was only 1.26 per cent for the United States and .92 per cent for Kentucky. During more recent years, contends McGee, the growth rate has been in favor of Kentucky. McGee concludes that farm cash receipts in Kentucky have been, on the average, more sensitive to cyclical contractions and expansions than the United States series. Generally, the Kentucky series has increased at a faster rate during cyclical expansions than the United States series, and it has declined at a faster rate during cyclical declines than the national series.⁵

Another series to which McGee alludes in his comparisons is non-agricultural employment. The average annual adjusted rate of increase in Kentucky's non-agricultural employment from 1946-1964 was 1.9 per cent compared to the United States' figure of 1.7 per cent. This particular series has fluctuated in the same manner as the general business cycle so that the trends of the series on a national and state level have generally coincided with the general business cycle. During this period, however, the Kentucky series has manifested itself as being more sensitive during peak and trough periods than the national series. So, during periods of cyclical fluctuations of an expansionary nature, the Kentucky series has led the national series but lagged its national counterpart during cyclical declines.⁶

⁵Ibid., p. 11.

⁶Ibid., p. 13 and 14.

Finally, McGee compares the state and national agricultural employment series for the period January, 1950, to December, 1965. The trend lines for this series indicate that agricultural employment declined in Kentucky and in the United States. The average annual decline was 2.6 per cent in Kentucky and 3.4 per cent in the United States. On the average, Kentucky's agricultural employment is not as sensitive to business-cycle contractions as is the United States series. Expansions are stronger, however, for the Kentucky series.⁷

McGee concludes his preliminary report with the following observations:

Kentucky's economy is more sensitive than the national economy to both cyclical contractions and expansions. Personal income during expansions and agricultural employment during contractions represent exceptions to this general pattern of greater sensitivity. The reasons for greater cyclical sensitivity of the Kentucky economy are found primarily in (a) the smaller size of firms, and (b) the industrial composition of the Kentucky economy relative to the national economy⁸

McGee says that smaller firms encounter more difficulty in adjusting to economic decline than larger firms and have more survival problems. He also suggests that during the post-war period Kentucky has been the birth place of more smaller, marginal firms, relatively, than the United States as a whole. The author also concludes that Kentucky's economy is very sensitive to cyclical fluctuations because many of the cyclically sensitive industries in Kentucky--like agriculture, coal, machinery, and electrical machinery--make up a greater part of the industrial structure of the state than these industries make up for the national economy. The

⁷Ibid., p. 15.

⁸Ibid., p. 15 and 17.

small plant size of many Kentucky firms, coupled with an economy that is largely dependent on cyclically sensitive industries, have helped make the state economy more sensitive than the national economy to business cycle declines and expansions.⁹

It is always important to evaluate time-series data in the context of the whole economic picture for the state or the nation, and it is equally important that the researcher avail himself of all pertinent information that might have affected the data he has presented. I ask the readers of the ensuing pages to keep in mind the fact that the last 90 months have been unusual months in the history of economic growth in the state and that there are comparisons of 1960 data with data from the decade of the 1940's and 1950's which should be interpreted with this fact in mind. If we are honest in our research, we can facilitate the development process by presenting pertinent and valuable data on the economic development potentials of regions and countries, data which can provide the basis for research on future needs and potentials of developing areas.

This author has presented a lot of secondary data collected over many different and scattered years. It is hoped that this survey of development-oriented data will provide some cues as to what needs to be done. But, as the authors of many of the publications used by this investigator have pointed out, the contents herein should not be construed as suggestions for policy decisions or the data used on behalf of a particular approach to the economic development of Knox County.

⁹Ibid., p. 17.

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CHAPTER I

INTRODUCTION

The problem of economic development is not peculiar to the so-called developing countries of the world suffering from a shortage of raw materials and entrepreneurial talent but is a problem that plagues the modern world as well. For example, despite a gross national product that exceeds \$700 billion, an average per capita income of \$2,940, and an unemployment rate of less than 4.0 per cent, the United States has failed to feed adequately 10 million of its people and many more have failed to increase their family incomes above the poverty line of \$3,000 a year.¹ For these impoverished Americans, the United States is the land of the affluent that has failed to provide for those who have not the talent nor resources to capitalize on her wealth.

It is difficult to couch the development problem into a totally economic context because the poverty malady is to be understood only after the attitudinal, social, and cultural syndromes are interpreted and analyzed. Economic plans replete with suggestions for increased per capita output and employment within the depressed or primitive agrarian sectors of developing economies have been operationalized and greeted with no discernible increases because of the failure to recognize the cultural and psychological syndromes of the development problem. There are anthropologists who contend that something inherent in a people, per se, and not in the land or the physical resources necessary for economic growth

makes the idea of innovation, social and economic change, anathema to their heritage or culture. Other researchers, like communicologists, sociologists, political scientists, and anthropologists contend that political and social change must precede or progress with economic growth before the euphoric feeling of modernity takes hold of the impoverished people.

But of concern to us in this phase of the OEO-CAP Evaluation Project are the economic indices of growth that have characterized the Appalachian region in Kentucky with specific interest centered in Knox County, where community action centers have been in operation since 1965. The task involves the isolation of certain short-run indices that afford some testimony of the economic strides or declines being made in Knox County since the community development approach was operationalized in 1965. Once the meaningful indices are located and analyzed over time, the problem of making associations between these gains or declines and the presence of the CAP evolves.

Within the literature on economic development may be found many contradictory definitions of a "developing region or country," because the development economists are not consistent in their appreciation of particular short-run indices of economic growth which reflect development. Some economists contend that industrial output vis-a-vis total output or industrial population as a percentage of the total population is the key index of economic change and growth. Others put great stock in the ratio of population to land area; others contend that measures of accumulation of capital, its rate and volume, are the paramount indices of economic growth.² Certainly growth depends on the size and quality of the labor force, the availability of natural resources, the quality and extent of technology, and the amount of investment in social over-

head capital (i.e., investment in education, public utilities, highways, etc.), but not all the indices begin to show discernible increases at the same time or within a time period as short as three to five years.

A reasonable definition of a developing economic country, at least for our purposes and our given time period, is afforded by Jacob Viner: "It is a country that has good potential prospects for using more capital or more labor or more available natural resources, or all of these to support its present population on a higher level of living, or, if its income level is already fairly high, to support a larger population on a not lower level of living."³ This definition can be adapted to developing regions, it seems.

The emphasis, according to Viner, lies where it plausibly belongs, and that is on per capita levels of living. On the basis of this definition, a region may be underdeveloped whether it is densely or sparsely populated, whether it is capital-rich or capital-poor, whether it is a high-income-per-capita or a low-income-per-capita region, or whether it is an industrialized or predominantly agricultural region. So the issue, the key criterion, becomes whether the region has good prospects of raising per capita incomes, or of maintaining an existing high level of per capita income for an increased population.⁴

Per capita income, then, is an index that is ascertainable and meaningful as a gauge of change. It is a per capita measure of income that attests to the problems that a particular region or country encounters as it attempts to move into the take-off stage toward some semblance of sustaining growth. If the employed labor force within a developing region begins to make strides toward better efficiency via greater gains in

per capita output, the per capita income of the working man should reflect a marginal increase in his output. Unfortunately, in countries and regions characterized by low capital-to-labor ratios, the marginal productivity theory of wages seldom holds true. In industrial urbanized areas where this ratio is high, workers are paid more nearly the value of their marginal products. The increased efficiency and quality of the labor force is also a function of the amount and efficacy of investment in human resources; investment in sanitation and health facilities, in education and transportation, should augment the quality of the labor force and result in increased production. So the low productivity bottleneck to development is manifested through per capita incomes as an index of growth.

A second bottleneck to economic development and one alluded to by Viner, scarcity of capital, can also be gauged by a look at per capita incomes.⁵ Certainly, capital accumulation by the private sector is largely a function of the amount of personal savings, the quality of the labor force, the quality and extent of credit and savings institutions, and the amount and focus of corporate investment within the various sectors of the developing economy. When per capita incomes begin to rise, the marginal propensities to consume and save on the part of productive individuals should increase proportionately. When there is a discernible increase in disposable per capita incomes, and when the extent and quality of savings institutions is adequate, then savings and investment should ensue and multiplier effects should be set into motion with the result hopefully being increased production, employment, wages, and general growth. Of course, sound monetary and fiscal policy help curtail or abate the ominous by-products of spiraling growth (i.e., inflation,

increased prices and wages, etc.) but not even together are they able to secure increased employment, growth, and price stability simultaneously. Per capita income should be a sound and meaningful indicator of the extent of capital accumulated in a developing region.

Another bottleneck to economic development discussed by Viner in the context of developing countries is the population rate of growth. When there is a glut of persons in the age categories of below 16 and over 60, a developing region usually suffers from a lack of manpower and from a plethora of persons living on government transfer payments. Again, per capita measures of income afford a good index of population growth and some measure of the increase in manpower potentials. In an area like Appalachia, the problem is not so much a glut of unproductive individuals as it is the lack of enough manpower, skilled and motivated to learn, to entice industry to locate within or near the region. The need for a productive increase in manpower on a statewide level was forecast for Kentucky by Dr John L. Fulmer, who was director of the Bureau of Business Research at the University of Kentucky when the prognostications were made in January of 1965. Fulmer contends that in order to maintain the 1960-63 population growth rate of 27,100 annually, at least 142,000 jobs net must be added to the Kentucky economy by 1975. Another 59,000 jobs should be created in order to raise the ratio of jobs to population of the state to a level comparable with the rest of the South. This 59,000 increment in jobs would increase Kentucky's employment ratio to 34.4 per cent in the period from 1963 to 1975 and put it in line with the ratio of other Southern states; this increase in the employment ratio (ratio of employed to total population) from 31.4 per cent

in 1960-63 to 34.4 per cent in the period from 1963-75 would represent an increase of 42 per cent over the job-creation rate that occurred from 1960-63.⁶

Fulmer explains what this increment in population and productive manpower can do for business and personal incomes benefitting from the new employment. If the lower goal of 3,464,000 population growth for Kentucky materializes, then projected personal income for the period 1963-75 should increase by 70 per cent and retail sales by 70 per cent. If the higher goal of 3,712,000 population is reached within this period, total personal income and retail sales should increase by 82 per cent to \$10,082,000,000 and \$5,948,000, respectively. Fulmer's projection of retail sales stems from the estimated personal income accruing as a result of increased employment, and, in most of the period from 1930 to 1965, retail sales had represented around 59 per cent of total personal income. So, Fulmer has utilized four indices to measure economic development potentials for Kentucky during the period from 1963 to 1975 and has demonstrated how these variables--population growth, employment, income, and retail sales--are interdependent.⁷

Professor Fulmer has identified other short-run indices of economic change which are related to per capita personal income. Statistics on the rate of population growth, the employment ratio, and the volume of retail sales will be reviewed in the ensuing analysis as short-run measures of economic change.

In July of 1966, staff members of the Bureau of Business Research at the University of Kentucky completed, under the direction of Professor Fulmer, a massive data book entitled Development Potentials for Kentucky Counties with Related Statistics. Much of the data reported in the

ensuing analysis has come from this compendium of development potentials for the state of Kentucky and its counties. Statistics on population rate of growth, the employment ratio, the urban ratio, annual earnings of production workers in manufacturing, value added per manufacturing worker, per cent employed in agriculture and manufacturing, median years of schooling, distribution of total personal income among various sources, and many other statistics reflect economic changes in the counties and the state. All of these kinds of data are maintained by various government agencies and departments at the national and state levels and are contained in census reports. In the evaluation of very recent economic changes in Knox and contiguous counties, it was necessary to depend on sources other than census reports. But the indices of short-run economic change employed in this report are very much standard tools of analysis for development-oriented economists. These indices reflect economic changes for the county as a whole, however, so it is necessary to depend on survey data gathered from interviews with the rural populace of Knox county for an analysis of the economic changes taking place among the hard-core unemployed and impoverished.

CHAPTER II

RESEARCH DESIGN AND ANALYTICAL TOOLS

When the research design for the entire OEO-CAP Evaluation Project was approved in 1965, the investigators for the economic phases of the project were delegated the responsibility of assessing the impact of the community development approach (as it was embodied in the community centers) on economic progress or decline in Knox county. Apparently no research design aimed at making these assessments was ever implemented. Some survey data had been collected during two time periods when this investigator joined the project in June of 1968. Left with no particular design, this investigator formulated his own plans and proceeded accordingly.

The first task involved defining regional economic development and the isolation of particular short-run indices that reflected economic growth and development. The particular economic trends during the years prior to the implementation of community action programs had to be analyzed for the pilot county, Knox, and compared with similar trends in contiguous counties and the state. Next, these same economic trends, when data were available, had to be reviewed for the years in which the community action programs had been in operation and similar comparisons made to other counties and the state.

At this point one could ascertain whether growth had really taken place during the years in which the centers were in operation. But to what extent could any growth or decline be attributed to participation

in the community action programs? In 1964 Congress passed the Economic Opportunity Act and allowed for an appropriation of \$947.5 million for fiscal 1965 which got the Office of Economic Opportunity functioning. Title I of this act allowed for the appropriation of \$412.5 million to defray the costs of implementing youth programs, such as Job Corp, a Work Training Program, and a Work Study Program. Title II allowed for an appropriation of \$340 million which was to cover the costs of implementing community action programs in poverty areas.⁸ The point is whether the participation of the poor in Knox County Community Action Programs has helped them in any way economically. Is participation associated with economic changes in Knox county? The impact of the OEO programs as related to economic change was operationally defined as the score on a participation index by each individual interviewed in the communities of Middle Fork, Key Jay, and Messer. More details on the variables used in the statistical analysis of this question will be given in the interpretation part of the report.

The statistical analysis of the survey data collected in rural areas of Knox County comprise ex post facto research. Kerlinger defines ex post facto research as "that research in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables. He then studies the independent variables in retrospect for their possible relations to and effects on, the dependent variable or variables."⁹

Since this researcher joined the economic phase of this project in June of 1968, he had no opportunity to devise his own scales for subsequent use in an experimental study. Consequently, all of the data on

which inferences are to be based were collected by someone else. Ex post facto research is very common among economists who conduct time series analysis and studies of the kind reported in this project. But the lack of participation on the part of this investigator in the original design of this part of the project (economic phase) greatly circumscribes the possible manipulation of certain key economic variables that might have rendered some illumination in regard to the economic changes taking place among the rural respondents to the survey questionnaires. The economic variables included in the Time-One and Time-Two questionnaires were as follows:¹⁰

1. Do you own a house, pay rent, or have rent-free housing?
2. If you pay rent, how much do you pay in rent each month?
3. Do you have running water?
4. Do you have an inside toilet or outside privy or nothing at all?
5. Do you have a telephone?
6. Do you have electricity?
7. What is your level of employment?
8. What was your total family income last year?

Four of these eight variables were dichotomous variables which were not conducive to statistical analysis in some cases. Each of the questions was asked of heads of households and homemakers in three areas served by community centers--Kay Jay, Middle Fork, and Messer. A random sampling procedure within these communities was followed, and the question of significant differences was left to this investigator.¹¹

Statistical tests to be explained in the methodology part of this report were used as a means of interpreting the differences in Time-One and Time-Two

responses to the eight economic questions. Since the procedure for obtaining respondents was a random one and the sample size was reasonably large, the results of the t-tests can be trusted, and inferences with regard to the variables can be made for the communities sampled.

The final task in this report is to attempt an explanation of the reasons why the rural persons interviewed in Knox county experienced the economic progress or decline indicated by the answers to the economic questions. The techniques called multiple regression analysis and partial correlation analysis were employed to render probable association between economic progress and social change. Much of the literature on economic development emphasizes the need for social and political change before or along with economic progress. The job-seeker finds employment only if he knows where it exists; the conscientious breadwinner can only make his money work for him when he is informed about the stock broker, the banker, the president of the savings and loan association, and the availability of government bonds etc. In other words, you expect the man who has demonstrated strides forward economically to be informed about those institutions in society that affect his living standards--the government agencies, political parties, savings institutions, the school system, the health authorities, life insurance agents, lawyers, etc. One's attitudes toward self-sufficiency, toward making money, toward migration to job market areas, toward welfare payments, etc., must change before he begins to show any discernible increase in his economic well-being. And attitudes toward economic concepts, as attitudes and cognitions toward any objects, concepts, or ideas, are generally formulated in a social context--cohesive membership in a religious, political, or civic group usually leads to the adoption of

the majority of the memberships' opinions and ideas toward concepts and objects.¹² If the member of one of these groups greatly values his membership, he will often turn to other members for opinions on certain ideas and objects. The group becomes a source of opinion leadership for the individual members. Of course, primary groups like the family play a profound role in the opinion formation process.¹³ Take, for example, the member of a clannish third-generation family in the Appalachian region of Kentucky. He is a young man eager to migrate to a huge job-market area like Detroit or Columbus, but his parents insist he should stay at home, work in the coal mines and help in their support. Change is not necessarily a good thing and it involves a lot of sacrifice, his parents ostensibly are thinking. So the young lad stays at home and works at a job for which he has no great interest or liking.

It is also common, it seems, for the Appalachian family to perceive the migration of their son for his own economic betterment as antithetical to their culture. As Albert Hirschman points out in his book, The Strategy of Economic Development, in some communal, cooperative, cohesive types of society a "group-focused image of change" exists. As Hirschman explains:

"The individual members of such a society usually have a definite place and role assigned to them, and the possibility of change and improvement in their economic fortunes hardly enters their horizon. The total product having long been stationary, individual improvement could only take place at the expense of their members and of the cohesiveness of the group. Exceptional performance is therefore discouraged and penalized by a variety of social mechanisms of which witchcraft is the best known."¹⁴

Hirschman points out that in the event of possible economic progress the individuals of such a society will perceive this possibility as applying to the society as a whole, each member making equal sacrifices

and enjoying the same rewards. So it's only in the context of the group or society, in toto, that the concept of economic progress can have any meaning. If each individual aspires to better himself in spite of the desires and efforts of other members, then he ostensibly manifests an "ego-focused image of change." Hirschman contends that a group-focused image of change is incompatible with large-scale development, albeit it has not inhibited the success of small-scale community development projects and technical assistance activities in developing countries and regions.¹⁵

But the important point to be made is the fact that social change does indeed often precede or parallel economic change. Development economists must assess the amount of social change and relate this change to any economic progress that might have been made during a specific time period. This investigator, in an effort to relate social and economic change, devised an economic index based on the survey questions and used it as the dependent variable in a multiple regression problem in which the independent variables were particular indices of social change. The value of the technique, coupled with partial correlation, lies in its ability to explain the amount of variation in the dependent variable that can be attributed to the employed independent variables; partial correlation analysis will reveal the net or individual effect of each variable on the independent variable.¹⁶ The techniques help answer the question of what is the relation between economic progress and social change. And accounting for the economic change of these respondents is the main goal of this project.

CHAPTER III

ECONOMIC GROWTH TRENDS FOR KNOX AND SURROUNDING COUNTIES DURING THE 1950'S AND EARLY 1960'S

Knox County, Kentucky, is an Appalachian county with a population of approximately 25,000 and is located in the Southeastern part of the state. The county suffered from a decennial decrease in population of 16.90 per cent during the decade 1950-60 as compared to a decrease of only 2.0 per cent for 1940-50. In April of 1940 the population of Knox County was about 31,000 and in April of 1960 it had dropped to 25,258. The paramount reason for the huge decrease centers around the fact that few job opportunities existed for the young members of the labor force who desired to make a respectable living and were willing to move. In 1950, 14.9 per cent of the Knox County population was urban; in 1960, 18.2 per cent. While 46.3 per cent of the county's population in 1950 was classified as rural farm; in 1960, only 14.9 per cent was so classified. In 1950, 13,467 residents in Knox County were under 18 and 1,976 were over 65. From 1950 to 1960 the number of persons in the category 18 years or younger decreased by 20.6 per cent, while the increase of persons in the 65 or over category increase by 24.1 per cent. So in 1960, approximately 52 per cent of the residents in Knox County were either under 18 or over 65. In 1950 there were 807 births and only 234 deaths in Knox County and in 1960 the margin had decreased to 316; but vital statistics for 1962 indicate that there were 604 births and 269 deaths for a natural increase in population

of 335. From 1950-60 the annual migration loss of population exceeded the natural increase in Knox County by 209 per cent.¹⁷

Of course, these population figures are reflected in the key economic indices of economic change and growth. From 1950-60 the labor force in Knox County suffered from a loss of 2,309 persons from 7,638 to 5,329. From 1950-60 the number of jobs held by males in the county decreased by 46.2 per cent. Of those employed in 1950, 30.8 per cent were engaged in agricultural work and only 7.4 per cent worked in manufacturing industries. In 1960, however, only 9.3 per cent of the employed persons in the county were involved in agriculture and 13.2 per cent were working in manufacturing industries. Despite the fact that the number of manufacturing employees had increased for the county in the decade from 1950-60, the ratio of employed to total population had decreased from 24.3 per cent in 1950 to 19.1 per cent in 1960, reflecting an increase in the number of persons over 65 and the out-migration of 16.9 per cent of the 1950 population.¹⁸

Population Trends in Knox County and
Other Counties in the South
Cumberland Valley
Development Area,
1940-1960

Since 1940 the population of Knox County has been considerably less than that of Bell, Harlan, and Whitley counties, which comprise the South Cumberland Development Area. From 1940 to 1950 Bell was the only county in the area to enjoy a population increase (8.7 per cent), but during the same decade Harlan suffered a decline of 4.7 per cent, Whitley a 3.8 per cent decline, and Knox only 2.0 per cent. In the ensuing decade of the 1950's, the trend reversed for Bell as it suffered a decline of 25.8 per cent, exceeded only by Harlan's decline of 28.8 per cent. Whitley's population

decline during the period from 1950-1960 dropped to 19.2 per cent and Knox's decline reached a loss of 16.9 per cent of the 1950 population.¹⁹ In 1965 the population of the area was estimated to be around 131,000, with Harlan being the most populated county (48,400) followed by Bell (36,000), Knox (24,300), Whitley (22,900).²⁰

In 1950 the population of the area was 181,702, and the median age of the residents in the area was 21.4 years as compared to a population in 1960 of 137,516 and a median age of 23.9 years. There was a huge decrease in the number of persons aged 1-34 and a considerable increase of persons 60 or older. The greatest decline came in the age group of 25-29 and the group 20-24 with the decade declines being 52 per cent and 44.4 per cent, respectively. In Knox County, the median age in 1950 was 21.5 years (population = 30,409) and in 1960, 23.3 years (population = 25,258). For Knox the greatest decline came in the age groups 25-29 and 30-34, with percentage changes being 43.7 per cent and 40.1 per cent. The percentage increase in persons 60 or over for Knox was not as pronounced as the increases for South Cumberland Valley as a whole, but both Knox and the entire area suffered from a population decline of 16.9 per cent and 24.3 per cent, respectively.²¹ In terms of population trends, Knox County ranked 58 among 120 Kentucky counties with an index figure of 194 in 1961. No other county in the area had as small an index; with respect to this population stability index, the highest score achieved was 299 (by Adair and Carlisle counties).²²

The index is derived by summing the per cent of dwelling units built since 1950 in the county, and the per cent of the population who lived in a different county or abroad in 1955, with the reverse rank of per

cent of dwelling units owner occupied in 1960. The larger the number the greater is the population stability.²³ With respect to the population change in the county and area due to in- and out-migration during the decade from 1950-60, Knox had an index of 67.9 and ranked 100 among 120 Kentucky counties. Only Bell and Harlan ranked lower among the counties in this area, their ranks being 112 and 119, respectively. The index base is 100, so any figure less than 100 indicates a net out-migration.²⁴ Figures on the percentage of population under 15 and over 65 in 1960 show Knox ranked 29 with a percentage of 44.9; no other county in the area had a higher percentage than Knox in 1960.²⁵

Of the counties in the area, only Harlan experienced a decrease in its urban population during the period from 1950-60. Harlan had 28.4 per cent of its population urban in 1950, but in 1960 the rural farm population accounted for only 24 per cent of the total residents in the county. Bell's urban population, as a per cent of the total population, increased from 38.6 per cent in 1950 to 44.7 per cent in 1960. The total population of Bell decreased by 12,000 during the decade, but the rural farm population dropped from 3,132 in 1950 to 989 in 1960. Knox registered a 4.0 per cent increase in its urban to total population ratio during the same decennial period, from 14.9 per cent in 1950 to 18.2 per cent in 1960. Whitley's urban population actually decreased for the period, but as a percentage of total population there was an increase from 29.7 per cent to 35.7 per cent.²⁶ In relation to other Kentucky counties in 1960, Bell ranked eighteenth in per cent of total population urban, Whitley twenty-ninth, Harlan forty-eighth, and Knox fifty-sixth out of a possible low rank of 90.²⁷

The economic factors that helped precipitate the mass exodus of persons from the Cumberland Plateau during the post-war years are

tragically delineated by Harry Caudill in Night Comes to The Cumberlands: A Biography of a Depressed Area. The plight of the area is embodied in the plight of the small coal miners during the post-war years. Perhaps the most significant reason for the economic maladies that still beset the area is to be found in his chapter entitled "The Big Bosses." The lack of abundant investment in human resources during the first coal boom from 1912-1927 destined the region to only short-run economic success at best. Caudill explains:

Thus, in the fateful years between 1912 and 1927 which so strongly influenced the whole future of the coalfield, that which it needed most was aborted and lost. Its foremost need was for a comprehensive and effective system of public education, to gather up this rich human material from a dozen states and many counties and convert it into a wise and virtuous citizenry. But this foremost requirement was denied it. The schools were robbed of adequate financing. The best teachers, those with the richest gifts of inspiration and experience, drifted away, and a vicious system of intellectual inbreeding was established which has never been broken.²⁸

The new lease on life afforded the people of the region during World War II expired around 1948. Coal operators, lacking railroads to haul away the coal, had to truck their product to railheads in adjoining counties. Speaking with reference to Leslie County, Caudill explains that exorbitant transport costs were absorbed through a reduction in mining wages. But the mining workers refused to join the United Mine Workers who solicited their membership. Caudill says that after midsummer, 1948, truck mining fell into decline. Marginal firms in the coal industry closed shop. Those operators who resolved to stay in business gave way to mechanization. The "middleman" was eliminated when the costly cutting machine was employed to rid the coal strata of troublesome rock. Despite the post-war decline in coal prices and rising costs, operators optimistically believed "good runs" would resume. Most operators refused to mechanize their

operations and chose to utilize the usual slate-picker gangs; the end result was exit from the industry.²⁹

"The failing operator found a new nemesis dogging his trail," explains Caudill.³⁰ The Internal Revenue Service had expanded its crop of tax collectors, and many were assigned to the task of investigating the operators who had got rich off the mineral wealth of the Cumberland Plateau. When cases of income tax evasion were discovered, the federal government was given a mortgage on the property of the delinquent taxpayer. Many operators found they owed more than all their possessions would bring if offered for sale, says Caudill. The author, in his chapter "Darkening Horizons," explains:

The financial ruin of this multitude of small businessmen, between 1948 and 1954, left thousands of miners without employment . . . By automobile and trainloads they moved away into the cities and farms of Ohio, Indiana, and Michigan. There began a sustained flight of humanity which, in the decade before 1960, curtailed the population of the plateau by 25 per cent. The exodus of these jobless miners marked the beginning of one of the most drastic population shifts in the nation's history.³¹

The effect of this huge migration, which has yet to subside, is reflected in other statistics of the decade of the 1950's that are germane to the economic development of the South Cumberland Valley Area.

Employment Trends in the South Cumberland Valley Area

In 1960 Bell County had 3,945 fewer members of the labor force than it had in 1950.³² Among economists, the labor force is defined as the total number of workers willing to work at prevailing wages and, hence, this definition includes both employed and unemployed (but willing to work) persons. But census figures are reported here and the census definition includes

in the labor force all persons over 14 years old not in institutions who are gainfully employed or temporarily out of work (more than 15 hours per week without pay for a family, farm, or business).³³ Harlan had 7,027 fewer people in the labor force in 1960, Knox had a decennial decrease of 2,309 in its labor force, and Whitley, a decline of 2,801.³⁴ The labor force of the state increased by 21,000 from 1950-60.

During the decade of the 1950's, manpower in the area, in the strict sense of that term, declined substantially. The private and public sectors turned to the female for their employment needs. In Bell County there were 43 per cent fewer jobs held by males, in Knox 46.2 per cent fewer male-held jobs, and in Whitley the employed male labor force declined by 40.4 per cent of the 1950 figure of 7,158.³⁵ So in 1960, 17.1 per cent of the Bell County labor force was female (for a rank of 92 among 120 Kentucky counties), 17.2 per cent of the Harlan labor force was female (for a rank of 90), 16.8 per cent of Knox County's labor force was female (94), and 17.8 per cent of Whitley's labor force was female (88).³⁶

With the exception of Knox and Whitley Counties during 1950, the main source of industrial employment for the period 1950-60 in the South Cumberland Valley area was wholesale and retail businesses. Nineteen-fifty statistics show that 30.8 per cent of the employed persons in Knox County were engaged in agricultural employment. But by 1960 only 9.3 per cent of the total employed Knox County population was engaged in agricultural work. Whitley County had more persons employed in agriculture than did Knox County, but as a percentage of total employed, only 28.8 per cent were in agriculture and 8.3 per cent in manufacturing. By 1960 Whitley County's agricultural employment figures had declined to 739 jobs or

12.7 per cent of total employed involved in agriculture and 8.8 per cent in manufacturing. In Bell County, the main source of industrial employment during the decade of the 1950's was wholesale and retail businesses followed by manufacturing businesses.³⁷ In Harlan County, the main source of industrial employment was the mining and quarrying industry followed by wholesale and retail businesses.³⁸ The largest employers of females were federal, state, and local government agencies or departments that render personal and educational service to the citizenry; retail businesses were the second largest female employers.³⁹ In 1950 only 5.6 per cent of the total employed population of Bell County was engaged in agricultural employment and only 9.9 per cent in manufacturing. For Harlan the percentages were even smaller--3.3 per cent employed in agriculture and 4.3 per cent employed in manufacturing.

By 1960 Bell County's agricultural employment had decreased to 21.1 per cent of the total employed population, and manufacturing businesses had absorbed 14.7 per cent of the total employed market. Comparable figures for Harlan were 1.0 per cent and 5.4 per cent, respectively.⁴⁰ In 1950, 25.7 per cent of the state's employed population were agriculture workers and 15.8 per cent were manufacturing employees. By 1960 agriculture employment accounted for only 14.2 per cent of the total employed population and 21.2 per cent of all employed workers were occupied in manufacturing businesses. The employment ratio for each of the counties in the area decreased during the decennial period. In 1950 the employment ratio (ratio of total employed to total population) in Bell County was 24.1 per cent and by 1960 the percentage had dropped to 20.7 per cent. Harlan's employment ratio dropped from a 1950 mark of 25.9 per cent to 21.5 per cent

in 1960, and Knox's employment ratio dropped from a 1950 level of 24.3 per cent of the total population to 19.1 per cent in 1960. Whitley had 27.6 per cent of its population employed in 1950, and by 1960 the percentage had dropped to 22.6 per cent. The employment ratio for the state as a whole also decreased from 34.3 per cent in 1950 to 32 per cent in 1960.⁴¹

The distribution of employees within the various occupational levels as of 1960 was very homogeneous across the counties in the South Cumberland Valley Area. The table, page 23, shows that the majority of those employed from the area are "unskilled," a label which the census bureau uses to identify the level of those who are "operatives and kindred workers"; "private household workers"; farm laborers except unpaid and farm foremen"; "service workers except private household workers"; and "laborers except farm and mine laborers."⁴²

Trends in Manufacturing: Wages of Production Workers,
New Capital Expenditures, and Value Added
Per Worker, 1958-1963

From 1958 to 1963 the yearly and hourly earnings of production workers in the South Cumberland Area did edge forward, but the percentage increase was somewhat less than remarkable. In 1958 the average production worker in Bell County was making \$1.44 an hour or \$2,937 a year. By 1963 his hourly wages had increased by ten cents and his annual salary had finally reached the \$3,195 mark. Not far behind Bell County in 1958 was Harlan County whose production workers were receiving \$1.43 an hour or \$2,727 a year. By 1963 the hourly and annual wage of the Harlan Countian had surpassed the wage of the production worker in Bell--their hourly wage had soared to \$1.62, on the average. In 1958 there was only a two-cent difference in the average hourly wages

The employment distribution ran as follows in 1960:

TABLE 1
DISTRIBUTION OF EMPLOYEES IN THE SOUTH CUMBERLAND VALLEY AREA
BY OCCUPATIONAL LEVEL, 1960

Occupational Group	Bell	Harlan	Knox	Whitley
Unskilled	43.1% (31)*	50.1% (7)	45.4% (20)	41.0% (46)
Farmers and Farm Managers	1.1% (113)	.7% (116)	5.9% (100)	10.1% (91)
White Collar**	38.2% (7)	33.3% (20)	31.0% (26)	33.1% (22)
Craftsmen, Fore- men, Kindred Workers	12.6% (34)	13.3% (25)	12.3% (41)	12.2% (44)
Clerical, Sales, and Kindred Workers	16.3% (20)	14.9% (30)	14.7% (36)	14.8% (33)
Managers and Pro- fessional Workers	21.9% (3)	18.4% (11)	17.0% (20)	18.3% (12)

*Within parentheses are the ranks of 120 Kentucky counties.

**White Collar encompasses "professional, technical and kindred workers, managers, officials, and proprietors, except farm, clerical, kindred, and sales workers."

Source: Willis A. Sutton and Jerry Russell, The Social Dimensions of Kentucky Counties, Bureau of Community Services, University of Kentucky, Kentucky Community Series No. 29 (September, 1964), pp. 44-55.

of production workers in Knox and Whitley Counties, the \$1.15 and \$1.13 average hourly wages being considerably less than comparable wages in Bell and Harlan Counties. But by 1963 the number of production workers had nearly tripled in Knox County and wages had increased to \$1.49 for production workers or average yearly earnings of \$2,959.⁴³ But wages in these counties lagged behind the average wages paid to manufacturing production workers in all Kentucky counties which averaged \$2.03 per hour in 1958 and \$2.35 an hour in 1963. In 1963 total fourth-quarter wages paid by manufacturing businesses exceeded total wages paid by any other industry in South Cumberland Valley counties except the mining and quarrying industry in Harlan County which paid fourth-quarter wages totalling \$2,935,925.00.⁴⁴

In 1958 new capital expenditures in Bell County amounted to \$117,000 or \$180 per worker, and in 1963 new capital expenditures amounted to less than \$500,000. Harlan enjoyed only \$266,000 worth of new manufacturing investment but it amounted to \$597.80 per worker. In 1963 less than \$500,000 in new capital expenditures by manufacturers were invested in Harlan. New capital expenditures by manufacturers in Knox and Whitley were less than \$200,000 in 1958 and less than \$500,000 in 1963. These statistics compare with a state average per production worker expenditure of capital by manufacturer of \$689 in 1958 and \$1,244 in 1963.⁴⁵ Average value added per worker in manufacturing increased from 1958 to 1963 in all four counties. Value added is the difference between the purchase price of raw materials or finished parts and the sale price of the final product.⁴⁶ The greatest increase in value added per worker came in Harlan County where, despite an increase

of only twenty production workers, value added per worker increased from \$5,474 in 1958 to \$8,843 in 1963. Average value added per worker in Bell County increased from \$7,075 and \$7,212, in Knox County from \$4,859 to \$5,707, and in Whitley County from \$3,639 in 1958 to \$4,873 in 1963. Counties in this area still lag far behind the state average as illustrated by the average-value-per-worker figure of \$11,278 in 1958 and \$13,516 in 1963 (a percentage change of 20 per cent).⁴⁷

Manufacturing statistics illustrate that the South Cumberland Valley Area is not composed of businesses of large plant size. The scale of operation is relatively small compared to that of manufacturing concerns in the more urbanized sections of the state. Hourly earnings for production workers have lagged behind the state average, and value added per worker trails the state average considerably.

Trends in Agriculture for South
Cumberland Valley Counties,
1954-1964

Agriculture statistics, generally, indicate that there was an increase in value of farm products and farm receipts from 1954 to 1959 and a general increase in product value and farm receipts from 1959 to 1964.

From 1954-59, value of farm products sold in Harlan County increased by 22.6 per cent, in Knox County by 13.9 per cent, and in Whitley County total value of farm products increased by 67.7 per cent. Only Bell County farmers experienced lower prices for their farm products during this period, and the decline amounted to only 1.3 per cent of the 1954 dollar volume of \$154,000. But by 1964 Bell farmers had suffered a decline of \$20,000 in total value of products sold, or a decrease

of 52.6 per cent of the 1959 volume of \$152,000. Most farmers in the area suffered from a decrease in value of products sold. Harlan farmers got only \$99,000 for their products in 1964 which amounted to per-farm receipts of only \$563. But this amount exceeded per-farm receipts in 1944 and 1959, despite the fact that total farm receipts for the county as a whole decreased by 50.7 per cent of the 1959 volume of \$201,000. Knox farmers had been much better off in 1954, 1959, and 1964 than any of the other counties of the South Cumberland Valley. Per-farm receipts in 1954 were \$951 compared with comparable receipts per farm in Harlan of \$164, in Bell of \$154, and in Whitley of \$681. By 1959 per-farm receipts had increased by 102 per cent in Knox, 236 per cent in Harlan, 207 per cent in Bell, and 143 per cent in Whitley. In 1964 per-farm receipts increased only 23.3 per cent over the 1959 average in Knox County; in Harlan the increase was only 1.1 per cent over the 1959 average; and comparable figures in Bell and Whitley were 3.1 per cent and 13.9 per cent, respectively. For the state as a whole, per-farm revenues from products sold averaged \$2,195 in 1954, \$3,431 in 1959 (a 56 per cent increase) and \$4,431 in 1964, a 30 per cent increase over the 1959 average.⁴⁸

In 1959, of 299 farmers in Bell County, 153 or 51.2 per cent worked off the farm. In Harlan 54.6 per cent of the farmers worked off the farm (194). Knox County had nearly as many farmers employed off the farm as Bell and Harlan combined had living in the two counties. Whitley had about one hundred more farmers in 1959 than did Knox, and 50.6 per cent of them worked off the farm. Forty-three per cent of the farmers in Kentucky did work off the farm in 1959, indicating that revenues accruing from farming endeavors alone were not enough. In 1964 the number of

farmers in Bell had decreased to 155 and 47.1 per cent were working off the farm. Harlan's number of farmers had dropped to 175 and only 38.8 per cent were working off the farm. Average off-farm income for farmers in Bell amounted to \$3,019 in 1964, while average off-farm revenue for farmers in Harlan was \$2,257. The farm population in Knox had dropped to 968 farmers in 1964 with 45.1 per cent of them working off the farm and accruing average revenues of \$1,921. Whitley's farmers were less in number by 1964 (870) and 49.8 per cent of these farmers were averaging off-farm revenues of \$2,061. In 1964, 43.6 per cent of the 133,000 farmers in Kentucky were working off the farm and accruing revenues averaging \$2,481 in 1964.⁴⁹

The value of livestock, and livestock products, and the number of bushels of corn sold in 1964 declined by 39.9 per cent and 6.0 per cent of the 1959 volume, respectively, for the South Cumberland Valley Area as a whole. The value of livestock and livestock products sold in Knox County declined to \$344,797 in 1964, or 38.7 per cent below the 1959 volume of \$562,568. However, in 1964 Knox County was the only county in the area to realize an increase in bushels of corn sold, the farmers' volume of 39,427 being 13.5 per cent greater than the volume sold in 1959. With respect to pounds of tobacco produced, the four counties total output exceeded the 1959 volume of 1,006,482 pounds by 18.7 per cent. Harlan County was the only one in the area to register a decrease in tobacco production in 1964--farmers produced only 1,473 pounds for a decline of 55.2 per cent of its 1959 volume of 3,290.⁵⁰

Farm expenditures for feed, livestock and poultry, machine fuel and oil, machine hire, custom and contract work, and hired labor

decreased for the area as a whole from 1959 to 1964. Only expenditures for seeds and plants increased from 1959 to 1964. (Increase amounted to 13.9 per cent of the 1959 expenditures of \$61,788.)⁵¹

The size of farms within the area increased in 1964 to 87.7 acres or 17.7 per cent of the total acreage within the county; this increase of acre size per farm represented a 15.5 per cent increase over the average size in 1959. But the number of farms and the amount of farm acreage as a per-cent-of-total acreage in the county decreased by 33.4 per cent and 23.0 per cent of the 1959 figures.

Trends in the Timber and Mining Industries
in the South Cumberland Valley Area,
1958, 1960, 1963, 1964, and 1965

In 1963 the South Cumberland Valley area had 878,900 acres of forest of which 80.5 per cent was made up of commercial forests. In 1964 \$47,148 worth of standing timber was sold from farms in the area but this amounted to 12.5 per cent less than the \$53,891 sold in 1959. Sales of sawlogs and veneer logs for the area as a whole decreased by 81.4 per cent of the 1959 total of 388,000 board feet. Sales of standing timber in Knox County for 1964 exceeded 1959 volume by 1.8 per cent and sales of sawlogs and veneer logs by Knox County farmers increased to 41,000 board feet in 1964, or 272.7 per cent of the 1959 total of 11,000 board feet. Pulpwood sales were negligible in 1959 and 1964 for all counties except Whitley where sales from farms were 519 cords and 682 cords, respectively--an increase in 1964 of 31.4 per cent.⁵³

The mining industry employed about 20 per cent of the total employed population in 1960: 6,160 in persons in Bell, Harlan, Knox, and Whitley Counties.⁵⁴ By 1965 covered persons employed in the industry numbered

3,001.⁵⁵ Statistics for 1958 indicate that industry payrolls of 61 establishments in Bell County reached \$2,802,000; in Harlan County 113 establishments reported payrolls totaling \$20,012,000; and 21 establishments in Knox County reported payrolls totaling \$391,000. Coal-mining employment in the area amounted to 4,471 in 1961 and decreased to 3,871 in 1963. Despite a 15.1 per cent decline, Harlan County employed three times more persons than Bell in 1963, whose establishments ranked second in the area with 785 employees. Establishments in Knox County employed only 61 persons in 1963, a 62.6 per cent decrease from the 163 employed in 1961.⁵⁶

Statistics indicate that during the first half of the 1960's, coal production for the area increased somewhat while petroleum production declined sharply. From 1960 to 1964, coal production increased 4.9 per cent over the 1960 volume of 8,495,455 short tons. Production increased for all counties except Harlan, which registered a decline of 9.5 per cent from its 1960 volume of 6,235,601. Knox County showed an increase of 9.9 per cent and Bell increased its coal production by 38.4 per cent to 2,067,620 short tons.⁵⁷

Whitley County accounted for over 70 per cent of the area's petroleum production in 1960 and approximately 90 per cent of the area's output in 1964, producing around 18,500 barrels in both years. Harlan County accounted for none of the counties' petroleum production in 1964, while Bell and Knox Counties accounted for only 1,878 of the 20,340 barrels produced in that year. None of the counties in the area produced any crushed limestone during these years, except possibly establishments in Harlan County which elected not to disclose production figures. The value of

coal and petroleum production also declined from 1960 to 1964. Value of coal production amounted to \$38,406,571 in 1964, or a decrease of 11.7 per cent of the 1960 figure of \$43,475,392. The area decline can be attributed to the loss of establishments in Harlan whose production of coal was valued at \$28,439,463 in 1964 or 13.7 per cent less than the 1960 figure. Establishments in Bell, Knox, and Whitley Counties enjoyed gains of 20.8 per cent, 11.9 per cent, and 8.1 per cent over the 1960 totals.⁵⁸

Petroleum receipts in 1964 were 19.9 per cent less than the 1960 volume of \$74,133. Whitley County producers were the only members of the industry whose aggregate production increased over the 1960 volume; production value increased by 2.3 per cent of the \$52,709 in 1960. So the mineral industries in this area have suffered declines overall in the 1960's.⁵⁹

Trends in Personal Income and Some Per
Capita Personal Income Determinants,
1950-1963

In the first part of this report reference was made to the importance of per capita measures of economic development as indices of change and growth within developing regions and countries. The study of economic development potentials in Kentucky by Dr. Fulmer was alluded to as an example of how population growth, employment ratios, retail sales, and personal income work together as variables or factors affecting the economic progress of developing regions. Frequently, a look at per capita income and its determinants afford a broad but accurate picture of the reasons behind economic progress or decline.

Employment figures and rates of population growth or decline have already been reviewed. Now we must review the data on personal income

and retail sales and look at some empirically tested determinants of personal income.

In 1949, 76.6 per cent of the families in the South Cumberland Valley area had incomes of less than \$3,000, which has come to be known as the line of demarcation between those living at a subsistence level and those who are poverty stricken. Twenty-seven per cent of the families in the four counties had incomes of less than \$1,000. But income figures for 1959 showed that, though still a majority, 58.1 per cent of the 31,867 families in the area were living on incomes of less than \$3,000, the number of families living on less than \$1,000 decreased to 7,030 or 22.1 per cent of the families in the area. The median family income in 1949 was \$1,805, and in 1959 it was \$2,452. (KADO, p. 42) The 1959 figure of \$2,452 for the area compares with the state median of \$4,051 (a 98.9 per cent increase over 1949) and the national median of \$5,660. In 1960, only 20 per cent of the nation's families made money incomes of less than \$3,000; 31 per cent of southern families had money incomes of less than \$3,000⁶⁰ (The U.S. Book of Facts, Statistics, and Information, Essandess Special Edition, 1967, pp. 334-335). So family money incomes in the South Cumberland Valley area have lagged far behind the state and national averages.

Per capita income figures for 1958 and 1963 revealed that the area's average had increased by 26.2 per cent over the 1957 average of \$998, while the state average increased by only 24.1 per cent over the 1958 per capita income of \$1,450.⁶¹ So, in 1963, the area's average per capita income was \$1,259 compared with the state's average of \$1,799. Per capita income for the nation averaged \$2,448 in 1963.⁶²

Next to Whitley County, whose residents' per capita income increased by 68 per cent to \$1,129 in 1963, Knox County ranked second in percentage increase but last in average income at \$707. Citizens of Knox County averaged only \$463 per person in 1958, and Whitley County residents averaged \$672 that year. Harlan's average per capita income suffered a 20.5 per cent decline from the 1958 average of \$1,627.⁶³

What percentage of the total personal income in 1958 and 1963 was attributed to wages and salaries, transfer payments, property income, and proprietor's income? Wages and salaries accounted for less of the total in 1963 than in 1958--58.7 per cent and 63.4 per cent. For the state, total wages and salaries accounted for 63.7 per cent in 1958 and 64.4 per cent in 1963. More alarming is the fact that transfer payments (i.e., welfare, social security and annuity payments, nonproductive income) accounted for 21.7 per cent of the area's total income in 1963 as compared to 16.8 per cent in 1958. The state average from this source increased by 0.4 per cent to 9.6 per cent of the total personal income in 1963. Knox County residents depended more on transfer payments in 1963 than they did in 1958; 27.1 per cent of their total income came from various transfer payments as compared to 25.4 per cent in 1958. Transfer payments as a percentage of total income doubled in importance for Bell citizens--they represented 20.8 per cent of the total in 1963 as compared to 9.0 per cent in 1958. Property income, as a source, declined as a percentage of the total in 1963 for all counties but Harlan. Nonfarm proprietor's income increased as a percentage of the total for all counties, accounting for 11.2 per cent of the total in 1963. Farm proprietor's income, as a percentage of the total, decreased in importance in all counties and accounted for

2.7 per cent of the 1963 total. Transfer payments ranked second only to wages and salaries as a percentage of total personal income in 1958 and 1963, while, for the state as a whole, they ranked third to wages, salaries, and property income in these years.⁶⁴

These figures cast an ominous shadow over any per capita income increase for the area, because they have reflected, at least in these years, more dependence on government subsidies via transfer payments, than on productive sources of income. More alarming is the fact the Knox County, our pilot county in this report and the focus of the OEO-CAP evaluation project, has led the area with respect to this source in 1958, and in 1963 more than a fourth of total income was derived from transfer payments. The next part of this report will focus on gross statistics and survey data gathered during the years in which the community action programs have been in operation. Certainly a key question to which we have addressed ourselves is whether dependence on transfer payments as a source of income has increased relative to productive sources.

At this point some determinants of per capita personal income must be explicated and some generalizations made about the recent trends in the South Cumberland Valley area. Previous analysis has shown that the following factors influence state per capita income differentials: (a) ratio of labor force employed in agriculture, (b) percentage of population employed, (c) median years of schooling, (d) average annual earnings of production workers in manufacturing, and (e) ratio of population urban.⁶⁵ A recent report from the Bureau of Business Research at the University of Kentucky showed that the ratio of total personal income payments from wages and salaries affected positively the level of county per capita income while

the ratio of transfer payments was related negatively to county per capita income.⁶⁶ Statistics on these factors are available for the South Cumberland Valley area, and one might expect that these same factors affect per capita income differentials among counties as well as states. As we have mentioned earlier, agriculture employment had decreased in 1959 to less than six per cent of the total employed population in all of the counties in the area as compared to approximately 18 per cent in agriculture in 1949. In 1949, 25.7 per cent of the state's employed population was working in agriculture, and in 1959 the percentage was 14.2. But the percentage of workers in manufacturing from the South Cumberland Valley area in 1949 and 1959 lagged far behind the state distribution of 15.8 per cent in manufacturing in 1949 and 21.2 per cent in 1959.⁶⁷

In 1959 there were fewer people in the total population that were employed in all of the counties. Statistics for 1949 and 1959 have already been presented. Of the counties in the area, Knox registered the smallest percentage of total population employed in 1959 with only 19 per cent employed. State figures showed that 32 per cent of the population was employed in 1959 and 34.3 per cent in 1949.⁶⁸ These figures take on significance when compared to the national figure, the figure for the highest ranking state, and a state that borders Kentucky but is considerably more industrialized. In 1959, 36 per cent of the total population of the United States was employed, as compared to 30.8 per cent of Kentucky's population. Connecticut, which ranked the highest among all states in per capita income in 1965, had 39.9 per cent of its population employed in 1959, and Ohio, which borders Kentucky and ranks above the United States average

in per capita income, had 36.1 per cent of its population employed in 1959.⁶⁹ So, Kentucky is 14 per cent below the national average in a factor that affects per capita income positively. The authors also point out that with respect to percentage of labor force employed in agriculture, Kentucky, with 14.2 per cent in 1959, has approximately twice as much of a factor that reduces per capita income, when compared to the national percentage of 6.7 in 1959. Looking at our project county, Knox, in relation to the state for 1959, we find that Knox County's ratio of employed to total population is only 79 per cent that of Kentucky's, or Knox County lags behind the state 21 per cent in a factor found related positively to per capita income. With respect to percentage of labor force employed in manufacturing, Knox lags behind the state by 38 per cent in a factor related positively to per capita income, but with respect to agricultural employment as a percentage of total employment, Kentucky exceeds Knox County by 35 per cent in a factor related negatively to per capita income.⁷⁰

In 1950 the median years of schooling reported for residents of Bell County were 7.0, and 1960 statistics indicated that the median years of school completed were 8.1 for a percentage increase of 4.0. Comparable statistics for Harlan show that the median years schooling completed were 7.6 in 1950 and 8.0 in 1960. The figures for Knox County were the same as for Harlan, but Whitley County residents had a median figure of 8.0 years of school completed in 1950 and 8.3 years in 1960 for an increase of 3.3 per cent. In 1950 it was reported that only about 14 per cent of the residents of the area had completed high school or more schooling, and in 1960 figures indicated that about 18 per cent had completed high school

or more. These figures represent only the population that was 25 years or older when the census survey was conducted. Census figures for the state as a whole indicated that the median years of schooling for residents 25 years old or over were 8.4 in 1950 and 8.7 in 1960. But 22.3 per cent of the 25-and-over population of the state in 1950 had completed at least high school, and in 1960 reports showed that 27.6 per cent of this population had completed at least high school.⁷¹ So the counties in the South Cumberland Valley area have lagged behind the state with respect to this education variable which is related positively to per capita personal income.

Average annual earnings of production workers in manufacturing is another variable or factor related to income differentials in the various states. Figures for 1958 and 1963 have already been discussed, and they indicate that the counties in the area have lagged considerably behind the state figures of \$3,944 in 1958 and \$4,676 in 1963.⁷²

The ratio of population urban is the final factor discussed by Fulmer and Soule as a variable related to per capita income differentials among states. As previously pointed out, the urban population as a percentage of the total population increased for Bell, Knox, and Whitley Counties but decreased for Harlan. Nevertheless, all the counties lagged behind the state in 1950 and 1960 with respect to this statistic.⁷³

It should be noted that in their final analysis of per capita income determinants for the state of Kentucky, Fulmer and Soule identified the following as related positively factors:⁷⁴

1. Percentage of population employed
2. Median years of schooling
3. Percent employed in professional, technical, and skilled occupations

4. Average annual earnings of production workers in manufacturing
5. Proportion of total income as wages and salaries
6. Ratio of population urban

Statistics for factors 3 and 5 have also been touched upon in previous analyses, and they indicate the same bleak picture for the South Cumberland Valley area.

Trends in Wholesale and Retail Sales,
1958 and 1963

Wholesale trade statistics for the South Cumberland Development Area in 1958 and 1963 indicated that only wholesalers in Harlan failed to realize some increase in dollar volume of sales from 1958 to 1963. Sales for wholesalers in Harlan amounted to \$21,165,000 in 1963 or \$16,000 less than in 1958. There were fewer wholesalers in 1963 in all of the counties but sales increased for the county as a whole in Bell, Knox, and Whitley. Sales by county wholesalers in the four-county area amounted to \$43,166,000 in 1958 and \$62,796,000 in 1963. Annual payrolls by wholesalers in the area amounted to \$2,481,000 in 1958 and \$3,232,000 in 1963 (county wholesalers). Statistics on annual payrolls of urban wholesalers were withheld in 1958, but in 1963, 36 wholesalers reported payrolls of \$1,173,000. The number of paid employees during 1963 exceeded the number in 1958 in all but Harlan County. But despite a decline in paid employees in wholesale businesses, Harlan County wholesalers still employed about three times as many workers as any county in the area. Merchant wholesalers accounted for nearly 70 per cent of total sales reported in the four counties in 1958 and 1963; statistics on

the distribution of sales among wholesalers in the urban areas of the counties were not available.⁷⁵ (The urban establishments for which statistics are reported include establishments located in Middlesboro, Pineville, Cumberland, Barbourville, Corbin, and Williamsburg.)

Retail trade statistics for these years indicated that the number of retail establishments in the urban areas of the county increased to 793 or a 13.4 per cent increase over the number of establishments in 1958. For the counties as a whole the number of establishments increased by less than one per cent to 1,326 in 1963. Sales for urban establishments in the area increased by 16.9 per cent over the 1958 volume of \$66,598,000; sales by establishments outside the counties increased by 12.5 per cent to \$98,226,000 in 1963. Annual payrolls in 1963 for employees in the county establishments increased by 13.2 per cent to \$8,503,000 and employees in establishments located in the urban sections of the counties received payrolls which totaled \$7,449,000, or an increase of 17.2 per cent.⁷⁶ (The urban establishments for which statistics are reported include establishments located in Middlesboro, Pineville, Cumberland, Barbourville, Corbin, and Williamsburg.)

With respect to establishments in Knox County, sales statistics for a diversified number of retailers were favorable during 1958 and 1963. Although the number of retailers marketing lumber, building materials, hardware, and farm equipment decreased by 50 per cent to five retailers in 1963, sales increased by 14 per cent to \$992,000. The same story holds true for retailers of general merchandise whose numbers decreased by 50 per cent to 14 in 1963. Their sales increased by 16.3 per cent to \$986,000. The number of food-store retailers in 1963 exceeded the number in 1958 (91) by 7.7 per cent and dollar sales volume increased by

30.9 per cent to \$4,030,000. The number of automobile dealers in Knox County in 1963 was almost double the 1958 numbers of 17, but sales did not increase above the 1958 volume of \$1,605,000. There were fourteen gasoline stations in 1963, same as in 1958, but sales increased to \$995,000 for an increase of 49 per cent. Statistics on sales by apparel and accessory stores, drug stores, and nonstore retailers were withheld in 1958 and 1963. Retailers in the furniture and home-furnishings business suffered dollar sales declines of 21.8 per cent in 1963. Six retailers in this business realized total dollar sales of \$470,000. Residents and tourists in the area spent more money in food and drinking places in 1963 than they did in 1958. Sales for these retailers were up 6.7 per cent over the 1958 volume of \$448,000. When retail sales are expressed in per capita figures, Knox County rated below the state figure of \$857 with a per capita expenditure on retail products of \$350 in 1958. In 1963 Knox County residents averaged expenditures in retail businesses of \$439 while the state per capita retail sales figure stood at \$1,026.⁷⁷

With respect to the relationship between retail sales and per capita income, in 1962, citizens of the South Cumberland Valley area spent more of their income on the average on retail products than other citizens of the state. The per capita income of the area was \$1,120 in 1962 and retail sales in the area amounted to \$802 per capita. So the ratio of per capita sales to per capita income was 71.6%. The state average per capita income in 1962 amounted to \$1,799. And per capita retail sales for the state averaged \$1,026. The ratio of sales to income was only 57.0%.

CHAPTER IV

A BRIEF LOOK AT ECONOMIC CHANGES IN KNOX AND CONTIGUOUS COUNTIES IN THE LATE 1960'S

The population of Knox County in 1968 has been estimated to be 24,752.⁷⁹ This would represent a decrease of only 2.0 per cent of the 1960 population of 25,258 compared with the 1950-60 decennial decrease of 16.90 per cent. Harlan County's 1968 population has been estimated to be 43,070 which would represent a decrease of 15.7 per cent of the 1960 population of 51,107. Bell County's population, estimated at 34,267, has decreased only 3.0 per cent from the 1960 population of 35,336. And the population of Whitley County has been estimated to be 24,862, which represents a decrease of 3.7 per cent from the 1960 population of 25,815.⁸⁰

Again, the main reason for population declines in the South Cumberland Development Area is the lack of employment opportunities. There were 590 males and 144 females in Knox County who were unemployed in 1967; this amounted to 17.0 per cent of the work force. In Bell County 1,086 males and 181 females were out of work; the unemployment rate amounted to 16.1 per cent of the work force. In Harlan County the unemployment rate was 10.0 per cent in 1967 and in Whitley only 6.0 per cent of the work force was unemployed.⁸¹ These unemployment rates compare with rates in Knox County of 20.7 in 1966, 16.6 in 1965, and 14.0 in 1964; in Bell of 15.5 in 1966, 18.1 in 1965, and 16.2 in 1964; in Harlan of 12.7 in 1966; 16.0 in 1965; and 12.6 in 1964; and in Whitley of 5.9 in 1966 7.3 in 1965, and 10.1 in 1964.⁸²

Per capita income for residents of Knox County increased from the 1963 figure of \$703 to \$761 in 1965.⁸³ This increase represented a change of 51.9 per cent over the 1960 figure of \$501. Per capita income in 1965, for residents of Bell County, amounted to \$1,161, or an increase of 16.7 per cent over the 1960 figure of \$995. But residents of Harlan County actually had less income in 1965 than in 1960; 1965 statistics indicated that per capita income had decreased by 15.1 per cent to \$1,209.⁸⁴

Wages and salaries accounted for most of the personal income of the residents in the South Cumberland Development Area. In Bell, Harlan, and Whitley Counties, wages and salaries accounted for 55-60 per cent of the 1965 personal income. Wages and salaries accounted for only 49.6 per cent of the personal income of residents of Knox County. On the bright side is the fact that transfer payments as a source of personal income decreased slightly in Bell, Knox, and Whitley Counties. Transfer payments accounted for 26.1 per cent of total personal incomes of Knox countians in 1965 compared to 32.1 per cent in 1961. In Bell County transfer payments accounted for 19.1 per cent of personal income in 1965 and 20.1 per cent in 1961. In Whitley County transfer payments accounted for 21.5 per cent of personal income in 1965 and 27.7 per cent in 1961. In Harlan County transfer payments accounted for 20.1 per cent of personal income in 1965 and 16.8 per cent in 1961. Figures for the state as a whole indicate that in 1965 wages and salaries accounted for 64.6 per cent of total personal income as compared to 62.6 per cent in 1961, and transfer payments accounted for 9.2 per cent in 1965 and 11.6 per cent in 1961.⁸⁵ Statistics for 1966 indicate that welfare payments in all four counties increased over the 1965 figures. Bell residents received payments totaling

\$3,743,000 in 1966 compared to \$3,171,000 in 1965. Total payments for 1966 in Knox County amounted to \$2,837,000 in 1966 as compared to \$1,883,000 in 1965. Payments in Harlan totaled \$3,574,000 in 1966 and \$3,196,000 in 1965. Whitley residents received payments totaling \$1,632,000 in 1966 as compared to \$1,534,000 in 1965.⁸⁶

Perhaps the distribution of bank deposits is the best indicator of the economic activity of businesses and individuals. From 1954 to 1964, total bank deposits, including interbank and government deposits, increased by 68.4 per cent for the South Cumberland Valley Development Area and private deposits, including total demand and time deposits of individuals, partnerships, and corporations, increased by 6.7 per cent during this decennial period.⁸⁷ (All these banking figures are for all the commercial banks in the counties.) Only in Harlan County did private deposits decrease (by 6.2 per cent). Total deposits in Knox County banks increased by 155.4 per cent from 1954-64 and private deposits increased by 165.3 per cent--the greatest percentage change of all the counties in the area.⁸⁸

Demand deposits of individuals, partnerships, and corporations in Knox County banks amounted to \$2,000,000 in 1960, \$4,000,000 in 1965 and \$4,000,000 in 1966. Demand deposits (IPC) in Harlan County banks have not increased above the \$13,000,000 reported in 1960. Comparable deposits in Whitley banks have not changed above the \$10,000,000 reported in 1965 and deposits in Bell banks amounted to \$9,000,000 in 1960, \$11,000,000 in 1965, and \$12,000,000 in 1966.⁸⁹

Time and saving deposits (IPC) in Knox County banks amounted to \$2,000,000 in 1960, \$6,000,000 in 1965, and \$7,000,000 in 1966.

In Bell County banks these deposits increased from \$4,000,000 in 1960 to \$9,000,000 in 1965 and, in 1966, time savings deposits amounted to \$11,000,000. The biggest increase has been enjoyed by Whitley bankers whose time and savings deposits in 1965 (\$20,000,000) were over twice as voluminous as in 1960 (\$9,000,000). In 1966 these deposits edged up to \$22,000,000. Deposits in Harlan banks remained around \$2,000,000 in 1965 and 1966; in 1960 they amounted to only \$1,000,000.⁹⁰

Net figures for loans and discounts by all commercial banks indicate that in 1960 Knox County banks had assets of this kind totaling \$1,000,000, in 1965 they amounted to \$6,000,000, and in 1966, \$7,000,000. Net loans and discounts for Whitley banks soared to \$20,000,000 in 1966 from \$7,000,000 in 1960. Bell County banks were reported to have made loans and discounts totaling (net) \$7,000,000 in 1960, \$12,000,000 in 1965, and \$13,000,000 in 1966. Figures for Harlan banks remained at \$9,000,000 in 1965 and 1966.⁹¹

Figures on commercial and industrial loans by Knox County banks were withheld to avoid disclosure in 1960, 1965, and 1966. Bell County banks increased their loans to \$4,000,000 in 1965 compared to \$2,000,000 in 1960, and, in 1966, loans amounted to \$4,000,000. Harlan bankers had made commercial and industrial loans amounting to \$1,000,000 in 1960 and 1965 and in 1966 increased their loans to \$2,000,000. Loans by Whitley bankers increased to \$3,000,000 in 1965 from \$1,000,000 to 1960 and remained at \$3,000,000 in 1966.⁹²

Total assets of commercial banks in Bell, Whitley, and Harlan Counties exceeded liabilities in 1960, 1965, and 1966. But only in 1966, when total assets amounted to \$13,000,000 and total liabilities amounted to \$12,000,000, did commercial banks as a whole in Knox County

have assets exceeding liabilities. They remained solvent, however, in 1960 and 1965 with assets and liabilities being equal at \$5,000,000 and \$11,000,000, respectively.⁹³

In March of 1966 the Research and Statistics Unit of the Kentucky Department of Economic Security reported that all industry employment in Knox County amounted to 1,199. Manufacturing led the way with 616 followed by wholesale and retail businesses which employed 242 persons, and contract construction companies which employed 123. In Bell County manufacturing and wholesale and retail businesses employed the most persons with 1,195 and 1,007, respectively. In Harlan County the mining and quarrying industry employed 2,174 and wholesale and retail businesses, 1,113. In Whitley County the wholesale and retail industry and contract construction businesses employed the most persons with 937 and 694, respectively. By March of 1967, manufacturing employment in Knox County had increased to 673, and wholesale and retail employment had increased to 269. In Bell County employment in these same industries increased. In Whitley County, wholesale and retail employment jumped to 1,068 and manufacturing went ahead of contract construction employing 881. And, in Harlan County mining and quarrying employment increased along with employment in wholesale and retail establishments.⁹⁴ All these statistics refer to total number of workers covered by the Kentucky Unemployment Insurance Law.

Another indication of business activity is the amount of sales taxes collected from retailers and other businesses selling goods or rendering services on which such a tax is levied. Sales-tax receipts for counties in the South Cumberland Valley area were not available in 1960 or 1966, but, in 1965, tax receipts by Knox County businesses

amounted to \$358,000; Bell businesses collected \$937,000 in sales taxes, Whitley establishments collected \$858,000, and businesses in Harlan County turned over tax receipts totaling \$1,072,000.⁹⁵

So these recent statistics on Knox County economic change and change in contiguous counties indicate that there has been some progress within the area, but the counties in the region still lag behind the state and the nation with respect to these selected economic indicators.

CHAPTER V

SURVEY WORK IN THREE KNOX COUNTY COMMUNITIES: PROBLEM, METHODOLOGY-DATA COLLECTION, RESULTS, INTERPRETATION, AND CONCLUSIONS

The Problem

In 1965 the Office of Economic Opportunity solicited the help of the Center for Developmental Change at the University of Kentucky and asked that they undergo an interdisciplinary study of the effects of the Knox County Community Action Program. During that same year the OEO entered into a three-year contract with the University of Kentucky Research Foundation and Contract No. 693 became the Office of Economic Opportunity-Community Action Program-Evaluation Project.

Albeit there was no specific research design formulated for the economic phase of the project, the problem or questions to be answered were obvious in many cases. Has there been any change in the economic status of the people living in Knox County and the contiguous counties in the South Cumberland Valley area? Has there been any economic progress since the inception of the Community Action Program in 1965, and to what extent can the growth or decline be attributed to the presence of such programs? There are two of the fundamental questions upon which this investigator focused. This first part of this paper has been devoted to answering the first question--has there been any economic growth or development during the years prior to the Community Action Program and during the years in which such programs have been operative?

Within this part of the report will presumably lie the answer to the association question. In the event of economic changes, what other factors and variables can one say had an effect on such changes? Particularly, did participation in community center activities play an important role in the economic progress of the respondents? The search in this report was not for new plant locations that might have accounted for any changes in the development of the area but for social and psychological variables that are associated with economic variables. Finally, the question of significant differences between interview periods had to be answered. Was there a significant difference in the economic status of respondents in Time Two as compared to Time One? Was the degree of participation in community center programs different in the several interview periods? And was the amount of association between economic and social variables in Time Two different from Time One? These are the questions that we addressed ourselves to in the survey part of the report.

There are a number of scholars who have undergone studies of the political, social, economic, and cultural development of particular societies and developing regions. Invariably, researchers discovered that social change or economic development does not take place independently but is part of a process, a process commonly called the modernization process. The historian, C. E. Black, has defined modernization as a general term "describing the process of rapid change in human affairs."⁹⁶ Black, recognizing development as a process, contends that all modernizing societies go through the following phases:⁹⁷

1. The challenge of modernity: society initially confronts new ideas and institutions; advocates of modernity emerge.
2. The consolidation of modernizing leadership: the transfer of power from traditional to modernizing leaders--bitter struggles between power groups generally take place.

3. Economic and social transformation: development of economic growth and social change to the point where the population is predominantly urban and industrial as opposed to rural and agrarian.
4. The integration of society: the phase in which economic and social development begin to bring about the entire reorganization of society.

The variables, or factors, that precipitate modernity in some societies and stifle it in others are so baffling that one scholar devoted an entire book to the problem of how economic growth begins. Everett E. Hagen, an imminent economist at the Massachusetts Institute of Technology wrote in the preface to his book, On the Theory of Social Change: How Economic Growth Begins, that the inability of the Burmese to harness the resources at hand in behalf of economic development encouraged the publication of his book.⁹⁸ After returning from two years as an economic advisor to the government of the Union of Burma, Hagen joined the staff of the Center for International Studies at MIT in 1953. He explains the problems and complexities that provided the challenge for the book that ensued:⁹⁹

Since 1956 my energies have been devoted primarily to evolving an answer to the general question implicit in that specific one (e.g., why the Burmese, who were sincere about their desire for growth, had failed to achieve it). Why have the people of some societies entered upon technological progress sooner or more effectively than others? Since it seemed clear to me that the differences were due only in minor degree to economic obstacles, lack of information, or lack of training, I turned my attention to other possible causes of differences in human behavior--to differences in personality, and hence personality formation and the social conditions affecting it . . . this study led, in turn, to a general theory of social change.

Presumably, the emphasis on an interdisciplinary approach by the officials calling for our three-year project is a reflection of this same kind of thinking. This investigator, influenced by the writings of Hagen, Rostow, Lerner, Pye, and other scholars, chose to focus on the behavioral

syndromes that characterize the impoverished, the transitional, and modern personalities.¹⁰⁰ Lewis Donohew and B. K. Singh, investigators on another aspect of the OEO-CAP Evaluation Project, have identified, through the statistical technique of factor analysis, types of modernizing personalities in Knox County.¹⁰¹ This investigator has attempted to associate some economic variables with some receptiveness-to-change variables as a means of explaining the relationship between economic and social change. So the problem of economic growth has been equated with the problem of modernity to the extent that it is a perennial manifestation of a modern society and one of the final stages through which a society passes before it becomes modern.

Although the empirical study within this report is nothing more than ex post facto research, there were some hypotheses that underlined the statistical investigation. With regard to the economic variables, it was expected that there would be significant differences between Time-One and Time-Two responses to all the economic questions. The only rationalization for this speculation is the overall progress of the national and state economies during the last eight years, along with the suspected impact of funds pumped into the area over the last three years. These factors should have changed the living standards of the rural poor in Knox County, which is not to say that the changes should be relatively significant with respect to Kentucky, other states, or the nation.

A second hypothesis centered around the participation variable. It was suspected that the extent and degree of participation in community center programs would change from Time-One to Time-Two interview periods. Since we had interviewed heads of households and homemakers in rural areas

of Knox County and since the center programs were aimed at these impoverished people, participation in the programs was expected to increase as familiarity increased. With regard to the multiple regression problem, it was hypothesized that participation would account for a significant amount of the variance in the economic index, and that it would be associated or correlated negatively with the economic index. Since the programs were aimed at the poor, it was expected that those with the highest income in the sample would be the less-active participants and those with the lowest incomes the most-frequent participants

A final and very general hypothesis was that the forty-five independent variables in the multiple regression problem would account for a significant amount of variance in the family income variable. This hypothesis stemmed from the writings of Hagen, Black, and others who insist that the development process encompasses many stages, economic change evolving only after social, political, and cultural change have commenced.¹⁰² To the extent that these forty-five variables were a measure of social, political, and cultural change it was thought that economic progress, as measured by the family income variable, would be strongly linked with these changes.

Methodology--Data Collection

All of the empirical tests in this report are based on randomly selected samples of persons who are heads of households or homemakers in the Knox County communities of Messer, Kay Jay, and Middle Fork. The population from which the samples were taken was defined as all heads of households and homemakers living in rural areas of these communities. This investigator was not involved in the sample selection or the data collection. He only

had access to the data that had already been coded from the questionnaires in two separate time periods. Although extensive interviewing was conducted in six of fourteen communities having community centers, this investigator was limited to the three communities in which responses to all the relevant questions could be found for both interview periods.

Except those questions that made up the participation variable and the questions included in Table II, all the data comprising the economic and social variables were obtained from head of household and homemaker questionnaires administered in the summer of 1966 and the spring of 1968. Interviewers from the University of Kentucky arranged meetings with respondents, usually working through the community center director and at the center (e.g., old school house, renovated gas station, or grocery store). The interviewers asked and read each question individually. It generally took about an hour to complete the questionnaire. A file replete with the names of each respondent and the reasons for not answering the questionnaires was kept for reference when the second questionnaire was administered in the spring of 1968. Only persons who had completed the Time-One interview were approached and interviewed in Time-Two.

The sample size for Time-Two studies was somewhat smaller than for Time-One because there were some respondents, interviewed in 1966, who had moved, been sick, or refused to be questioned in the spring of 1968. The sample size varies from 137 respondents in the four-variable multiple regression problem to 236 respondents in Time-One who answered the nine economic questions. The center directors were asked the participation questions in a separate questionnaire which also contained the questions delineated in Table II.

After the questionnaires had been filled out, the interviewers were responsible for seeing that they arrived safely at the Office of the Project in the Center for Developmental Change at the University of Kentucky. Coding instructions were completed by each investigator who had questions relevant to his project. A staff of coders followed these directions and prepared the data for transformation onto IBM cards. Key punch operators punched the data on the cards and the IBM 360 computer in the Computer Center at the University of Kentucky performed the statistical analyses. A statistical library of programs for the 360 computer, published by the Computer Center, was utilized by all of the investigators on the project.¹⁰³

Definition of Variables

Since this was ex post facto research, this investigator had no control over the operational definition of the variables used in the project. Economic progress was defined by the questions included in the questionnaires administered in 1966 and 1968. By looking at Table I, one can see that most of the variables are dichotomous, which renders them worthless in a co-variation problem. In an effort to condense the composition of the economic index used as the dependent variable in the four-variable multiple regression problem, the variables in Table I were treated as a nine-point economic scale and the nine variables were item analyzed. The item analysis demonstrated that employment time, employment level, and total family income were the most important in terms of impact of the nine items in the scale. So these three items were used in comprising the economic index. Each respondent's answers to these three questions were totaled to code an economic index score for each person in the sample. Corresponding scores on the participation variable, the innovativeness scale, and the

communications index were tallied for each respondent (n equals 137). These four variables were used in the multiple regression problem for Time-One data.

As mentioned earlier, participation in center programs was operationally defined as the rating given each respondent by the director of the center to which he belonged or that he attended. Innovativeness was defined as the extent to which the respondents were receptive to new programs and ideas. A composite score for each individual was obtained with respect to his ideas concerning the community centers, the Early Childhood Program, the Model Homes Program, the Work Study Program, the Landscaping and Home Beautification Program, the Neighborhood Youth Corps, birth control measures, adult education, the Head Start Program, and the Job Corps. Donohew and Singh go into detail on the measurement of this variable in their study.¹⁰⁴ The communications index was a measure of exposure to mass media. The index measured the extent to which (number of hours of exposure) respondents exposed themselves to newspapers, magazines, radio and television.

To explain how the forty-five social variables were defined is beyond the scope of this report. Donohew and Singh have explicated most of these variables in their report.¹⁰⁵ But most of these variables have been used in other studies of social and political change and are recognized as receptiveness-to-change variables in the literature.

Methods of Analysis

Three methods of statistical analysis were used in the study. A t-test was used to measure the differences between responses in two interview periods.¹⁰⁶ Multiple regression and correlation analysis was utilized to measure the impact of two or more independent variables on some measure of

economic status.¹⁰⁷ Though not a statistical program, one-way frequency distributions were obtained by the 360 computer as a means of interpreting the extent of responses to each question.¹⁰⁸ This program renders percentages and sample sizes for each item or question for which there are answers.

In the multiple regression problems the economic index and total family income for the year prior to the interviewing date were used as the measures of economic status, the variable to be predicted or accounted for. The social variables measuring social and political change were those variables that were thought to account for the variance in economic change; they were the causal or independent variables. It should be noted that, since this was an ex post facto project, the independent variables could not be controlled or manipulated in an experimental study. Consequently, without the manipulation or control of desirable and undesirable independent variables, it was difficult to exploit the systematic variation of the dependent and independent variables. This investigator has tried to relate variables on which information had already been collected to see whether economic and social change are related.

Finally, t-tests of significant mean differences were computed when applicable. The mean was used as a measure of central tendency. And an eleven-variable multiple regression problem was run for both Time-One and Time-Two data to see if the amount of variance accounted for differed significantly. The lack of any significant differences for the four-variable problem based on Time-One data rendered the problem meaningless for Time-Two; this was the assumption, so more variables were added in the Time-Two analysis.

Results

Economic Data

As hypothesized, there was a significant difference in a number of the economic measures. When interviewed in the spring of 1968, 54 per cent of the 325 respondents said they had no running water. In the summer of 1966, 61 per cent of the respondents had no running water in their dwellings. Table I shows that the difference in the two means was significant at the .03 level.

The number of persons having telephones and electricity in their homes increased significantly during the period from the summer of 1966 to the spring of 1968. In 1966, 26.5 per cent of the 336 respondents had telephones in their homes and 91.4 per cent had electricity. In 1968, 35.7 per cent of these persons had telephones and 92.9 per cent had electricity in their homes (significant at less than .001 and .02 levels, respectively).

The two most important findings with respect to the economic data center around employment level and total family income. Statistics indicate that the number of rural persons from Messer, Kay Jay, and Middle Fork who are unemployed has increased since 1966. Out of our sample of 333, 61.6 per cent were unemployed in the spring of 1968 as compared to 54.5 per cent in the summer of 1966. During the two-year period, the number of persons employed in the Work Experience and Training Program decreased, and the number of irregularly-employed persons decreased. Table I also shows that the number of unskilled employees has decreased as has the number of professional employees, but the number of semi-skilled and skilled employees has increased. The mean employment level

reported in the spring of 1968 differed significantly from the level in the summer of 1966 as shown in Table I (significant at .13 level).

Total family income in Time-Two differed significantly from Time-One. In the summer of 1966, the rural family in these three Knox County communities had made, on the average, from \$500-999 in 1965 as compared to \$2,000-2,499 in 1967. The distribution for Time-One and Time-Two can be found in Table I (significant at less than .001).

So the survey data, with respect to economic variables, coincides with the aggregate data for Knox County. Total family income has increased but the number of unemployed persons has also increased since 1966, which suggests that more persons are living off government transfer payments. More rural families now have electricity, running water, and telephones than in 1966. It should be noted that there were no t-tests of significant differences run for some of the variables in Table I because of the discrepancies between sample sizes in the two time periods.

Participation-Oriented Questions

Data collected during June of 1968 indicate that the average respondent living in Messer, Kay Jay, and Middle Fork had to travel from one to two miles to get to the nearest community center.

The rural populace within these communities have begun to participate more in community center activities but 44.6 per cent still do not participate at all. Table II shows that in 1966, 57 per cent of the respondents had not participated in center activities at all. And of the 43 per cent who were classified as participants in the programs, 73 or 28.4 per cent of the total sample were classified by center directors as low participants. In 1968, however, 44.6 per cent of the 258 persons responding to the questionnaire were classified as nonparticipants. Those who had begun to participate were

mostly classified as low participants, 40.6 per cent of the total respondents. But the extent of participation did increase during the two-year period (differences in mean participation significant at less than .001 level).

It is also interesting to note the responses to certain questions that reflect increased modernity or receptiveness to ideas and values conducive to change. Responses in Time-One and Two interview periods can be found in Table II. More parents think their children should stay in school longer as indicated by the age at which they think their children should be allowed to quit school. Most parents felt that a family size of four was ideal (1968) as compared to a response of five in 1966.

One of the most baffling findings was the fact that the number of persons who did not know where to go for a physical checkup increased in 1968 as compared to the interview period in 1966. And more persons would go to family, friends, or relatives for advice on sickness than would have in 1966. When interviewed in 1968, fewer persons said they would consult a physician or nurse in the event of sickness and more persons were unaware of whom to contact for advice on sickness in 1968 than there were in 1966. All of the mean differences are relatively significant as can be seen in Table II.

So the findings with respect to these questions were of a positive nature.

Four-Variable Multiple Regression Problem

The results of these calculations were drastic since there was not a single statistic that reflected any association between the economic index and the three independent variables--participation in center programs, innovativeness, and the communications index.

What do the statistics in Table III mean? The partial regression coefficients indicate the predicted average change in the economic index with unit changes in each independent variable, determined while simultaneously eliminating from the economic index any variation accompanying changes in the exogenous independent variables. These coefficients reveal the true relationship between the economic index and the other independent variables. by eliminating the effects of all but one of the considered independent variables. The standard error of these coefficients attests to the predictive accuracy of the independent variable under consideration; the greater the value of these standard errors the greater is the dispersion between the actual values of the economic index and the predicted values of the index when the net effect of one independent variable is measured. These statistics also attest to the reliability of the regression coefficients; if the standard errors are as large as the coefficients then the coefficients are not very reliable predictors of the economic index.

The coefficients of partial determination indicate the percentage of variation in the economic index that the first independent variable accounts for while the other independent variables are held constant--they measure the true amount of variation in Y that can be associated with X_1 -n.

The coefficient of multiple determination indicates the percentage of variation in the economic index that the four independent variables can account for; it indicates the combined importance of the considered variables as they affect the dependent variable. And the standard error of the estimate indicates the dispersion between predicted and actual values of the dependent variable based on the multiple regression equation from which the predicted values emerged.

A close look at Table III will show that the three independent variables accounted for less than one per cent of the variance in the economic index. This is as far as we need to go in explaining the results to this problem.

Forty-Six Variable Multiple Regression Problem

Convinced that not enough variables were included to adequately represent social change in the first problem, this investigator decided to employ 45 independent variables and study the effects they had on total family income. Time-One data were used in this study. The results are included in Table IV. The beta coefficients reported in the table indicate the importance of each variable with respect to its influence on total family income. The greater the beta coefficient the greater the effect of influence of the variable on the dependent variable. These are partial beta coefficients which are the partial regression coefficients times the standard deviations of the appropriate observations of the considered variables. The significance levels are in regard to the t-distribution and indicate the levels at which the beta coefficients are significant. The ten variables with the largest beta coefficients were used in an eleven-variable problem to see to what extent these variables would account for variation in total family income. This is our next problem.

Table IV shows that 47 per cent of the variation in total family income in 1965 can be attributed to or associated with the variation in these 45 variables. The small standard error of estimate (2.149) indicates that our multiple regression equation did render accurate predictive values for total family income. The coefficient of multiple determination was significant at about the .09 level of the F-distribution.

But what about the variables with the greatest impact on family income? How much variance can a few of these variables account for? The remaining part of the report is concerned with the impact of ten of these forty-five variables on family income in 1965 and 1967.

Eleven-Variable Multiple Regression Problem: Time I and Time II

The eleven variables which had the most impact on total family income for 1965 as manifested in the previous problem were:

1. Education
2. Level of employment
3. Satisfaction: God is pleased
4. Size of family
5. Radio content
6. Radio usage
7. Newspaper usage
8. Magazine or bulletin usage
9. School usage
10. OEO personnel

The "usage" variables refer to the medium through which the respondents receive their information on the county, the state, the nation, the world, and the events that give their lives some meaning. Of these "usage" variables, only radio and school usage were positively related to family income. Hence, as total family income increased the use of the school and radio increased as a source of information.

Education, level of employment, size of family, radio usage, and school usage were the only variables in this problem that were positively related to total family income. In Time-One school usage was the most important positively related variable with respect to income, as the beta coefficient of .482 illustrates. But this variable coefficient was not significant at the .05 level. Education was the most significant positively related variable in Time-One analysis and magazine/bulletins as a source of information was the most important negatively related variable. As Table V

indicates, 17 per cent of the variance in family income can be attributed to the variation in these ten variables (significant at .05 level of F-distribution). So these variables alone do not account for very much variance in income and this is reflected in the small partial regression coefficients.

With respect to the Time-Two run of this problem, all the variables but magazine and bulletin usage are positively related to family income. In looking at the beta coefficients, it can be seen that education, level of employment, and family size are all significantly related in a positive way to family income. The only negatively related variable, magazine and bulletin usage, is also significantly related to income. It should be noted that in Time-Two analysis satisfaction-God-is-pleased, radio content, newspaper usage, and OEO personnel usage became variables that were positively related to family income. What this means is that as individuals began to expose themselves to the mass media, became interested in the things that were happening around them, began to think that there was nothing religiously inconsistent with getting ahead, and as they became more educated, their total family income or economic standards began to increase. These ten variables accounted for 25 per cent of the variation in total family income, this statistic being significant at the .01 level of the F-distribution.

In summary, the ten independent variables taken from the forty-six variable problem did account for a significant amount of variance in family income. These multiple regression problems have demonstrated that economic change is dependent on social and political change. The statistical technique of correlation and regression analysis has enabled the testing of the relationship between economic and social change.

Interpretation and Conclusions

The statistical tests conducted with Time-One and Time-Two survey data indicate that there has been positive economic and social change among the rural people of Messer, Kay Jay, and Middle Fork. Since random sampling procedures were followed and the samples were large enough, inferences about the rural population of these three communities can be made.

The data indicate that there has been economic and social change among these rural families. They are more sensitive to the local, state, national, and international events that shape their lives, and the statistics indicate that these people are spending more hours attending to the mass media in 1968 than they did in 1966. They have more money to spend on the necessities and "luxuries" of life than they did in 1966, although the number of those who are unemployed has increased, and the employment level of those who are employed has dropped. The implication of this statistic is that the increased amount of average family income is not due to an increased exploitation of productive sources of income but to an increased dependency on transfer payments. The aggregate statistics on the county point to this ominous fact. They have changed, however, in those characteristics which are related to economic development so that further development would appear to be predicted inasmuch as changes characteristically antecedent to economic growth have taken place since 1966.

Furthermore, the center activities are presumably occupying the time of the most impoverished. The negative beta coefficient in the forty-six variable problem indicates that as family income increases the extent, or amount, of participation in center programs decreases; the most impoverished are likely to be the ones to take advantage of the programs. In the spring

of 1968 more persons were participating in center programs regularly and more persons were undergoing economic and social change as indicated by the eleven-variable problem run for Time-Two data. If indeed the community centers in these areas have been the "hang-outs" where fruitful discussions about common goals and problems took place, where persons came to converse with young people from VISTA and other organizations, where persons sought advice on everything from birth control measures to filling out tax reforms, then the centers have rendered a great service. The survey data indicate that the community center concept is not an anathema but consistent with the process of social change. That is, those persons who showed advancement with respect to certain key receptiveness-to-change variables in Time Two also were participating more in center activities. The regression problem results for the eleven variables in Time Two indicate that social and economic change is underway in these Knox County communities, and this is the kind of trend that must be encouraged.

It should be noted that the population for the statistical problems in this project was defined as the rural families living in Messer, Kay Jay, and Middle Fork. No inferences beyond this population to Knox County as a whole should be made. Finally, it should be stressed that the lack of adequate survey data on the economic standards of these families made the development of a sound and reliable economic scale impossible. More extensive data on buying habits, investment and savings habits, sources of income, etc., would have rendered a better picture of the economic conditions of these communities and the county.

TABLES

TABLE II

Messer, Kay Jay, and Middle Fork
Time I and Time II Responses to Nine
Economic Variables and a T-Test of
Significant Mean Differences

(One-Tailed Probabilities for a One-Tailed Test)

Variable	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
<u>Housing</u>				
owned	75.3%	75.0%	.48	.32
rented	17.3%	15.8%		
free	7.4%	9.9%		
N: 336		N: 335		
<u>Amount of rent per month</u>				
no rent	83.6%	83.9%	No t-test run	
\$5-\$9	3.0%	2.7%		
\$10-\$20	9.8%	10.4%		
N: 55		N: 54		
<u>Running water</u>				
no	61.0%	54.2%	1.90	.03
yes	38.0%	45.2%		
N: 335		N: 335		

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded or been less than the second mean by chance; hence, the probability of .13 means that the differences between the means of time periods one and two could have occurred by chance only 13 cases out of 100. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05 this means that the differences in two means could have occurred by chance only in five cases out of 100. The level of significance should be set before the investigator begins his calculations but it is always advisable to report the level at which differences are statistically significant.

TABLE II Continued

Variable	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
<u>Toilet</u>				
no	2.7%	51.8%		
yes	22.6%	25.0%		
outside				
privy	74.4%	72.6%	.19	.43
	N: 335	N: 335		
<u>Telephone</u>				
no	72.9%	64.0%		
yes	26.5%	35.7%	3.74	< .001
	N: 336	N: 335		
<u>Electricity</u>				
no	8.3%	5.7%		
yes	91.4%	92.9%	2.15	.02
	N: 336	N: 335		

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded or been less than the second mean by chance; hence, the probability of .13 means that the differences between the means of time periods one and two could have occurred by chance in only 13 cases out of 100. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05 this means that the differences in two means could have occurred by chance only in five cases out of 100. The level of significance should be set before the investigator begins his calculations, but it is always advisable to report the level at which differences are statistically significant.

TABLE II Continued

Variable	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
<u>Employment level</u>				
unemployed	54.5%	61.6%		
employed				
in WE and T	13.4%	8.0%		
Irregularly				
employed	1.5%	.9%		
Unskilled				
employed	17.9%	15.2%		
Semi-skilled				
employed	5.1%	5.7%		
Skilled employed	3.3%	4.5%		
Professional employed	4.2%	3.3%	-1.14	.13
	N:335	N:333		
<u>Employment time</u>				
Unemployed	50.6%	16.7%		
01-09	.9%	1.2%		
10-19	1.8%	1.2%		
20-29	4.2%	3.9%		
30-39	10.7%	4.8%		
40-49	22.3%	19.3%		
Greater than				
50 hrs./wk.	9.5%	5.4%		
	N:326	N:176		
			47.6%(no answer) no t-test run	

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded or been less than the second mean by chance; hence, the probability of .13 means that the differences between the means of time periods one and two could have occurred by chance in only 13 cases out of 100. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05 this means that the differences in two means could have occurred by chance only in five cases out of 100. The level of significance should be set before the investigator begins his calculations, but it is always advisable to report the level at which differences are statistically significant.

TABLE II Continued

Variable	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
<u>Total family income</u>				
\$0-499				
\$500-999	6.8%	6.0%		
\$1,000-1,499	16.1%	19.3%		
\$1,500-1,999	23.2%	19.3%		
\$2,000-2,499	14.0%	8.1%		
\$2,500-2,999	12.5%	15.4%		
\$3,000-3,499	7.7%	9.6%		
\$3,500-3,999	7.7%	8.3%		
\$4,000-4,449	1.5%	1.8%		
\$4,500-4,999	3.6%	2.4%		
\$5,000-5,499	1.8%	1.2%		
\$5,500-5,999	.9%	1.8%		
\$6,000 or greater	.9%	1.2%		
	3.0%	4.2%	14.11	< .001
	N:336	N:333		

*The t-probabilities are the probabilities that the first mean could have exceeded or been less than the second mean by chance; hence, the probability of .13 means that the differences between the means of time periods one and two could have occurred by chance in only 13 cases out of 100. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05 this means that the differences in two means could have occurred by chance only in five cases out of 100. The level of significance should be set before the investigator begins his calculations, but it is always advisable to report the level at which differences are statistically significant.

TABLE III

Messer, Kay Jay, and Middle Fork
Time I and Time II Responses to Some
Participation-Oriented Questions and
a T-Test of Significant
Mean Differences

(One-Tailed Probabilities for a One-Tailed Test)

Question	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
1. How far do you live from the nearest community center?				
less than 1/2 mile		20.9%		
btw. 1/2 and 1 mile		15.5%		
1 to 1 1/2 miles		7.0%		
1 1/2 to 2 miles		8.1%		
2 to 3 miles		12.0%		
3 to 4 miles		13.6%		
4 to 5 miles		7.4%		
5 to 6 miles		12.0%		
more than 6 miles		3.5%		
	N=258			

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05, then one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

TABLE III Continued

Question	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
2. The community center directors were asked to what extent the respondents had participated in center activities at various time periods, using the scale: 1=no participation, 2=less than 25% participation, 3=25% to 75% participation, and 4=above 75%. For eight report periods, therefore, the lowest score might be 8, "no participation"; 9-12 "lower participation"; and 13-32, "higher participation."				

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05, then one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

TABLE III Continued

Question	Time Period		T-ratio	T-probabilities* (Level of significance)
	Time 1	Spring 1968		
June 1966 through** January 1967				
no participation		57.0%		
low participation		28.4%		
average participation		10.5%		
high participation		4.1%		
		N=258		

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05, then one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

**Dr. Ottis Murphy, a principal investigator in the OEO-CAP Evaluation Project in Knox County, operationally defined participation in community action programs as the rating given each respondent by the center director of the community center in which he participated. The directors were asked to rate the respondents before June 1966, during June 1966, during July 1966, during August 1966, during January 1967, during July 1967, during October 1967, and during February 1968. The directors gave a 1 to persons who had not participated at all, a 2 to persons who had participated less than 25% of the time but not more than, or equal to, half the time, a 3 to persons who had participated in half of the center activities but not as much as 75% of the center activities, and a 4 to persons who had participated in 75% or more of the center activities. Hence, persons who were rated a 5 were non-participants, persons rated from 6 through 10 were called low participants, persons rated from 11 through 15 were labeled average participants, and persons with ratings of over 16 were rated high participants. This was the breakdown for time one scores which encompassed five interview periods. For time two, which covered three interview periods, individuals with ratings of 3 were nonparticipants, those with ratings from 4 through 6 were low participants, from 7 through 9 were average participants, and those with ratings over 9 were considered high participants. For a more explicit operational definition of participation in center programs, see Ottis Murphy and Paul Street's, The "Image" of the Knox County Community Action Program, Unit 9 of the final OEO-CAP Evaluation Project report.

TABLE III Continued

Question	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Time 2		
July 1967 through February 1968				
no participation		44.6%		
low participation		40.6%		
average participation		8.6%		
high participation		6.2%	13.65	< .001
	N=250			
3. At what age might you allow your child to quit school?				
16	10.6%	4.7%		
17	1.6%			
18	58.4%	56.5%		
19	.8%	2.0%		
20	2.7%	6.3%		
21	13.7%	16.5%		
22	5.9%	3.1%		
23 or older	1.6%	4.7%	- 1.08	.14
	N=255	N=255		

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05, then one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

TABLE III Continued

Question	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
4. What do you think is the ideal number of children to have per family?				
1		1.6%		
2	12.9%	16.3%		
3	8.6%	9.0%		
4	30.6%	38.2%		
5	11.9%	6.4%		
6	11.8%	10.8%		
7	8%	1.2%		
8	5.1%	1.2%		
9	18.4%	16.3%	2.45	.007
	N=255	N=251		
5. Where does one go to get a physical checkup?				
do not know	1.6%	5.9%		
physician or hospital	98.4%	94.1%	2.00	.02
	N=255	N=255		

(Continued)

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05, then one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

TABLE III Continued

Question	Time Period		T-ratios	T-probabilities* (Level of significance)
	Summer 1966	Spring 1968		
6. Where do you go to get advice on sickness?				
do not know	4.0%	9.9%		
family, friends and relatives	38.4%	54.9%		
physician, nurse or hospital	16.0%	5.9%		
own self	41.6%	29.3%	4.10	< .001
	N=255	N=253		

*The t-probabilities are the probabilities that the first mean could have exceeded the second mean or been less than the second mean by chance; hence, the probability of .14 means that in 14 cases out of 100 you would expect the differences in means to have occurred by chance. Statisticians agree that an alpha level of .05 or .01 should be met before an investigator can purport to have statistically significant differences. If the level of significance is .05 then, one can say that the differences between mean scores in time one and time two could have occurred by chance in only five cases out of 100; if alpha is .01 then you would expect the differences to be significant in 99 cases out of 100.

TABLE IV
STATISTICS ON FOUR-VARIABLE MULTIPLE
REGRESSION PROBLEM
(n=137)

Time I

y = Economic Index
x1 = Participation
x2 = Innovativeness
x3 = Communication Index

1. Partial Regression Coefficients:

$$b_{12 \cdot 34} = .027$$

$$b_{13 \cdot 24} = .001$$

$$b_{14 \cdot 23} = .036$$

2. Standard Errors of Regression Coefficients:

$$Sb_{12 \cdot 34} = .075$$

$$Sb_{13 \cdot 24} = .048$$

$$Sb_{14 \cdot 23} = .195$$

3. Coefficients of Partial Determination:

$$r^2_{12 \cdot 34} = .004$$

$$r^2_{13 \cdot 24} = .000$$

$$r^2_{14 \cdot 23} = .001$$

4. Coefficient of Multiple Determination:

$$r^2_{1 \cdot 234} = .0015$$

5. Standard Error of Estimate:

$$S_{1 \cdot 234} = 5.27$$

TABLE V
 STATISTICS ON FORTY-SIX VARIABLE
 MULTIPLE REGRESSION PROBLEM
 (n=207)

Time I

y = Total Family Income
 in 1965

Independent Variables	Means	Beta Coefficients	Significance Level of Beta Coefficient
1. Age	47	.07	.50
2. Education	Less than 5 yrs.	.18	.01
3. Number of persons visited often and regularly	2		
4. Frequency of visits	every 2 or 3 days		
5. Organizational participation	none		
6. Church participation	do not belong to a church but attend less than once a month some church	.13	.05
7. Participation in community action programs	most have been to CAP meetings or taken part in CAP programs	-.17	.05

(Continued)

TABLE V Continued

Independent Variables	Means	Beta Coefficients	Significance Level of Beta Coefficient
8. Level of employment	most are employed, work 1-9 hrs. a week at their jobs	.23	.06
9. Vocational aspirations	most want some training (job)	.07	.50
10. Source of income	combination of farming, aid to dependent children, and public assistance	.14	.05
11. Empathy total	average=15.35	.10	.30
12. Educational aspirations for son	high school	.06	.50
13. Educational aspirations for daughter	high school	.07	.35
14. Availability of auto	most have no car but have regular use of someone else's car	.14	.07
15. Access to highway	on all-weather, gravel or dirt	-.02	
16. Frequency of trips to town	1 or 2 times a week	-.10	.14

(Continued)

TABLE V Continued

Independent Variables	Means	Beta Coefficients	Significance Level of Beta Coefficient
17. Trips to big city	have been to big cities (i.e., Lexington, Louisville, Knoxville, etc.) 20 times	.01	
18. Political knowledge	knew a U.S. senator & governor or county judge	.11	.35
19. Dogmatism total	average=42	-.04	.60
20. Satisfaction: God is pleased	God is indifferent to our feelings regarding "getting ahead"	-.26	.05
21. Alienation	average=19.44		
22. Political efficacy	average=17.96	.05	.50
23. Size of family	5 (average size)	.19	.01
24. Distance from center	1-2 miles	.10	.14
25. Condition of dwelling	sound (interviewer determined)	.08	.35
26. Yard appearance	reasonably neat & orderly (interviewer determined)	.13	.10
27. Radio hours	8 hrs. a week	.01	
28. Television hours	7 hrs. a week	.14	.10

(Continued)

TABLE V Continued

Independent Variables	Means	Beta Coefficients	Significance Level of Beta Coefficient
29. Movies	3 a year	-.17	.02
30. Newspaper content	take and read	.05	>.50
31. Radio content	just listen in general	-.23	.11
32. Television content	watch own or someone else's	.10	.49
33. Magazine content	do not take but will read someone else's occassionally	-.08	.48
34. Innovativeness	average=28.71	-.15	.46
35. Radio usage	average=13.36	.25	.35
36. Television usage	average=14.34	-.07	>.50
37. Newspaper usage	average=13.54	-.18	>.50
38. Magazine or bulletin usage	average=14.45	-.42	>.50
39. School usage	average=14.30	.46	.20
40. Neighborhood, friends, and family usage	average=12.00	.14	.50
41. Community center personnel usage	average=14.16	-.01	>.50
42. OEO personnel usage	average=14.40	-.26	>.50

(Continued)

TABLE V Continued

Independent Variables	Means	Beta Coefficients	Significance Level of Beta Coefficient
43. Others, usage	average=14.40	-.07	>.50
44. Overall modernity scale	average=14.86	.16	.04
45. Source credibility	average=10.08	-.03	>.50

Y = Total Family Income in 1965 \$1,500-1,999; std. error of Y = 2.149

$e^2 = .47$, significant at about .09 level*
(F-distribution)

*For 256, 106, 2.56, and 0.56 points of the F-distribution, see George W. Snedecor's Statistical Methods (Iowa State University Press, 1956, fifth edition), pp. 276-280.

TABLE VI

STATISTICS ON ELEVEN-VARIABLE MULTIPLE
REGRESSION PROBLEM
($n_1=207$, $n_2=205$)
TIME I AND TIME II

y = Total Family Income
in 1965

T_1 = Time I (Summer 1966)

T_2 = Time II (Spring 1968)

Independent Variables	Partial Regression Coefficients ($b_{yx_1 \cdot x_2 \dots x_n}$)		Standard Errors of ($b_{yx_1 \cdot x_2 \dots x_n}$)		Beta Coefficients		Coefficient of Multiple Determination ($R^2_{yx_1 \cdot x_2 \dots x_n}$)		Standard Error of Estimate	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2
1. Education	.660	.192	.158	.082	.290**	.151**	.17*	.25**	2.411	2.114
2. Level of employment	.151	.273	.082	.077	.196*	.238**				
3. Satisfaction: God is pleased	-.22	.178	.078	.131	-.167	.063				
4. Family size	.072	.227	.066	.054	.075	.269**				
5. Radio content	-.101	.228	.091	.210	-.073	.069				
6. Radio usage	.235	.120	.204	.071	.255	.130				

(Continued)

*Significant at .05 level: T-distribution for betas and F-distribution for r^2 .

**Significant at .01 level: T-distribution for betas and F-distribution for r^2 .

TABLE VI Continued

Independent Variables	Partial Regression Coefficients ($by_{x_1 \cdot x_2 \dots x_n}$)		Standard Errors of ($by_{x_1 \cdot x_2 \dots x_n}$)		Beta Coefficients		Coefficient of Multiple Determination ($R^2_{y \cdot x_1 \dots x_n}$)		Standard Error of Estimate	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2
7. Newspaper usage	-.181	.162	.394	.093	-.215	.128				
8. Magazine or bulletin usage	-.476	-1.258	.500	.307	-.525	-.342**				
9. School usage	.480	.101	.370	.117	.482	.070				
10. OEO personnel usage	-.144	.228	.416	.219	-.156	.081				

**Significant at .01 level: T-distribution for betas and F-distribution for r^2 .

FOOTNOTES

FOOTNOTES

- ¹In her nationally carried article on April 23, 1968, Eva Edstrom noted that a 25-member Citizen's Board of Inquiry Into Hunger and Malnutrition in the United States had predicted that at least 10 million Americans were "wasting away from chronic hunger and malnutrition." (Edstrom, The Courier Journal, April 23, 1968) p. 1.
- ²For a discussion of the various economic factors that reflect economic development and growth see the book of readings, edited by David E. Novack and Robert Lekachman called Development and Society: The Dynamics of Economic Change (New York: Saint Press, 1964). Or for a lucid and thorough look at the various approaches to economic development and the pitfalls of certain doctrines see Everett E. Hagen's On the Theory of Social Change (Illionis: Dorsey Press, Inc., 1962) Chapter 3; "Inadequacy of Economic Theories of Growth," pp. 36-55.
- ³Jacob Viner, "The Economics of Development," in Development and Society: The Dynamics of Economic Change (1964) E. Novack and Lekachman, pp. 4-9. It should be noted here that Viner developed this definition in an effort, it seems, to gear the development approach to the problem of poverty. He suggests that the reduction of mass poverty should be "a crucial test of the realization of economic development." And he also implies that per capita indices of level of living should reflect the changes in economic progress of the impoverished. It should also be noted that Viner discusses what I have called "bottlenecks" to development in the context of what other economists have regarded as necessary conditions before an economy is labeled "developing." The associations and comments between per capita income and development bottlenecks were this author's and not Viner's.
- ⁴Ibid., p. 7.
- ⁵Ibid., p. 5.
- ⁶John L. Fulmer, "Economic Development Potentials in Kentucky, 1963-1975," a research brief of the Bureau of Business Research, University of Kentucky, January 1965, p. 2.
- ⁷Ibid., p. 7-8.
- ⁸Summary of the Economic Opportunity Act of 1964: The President's Task Force on the War Against Poverty, August 20, 1964. Also see Poverty in Affluence: The Social, Political, and Economic Dimensions, ed. Robert E. Will and Harold G. Vatter (New York: Harcourt, Brace and World, Inc., 1965), pp. 217-220.

- ⁹Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart, and Winston, Inc., 1967), p. 360.
- ¹⁰Dr. Paul Street, Director of the OEO-CAP Evaluation Project in Knox County, and Philip Jeffress, Research Assistant on the economic phase of the project, incorporated these questions in time one and time two head of household and homemaker questionnaires.
- ¹¹Dr. Paul Street and Philip Jeffress were responsible for seeing that the respondents were randomly chosen from a list of head of household and homemakers in communities.
- ¹²For an excellent discussion of attitude formation and change and the measurement of attitudes see David Krech, Richard S. Crutchfield, and Egerton L. Ballachey's Individual in Society (New York: McGraw-Hill Company, Inc., 1962), pp. 137-273.
- ¹³For lucid and illuminating reading on the "flow of personal influence" in the areas of politics, fashion, public affairs, marketing, etc., see Elihu Katz and Paul F. Lazarsfeld's Personal Influence: The Part Played by People in the Flow of Mass Communications (Illinois: The Free Press, 1955).
- ¹⁴Albert O. Hirschman, The Strategy of Economic Development (New Haven: Yale University Press, 1958), pp. 11-12 in the 1965 paperback edition (Yale Paperback).
- ¹⁵Ibid., p. 12.
- ¹⁶For detailed explanations of the techniques discussed here see Mordecai Ezekial and Karl A. Fox's Methods of Correlation and Regression Analysis: Linear and Curvilinear (New York: John Wiley and Sons, Inc., third edition and fifth printing, June 1966).
- ¹⁷John L. Fulmer, Development Potentials for Kentucky Counties with Related Statistics, Bureau of Business Research publication, July 1966, pp. 53-79.
- ¹⁸Ibid., p. 111.
- ¹⁹Fulmer, op. cit., (July 1966) pp. 55-58.
- ²⁰These population figures for 1965 were estimated by the Kentucky Department of Health. Kentucky Vital Statistics, 1965. Kentucky Department of Health, 1967.
- ²¹This author obtained these figures from a data development book on the counties in the southern portion of the Cumberland Valley Area. The book entitled The South Cumberland Valley Development Area Data Book was prepared by the Kentucky Area Development Office, Frankfort, Kentucky, in August of 1967. Spindletop Research, Inc. of Lexington helped in the compilation and preparation of this book. The Cumberland Valley Area was divided into North and South to expedite the compilation and

ease of handling of the data herein presented for the four southern counties. Although this data book was distributed to many agencies and universities, the foreword states that "no statement of potential, no implication by virtue of inclusion or exclusion of specific data should be inferred as a recommendation for policy or action," p. 17.

- 22 Willis A. Sutton, Jr. and Jerry Russell, The Social Dimensions of Kentucky Counties: Data and Rankings of the States; 120 Counties on Each of 81 Characteristics, Bureau of Community Service publication, University of Kentucky, Kentucky Community Series Number 29, September, 1964, pp. 19-20.
- 23 Ibid., pp. 19-20.
- 24 Ibid., pp. 31-32. (Table 10)
- 25 Ibid., pp. 42-43. (Table 15)
- 26 Fulmer (July 1966), op. cit., pp. 65-67.
- 27 Sutton and Russell, op. cit., pp. 17-18.
- 28 Harry M. Caudill, Night Comes to the Cumberlands: A Biography of a Depressed Area (Boston: Little Brown and Company, an Atlantic Monthly Press book, 1962), pp. 136-137.
- 29 Ibid., pp. 254-257.
- 30 Ibid., p. 257.
- 31 Ibid., p. 258.
- 32 Fulmer (July 1966), op. cit., pp. 81-84.
- 33 This definition of the labor force was taken from Erwin E. Nemmer's Dictionary of Economics and Business (LITTLEFIELD, Adams paperback, 1966), p. 231.
- 34 Fulmer (July 1966), op. cit., pp. 82-84.
- 35 Ibid., pp. 85-87.
- 36 Sutton and Russell, op. cit., pp. 40-41.
- 37 Fulmer (July 1966), op. cit., pp. 88-92.
- 38 Kentucky Area Development Office Data Book, op. cit., pp. 27-31.
- 39 Ibid., p. 27.
- 40 Fulmer (July 1966), op. cit., pp. 91-93.

- ⁴¹Ibid., pp. 110-112.
- ⁴²Sutton and Russell, op. cit., p. 47.
- ⁴³Fulmer (July 1966), op. cit., pp. 125-129.
- ⁴⁴Kentucky Area Development Office Data Book, op. cit., p. 34.
- ⁴⁵Fulmer (July 1966), op. cit., pp. 129-131.
- ⁴⁶Nemmers op. cit., p. 446.
- ⁴⁷Fulmer (July 1966), op. cit., pp. 122-124.
- ⁴⁸Ibid., pp. 135-142.
- ⁴⁹Ibid., pp. 155-166.
- ⁵⁰Kentucky Area Development Office Data Book, op. cit., pp. 193-197.
- ⁵¹Ibid., pp. 196-197.
- ⁵²Ibid., p. 191.
- ⁵³Ibid., pp. 87-92.
- ⁵⁴Ibid., p. 27.
- ⁵⁵Federal Reserve Bank of Cleveland, Statistical Profile: Counties of the Fourth Federal Reserve District, May 1968, p. 9.
- ⁵⁶Kentucky Area Development Office Data Book, op. cit., pp. 123-124.
- ⁵⁷Ibid., pp. 125-126.
- ⁵⁸Ibid., pp. 125-126.
- ⁵⁹Ibid., p. 126
- ⁶⁰Ibid., p. 40.
- ⁶¹John L. Fulmer and Don M. Soule, "Why Kentucky Ranks Low Among the States in Per Capita Personal Income," Bureau of Business Research brief, University of Kentucky, November 1966, p. 6.
- ⁶²Ibid., p. 6.
- ⁶³Fulmer (July 1966), op. cit., pp. 130-133.
- ⁶⁴Kentucky Area Development Office Data Book, op. cit., p. 41.

⁶⁵John L. Fulmer, "Factors Influencing State Per Capita Income Differentials," Southern Economic Journal (January 1950), pp. 259-278; and John L. Fulmer, "State Per Capita Income Differentials: 1940 and 1950," Southern Economic Journal, July 1955, pp. 32-47.

⁶⁶William D. Bishop, Kentucky County Income, 1963, with Comparative Data, 1963 (Lexington: Bureau of Business Research, University of Kentucky), 1965.

⁶⁷Fulmer (July 1966), op. cit., pp. 94-97.

⁶⁸Ibid., pp. 110-112.

⁶⁹Fulmer and Soule, op. cit., p. 11.

⁷⁰These calculations for the county vis-a-vis the state follow the same reasoning employed by Fulmer and Soule in their calculations for the state vis-a-vis the nation and other states. The calculations were based on 1950 and 1960 census data.

⁷¹Fulmer (July 1966), op. cit., pp. 205-207.

⁷²Ibid., pp. 125-129.

⁷³Ibid., pp. 65-68.

⁷⁴Fulmer and Soule, op. cit., p. 22.

⁷⁵Kentucky Area Development Office, op. cit., p. 101.

⁷⁶Ibid., p. 97.

⁷⁷Ibid., pp. 98-99.

⁷⁸Ibid., p. 100.

⁷⁹Claire C. Kelly, Eastern Kentucky: A Descriptive Analysis of the Population, an M.A. thesis presented to the Department of Sociology, University of Kentucky in May 1968. That author footnoted David L. Kruegel and Richard L. Ludtke, Kentucky County Provisional Estimates: January 1, 1968 (Lexington, Kentucky: University of Kentucky, Department of Sociology: February, 1968), as her source of 1968 estimates.

⁸⁰Ibid., pp. 12-13.

⁸¹These unemployment statistics were obtained from the Kentucky Department of Economic Security in Frankfort, Kentucky.

⁸²Ibid.

⁸³Kelly, op. cit., p. 143, Table 47. This author got her data from special releases by the Bureau of Business Research, University of Kentucky, Lexington.

- ⁸⁴Ibid., p. 143.
- ⁸⁵Ibid., pp. 145-146.
- ⁸⁶Federal Reserve Bank of Cleveland, op. cit., p. 41.
- ⁸⁷Kentucky Area Development Office, op. cit., p. 43.
- ⁸⁸Ibid., p. 43.
- ⁸⁹Federal Reserve Bank of Cleveland, op. cit., p. 36.
- ⁹⁰Ibid., p. 37.
- ⁹¹Ibid., p. 33.
- ⁹²Ibid., p. 34.
- ⁹³Ibid., p. 32.
- ⁹⁴These figures were taken from data collected by the Department of Economic Security of the state of Kentucky.
- ⁹⁵Federal Reserve Bank of Cleveland, op. cit., p. 29.
- ⁹⁶C.E. Black, The Dynamics of Modernization: A Study in Comparative History (Harper Torchbooks, Harper and Row, 1966), p. 7.
- ⁹⁷Ibid., pp. 67-94.
- ⁹⁸Hagen, op. cit., preface, p. ix.
- ⁹⁹Ibid., preface, p. ix.
- ¹⁰⁰See the following books to which I am referring here: (a) Everett E. Hagen, The Theory of Social Change, (b) Walt W. Rostow, The Stages of Economic Growth (Cambridge, England: Cambridge University Press, 1960), (c) Daniel Lerner, The Passing of Traditional Society: Modernizing the Middle East (Free Press paperback edition, 1965), and (d) Lucian W. Pye, Communications and Political Development (Princeton, New Jersey: Princeton University Press, 1963).
- ¹⁰¹See Lewis Donohew and B. Krishna Singh, Modernization of Life Styles, Unit 7 of the OEO-CAP Evaluation Project Report.
- ¹⁰²Hagen and Black, op. cit.
- ¹⁰³In the summer of 1967, the Computer Center of the University of Kentucky, under the authorship of Selwyn A. Zerog, published a Statistical Library for the 360-50 Programs and Subroutines.
- ¹⁰⁴Donohew and Singh, op. cit.

¹⁰⁵Ibid.

¹⁰⁶The computer program used for mean differences is called "T-Test" and it can be found in Zerof's Statistical Library for the 360-50 Programs and Subroutines, University of Kentucky, 1967.

¹⁰⁷Ibid., program entitled MULTR.

¹⁰⁸Ibid. This program entitled "One-Way Frequency Distributions" (OWFIS) renders a percentage distribution of all possible responses to the questions. Table I and Table II are examples of the output of this program.

APPENDIX

QUESTIONS FROM HEAD-OF-HOUSEHOLD AND HOMEMAKER QUESTIONNAIRES USED IN TIME ONE AND TIME TWO OF THIS REPORT

Are you presently employed or unemployed?

_____ Unemployed

_____ Employed

If EMPLOYED: What is your present occupation? _____

Who is your present employer? _____

How many hours per week do you spend at this occupation?

_____ 01 - 0
_____ 10 - 19
_____ 20 - 29
_____ 30 - 39
_____ 40 - 49
_____ Over 50

What was your total family income last year? (Show card and record letter.)

_____ (Letter representing income bracket)

01 _____ \$ 0 - 249 (a)	13 _____ \$ 3000 - 3249 (m)
02 _____ \$ 250 - 499 (b)	14 _____ \$ 3250 - 3499 (n)
03 _____ \$ 500 - 749 (c)	15 _____ \$ 3500 - 3749 (o)
04 _____ \$ 750 - 999 (d)	16 _____ \$ 3750 - 3999 (p)
05 _____ \$ 1000 - 1249 (e)	17 _____ \$ 4000 - 4249 (q)
06 _____ \$ 1250 - 1499 (f)	18 _____ \$ 4250 - 4499 (r)
07 _____ \$ 1500 - 1749 (g)	19 _____ \$ 4500 - 4749 (s)
08 _____ \$ 1750 - 1999 (h)	20 _____ \$ 4750 - 4999 (t)
09 _____ \$ 2000 - 2249 (i)	21 _____ \$ 5000 - 5249 (u)
10 _____ \$ 2250 - 2499 (j)	22 _____ \$ 5250 - 5499 (v)
11 _____ \$ 2500 - 2749 (k)	23 _____ \$ 5500 - 5749 (w)
12 _____ \$ 2750 - 2999 (l)	24 _____ \$ 5750 - 5999 (x)
	25 _____ \$ Over - 6000 (y)

How far did you go in school?

1 _____ None
2 _____ Did not go to school but can read and write well.
3 _____ Less than 5 grades
4 _____ 5-8
5 _____ 9-12
6 _____ Some college
7 _____ College degree

What is your age?
_____ Years

Have you or any in your household been to any meetings or taken part in any programs of either of these centers? (Closest named.)

_____ No
_____ Yes

If YES: What, when and how often? _____

Do you belong to any clubs or other organizations, such as PTA, unions, lodge, VFW, or hunting groups?

_____ No
_____ Yes

If YES: What ones do you belong to? _____

If you had the opportunity to get some job training, what job would you like to train for? (Record answer verbatim.)

Do you visit or talk with anyone in this neighborhood fairly often and regularly?

_____ No
_____ Yes

If YES: Name the three or four with whom you talk or visit most often.

Persons Visited		Code Sequence	
_____	0	_____	None
_____	1	_____	One
_____	2	_____	Two
_____	3	_____	Three
_____	4	_____	Four or more

About how often do you have such talks or visits?

_____ once a month or less
_____ more than once a month, but less than every two weeks
_____ once every two weeks to four days
_____ every two or three days
_____ every day

Last year, did you get any income from: (Read list below.)

_____ Farming
_____ Unemployed Fathers (Work Experience Training)
_____ Aid to Dependent Children
_____ Public Assistance
_____ Government Pensions
_____ Your Job
_____ Other (specify) _____
_____ Any combination of a 1 and a 3 (Be sure to check each one mentioned.)

At what age should you allow a child to quit school? _____ Age

How much schooling do you think a son of yours ought to get? (If respondent doesn't have a son, then ask same question but substitute, "If you had a son,").

_____ Years (Elementary)
_____ High School
_____ College

How much schooling do you think a daughter of yours ought to get? (If respondent doesn't have a daughter, ask same question but substitute, "If you had a daughter,").

_____ Years (Elementary)
_____ High School
_____ College

What do you think is the ideal number of children for the average couple today?

_____ Number

If you had been feeling bad and thought you needed a checkup, where would you go? _____

If a member of your family were sick and you felt you needed some advice on whether or not to take him or her to a doctor, who would you ask? (Specify if neighbor, relative, etc.)

INTRODUCTION: Different people see life differently. I am going to make some statements which show some of these ways of looking at life. From the way you feel about things, would you please say Yes or No to the following statements? (Interviewer: Do not encourage "Don't know" responses, although they should be noted whenever necessary. Check in appropriate space.) There are no right or wrong answers. What we want to know is how you feel.

	Yes	No	Don't know
Sometimes I feel all alone in the world.	_____	_____	_____
Today's children face a wonderful future.	_____	_____	_____
Sometimes I have the feeling that other people are taking advantage of me.	_____	_____	_____
Real friends are as easy as ever to find.	_____	_____	_____
It is frightening to be responsible for the raising of a little child.	_____	_____	_____
Everybody can do at least a little something that will help prevent another world war.	_____	_____	_____
Most people today seldom feel lonely.	_____	_____	_____
The world in which we live is, in general, a friendly place.	_____	_____	_____
There are so many things that have to be decided these days that sometimes I feel that I just can't take it any longer.	_____	_____	_____
You can depend on most people these days.	_____	_____	_____
There is little chance for a man to get a better job unless he gets lucky.	_____	_____	_____
It is hard to find freinds these days, even if a person tries to be a friend.	_____	_____	_____
We're told so much what to do these days that there's not much room for choice even in personal matters.	_____	_____	_____
People really aren't very friendly.	_____	_____	_____
The future looks dark and gloomy.	_____	_____	_____
I don't get to visit friends as often as I'd really like.	_____	_____	_____

Do you belong to a church?

_____ No
_____ Yes

If answer to the above is NO, ask:
Do you attend some church:

_____ No
_____ Yes

If answer to the above is YES, ask:
What church _____

AND

How often do you attend services?

_____ Never
_____ Less than once a month
_____ One or two times a month
_____ Once a week or more

Do you take any newspapers, or does anyone in the family read newspapers and tell you what they read?

_____ Take one or more
What papers and/or where published

_____ Don't take one, but _____ (specify neighbor,
member of family, etc.) reads one regularly and tells me about it.

What paper? _____

_____ Do not see any paper

If respondent TAKES A PAPER, ask:
Do you read the newspaper fairly regularly?

_____ No
_____ Yes (Check "yes" here if respondent takes and reads more than
one paper regularly.)
_____ If YES: What parts of the newspaper do you usually read?

Do you have a radio that is in working order?

_____ No
_____ Yes

If YES: What are your favorite programs? _____

How many hours a week would you say you spend listening to the radio:

_____ Hours

Do you have a TV set that is in working order, or do you see someone else's TV regularly?

_____ None
_____ TV in home How long have you owned a TV set? _____
_____ See someone else's TV regularly If so: Where do you watch
it (neighbor, relative, etc.)? _____

Does anyone else in your family watch it?

_____ No
_____ Yes

If YES: Who? _____

IF TV IN HOME OR WATCH SOMEONE ELSE'S

What are your favorite programs? _____

How many hours a week would you say you watch TV? _____

Does anyone in the family very often see the news program on TV?

_____ Seldom or never see TV (news or other programs)
_____ Yes/station or programs _____
_____ Watch TV, but seldom or never see news

Do you take any magazines, or does anyone in the family read magazines regularly and tell you about them?

_____ Take magazines
_____ Check only if respondent takes and reads
more than one magazine
Names of magazines: _____
_____ Don't take magazines, but _____ reads
them and tells me about them
_____ Don't take magazines and seldom or never see them

Do you have a car that you use regularly?

_____ Yes, car in family
_____ No car but have regular use of someone else's car

If USE SOMEONE ELSE'S CAR: How often do you use someone else's car?

_____ No car available

How often do you go to town?

_____ Almost every day
_____ 3 or 4 times a week
_____ 1 or 2 times a week
_____ 2 or 3 times a month
_____ Once a month
_____ 2 or 3 times a year
_____ Seldom or never

How many times have you been in a big city such as Lexington, Louisville, Knoxville, Ohio cities, etc.?

_____ Number of times

Name a U.S. Senator from Kentucky.

(write in)

Can you tell me who is governor of Kentucky now?

(write in)

Who is the county judge in this county?

(write in)

INTRODUCTION: In the following 20 questions, indicate whether you agree, disagree, don't know or are undecided.

	Agree	Disagree	Don't Know
In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.	_____	_____	_____
My blood boils whenever a person stubbornly refuses to admit that he's wrong.	_____	_____	_____
There are two kinds of people in this world: those who are for the truth and those who are against the truth.	_____	_____	_____
Most people just don't know what's good for them.	_____	_____	_____
Of all the different philosophies which exist in this world there is probably only one which is correct.	_____	_____	_____
The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.	_____	_____	_____
The main thing in life is for a person to want to do something important.	_____	_____	_____
I'd like it if I could find someone who would tell me how to solve my personal problems.	_____	_____	_____
Most of the ideas which get printed nowadays aren't worth the paper they are printed on.	_____	_____	_____
Man on his own is a helpless and miserable creature.	_____	_____	_____
It is only when a person devotes himself to an ideal or cause that life becomes meaningful.	_____	_____	_____
Most people just don't give a "hang" for others.	_____	_____	_____
To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.	_____	_____	_____

	Agree	Disagree	Don't Know
It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.	_____	_____	_____
The <u>present</u> is all too often full of unhappiness. It is only the <u>future</u> that counts.	_____	_____	_____
The United States and Russia have just about nothing in common.	_____	_____	_____
In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.	_____	_____	_____
While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.	_____	_____	_____
Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.	_____	_____	_____
It is better to be a dead hero than to be a live coward.	_____	_____	_____
Do you ever talk about current events, public affairs, or politics with any of the following people:			

- a. Friends
 - _____ Yes
 - _____ No
- b. Children
 - _____ Yes
 - _____ No
- c. Wife
 - _____ Yes
 - _____ No
- d. Anyone at community center
 - _____ Yes
 - _____ No
- e. Other
 - _____ Yes
 - _____ No

Do you think that quite a few of the people running the government are a little crooked, not very many are, or do you think hardly any of them are?

_____ Quite a few are
 _____ Not very many are
 _____ Hardly any are

Do you think that people in the government waste a lot of the money paid in taxes, waste some of it, or don't waste very much of it?

_____ Waste a lot
_____ Waste some
_____ Don't waste very much of it

How much of the time do you think you can trust the government in Washington to do what is right--just about always, most of the time, or only some of the time?

_____ Just about always
_____ Most of the time
_____ Some of the time

Do you feel that almost all of the people running the government are smart people who usually know what they are doing, or do you think that quite a few of them don't know what they are doing?

_____ Almost all know what they are doing
_____ Quite a few don't seem to know what they are doing
_____ Don't know

Would you say the government is pretty much run by a few big interests looking out for themselves or that it is run for the benefit of all the people?

_____ Run by a few big interests looking out for themselves
_____ Run for the benefit of all
_____ Don't know

Do you own (including buying) or do you rent?

_____ Own
_____ Rent (How much is it per month? _____)
_____ Rent free

Running water?

_____ Yes
_____ No

Toilet facilities?

_____ No
_____ Yes
If YES:

_____ Inside flush toilet?
_____ Outside privy?

Telephone?

_____ No
_____ Yes

Electricity?

_____ No
_____ Yes

INTRODUCTION: Now for the next few questions, I would like to ask your opinion on a few things. (Interviewer: Allow plenty of time and encourage responses but do not suggest answers.)

What are the biggest problems that people like yourself face in life?

What do you think people like you can do to help solve such problems?

If you were the director of a government center (CAP Community Center) for this neighborhood, what would you do in order to make things better around here?

What would you try to get done if you were the county judge for Knox County?

If you were governor of Kentucky, what are the most important things you would like to do?

Suppose you were elected President of the United States, what are the most important things you would do first?

If for some reason you could not live in the United States, what other country would you choose to live in?

Whether or not respondent names a country ask: Suppose I could tell you anything that you wanted to know about this other country--what two questions would you be most interested in asking?

~~ECONOMIC~~ PROGRESS IN AN APPALACHIAN
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UNIT 2
LOWNDES F. STEPHENS

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