Components and causes of rural poverty in Arizona

COMPONENTS AND CAUSES OF RURAL POVERTY IN ARIZONA

by

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ABSTRACT

The data analyzed in this study is designed to give a better understanding of the magnitude of the components and causes of rural poverty in Arizona. Data is presented for the rural population, including Spanish-Americans and Indians, at the state, regional, and county levels to show change in rural conditions between 1960 and 1970.

Information on various components of rural poverty--income, employment, housing, and health--indicate that over 20,000 rural families were in poverty in 1970 and that the incidence of poverty was greater in Arizona's rural areas than urban centers. Economic conditions of the Spanish-Americans, and especially the Indians, were much poorer than those of the rural population in general though the nonminority poor outnumber the minority poor by more than two to one.

The magnitude of several causes of rural poverty are also presented, including low level of education, age, slow out-migration, cultural characteristics, poor medical services, and factors related to farm poverty such as declining relative farm prices and the inefficiency of small farms. The incidence and level of several of these causes is shown to be substantially greater than is the case in urban areas.

This thesis is concluded by presenting policy implications to each component and cause with a short summary of the relevance of current programs in meeting the development needs of Arizona's rural residents. Suggestions for future research are also given.

CHAPTER I

INTRODUCTION

Current interest in rural poverty in Arizona has been stimulated by an increasing awareness of the problem by the State government, the availability of new federal funds for development and research projects, action of minority interest groups, and by the citizenry in general. Although all of these groups express concern for the rural poor and in several cases are funding programs to mitigate Arizona's rural poverty,[1] there is no statement which adequately documents[2] the magnitude and causes of rural poverty in the state.[3]

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1. In fiscal year 1970, outlays for improving non-metropolitan counties in the U.S. totaled $39.6 billion, or approximately 12.6 percent of all federal expenditures for that year. These funds were allocated to four general areas: human resource development, community development, agriculture and natural resources, and defense. For a closer analysis, see U.S. Department of Agriculture, The Economic and Social Condition of Rural America in the 1970's, Economic Research Service, Part 3, (Washington, D.C.: U.S. Government Printing Office, Dec. 1971), pp. 14-31. In addition to this financial effort to improve rural conditions on a national level, the states are taking an active part in analyzing and publicizing their rural conditions. For example, surveys of living conditions and community resources in Arizona communities are being taken by the Extension Community Resource Development specialists, County Rural Development Committee members, and the Department of Economic Planning and Development.

2. At the national level, The President's National Advisory Commission on Rural Poverty, The People Left Behind, (Washington, D.C.: U.S. Government Printing Office, Sept. 1967), has documented the level of the components and causes of rural poverty.

3. Basic definitions of poverty, rural, urban, farm-nonfarm are presented in Appendix I.

Objective of the Research and Hypotheses to be Tested

Objective

Given the increase in awareness of rural poverty, state, regional, and county planners and researchers are in need of reliable and accurate statistics concerning the components and causes of rural poverty in Arizona. The primary objective of this study is to augment the information base currently available by collecting, compiling, and analyzing secondary data pertaining to these components and causes. This will be done primarily by presenting data on rural poverty for two time periods, 1960 and 1970, for state, region and county aggregates, and by minority subgroups. To provide this information and guide the study, the following hypotheses will be tested.

Hypotheses Related to the Components of Rural Poverty[4]

1. The amount and degree of rural poverty is greater than urban poverty, has changed over time, and differs among counties, regions, and ethnic groups.

2. The number of low-production farms has increased since 1959 and varies among counties and regions.

3. The amount and degree of rural unemployment is greater than urban unemployment, has changed over time, and differs among counties, regions, and ethnic groups.

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4. The hypotheses are presented as testable statements and are not preconceived notions of the way things actually are.

4. Rural housing conditions are poorer than urban housing conditions, have changed over time, and differ among counties, regions, and ethnic groups.

5. Rural health conditions are poorer than urban health conditions, have changed over time, and differ among counties, regions, and ethnic groups.

Hypotheses Related to the Causes of Rural Poverty

1. The level of rural educational attainment is less than urban attainment, has changed over time, and differs among counties, regions, and ethnic groups.

2. The tendency of rural nonfarm residents to migrate is less than for any other segment of the population and varies among ethnic groups.

3. The mobility of farm families is less than other segments of the population and varies among counties, regions, and ethnic groups.

4. The age of rural residents is greater than that of urban residents, has changed over time, and varies among counties, regions, and ethnic groups.

5. Cultural characteristics related to economic productivity of Arizona's minority ethnic groups are more restricting than those of the Anglo culture.

6. Rural health services are poorer than urban health services, have changed over time, and differ among counties, regions, and ethnic groups.

7. Farm poverty has been caused by a relative decline in farm product prices, the inability of small farmers to realize important returns-to-farm size, immobility of farm people, and the inability of Federal farm programs to cope with the farm poverty program.

Methodology

A theory of economic development, and particularly the economic development of rural poor in developed countries, is not well developed. Bits and pieces of the literature which relate to the components and causes of rural poverty are available, however. Thus, the "framework" within which the objective of this research is met is not rigid. Rather, the literature relating to the components and causes of rural poverty is reviewed and used to suggest the hypotheses summarized in the previous section. These are then tested by confronting them with secondary data, primarily from the 1960 and 1970 census. Publications of other U.S. Government agencies such as the Bureau of Indian Affairs, Employment Security Commission, and the Office of Economic Opportunity were also used.

Since most of the data is for the population, no statistical tests of significance are needed to test the hypotheses. Rather, they are tested directly by simply comparing the data for different counties and regions of the state, urban-rural residence, minorities, and periods of time. Where appropriate, the coefficient of variation will be given to indicate the degree-variance of each characteristic among counties.

Organization of the Thesis

A review of the literature which establishes the components and causes of rural poverty is presented in Chapter II.

In Chapter III, data on each component are presented for different time periods for the state, counties, regions, and minority groups. This same format is maintained for the causes of rural poverty presented in Chapter IV.

Chapter V summarizes the data of Chapters III and IV by presenting a test of the hypotheses related to the components and causes of rural poverty.

Chapter VI concludes the thesis by giving policy implications and suggestions for future research.

CHAPTER II

COMPONENTS AND CAUSES OF RURAL POVERTY: A REVIEW OF THE LITERATURE

A brief review of the literature on the components and causes of rural poverty is presented in this chapter. This review was used to suggest the hypotheses presented in the Introduction and hence as a "guide" to the research. A summary of the literature on the components of rural poverty is presented first, followed by a summary of the literature on the causes of rural poverty.

Components of Rural Poverty

Economic theory and the literature[1] suggest various components of rural poverty: the level and distribution of income, the number of

1. As reported in the President's National Advisory Committee on Rural Poverty, The People Left Behind, these factors were viewed as the primary ingredients of the U.S. rural poverty problem. Also at the aggregate level, Hugh Nourse states that, " . . . chronic unemployment above the national average has been used as a definition by several Federal acts providing funds to help depressed areas." He also mentions that poor housing, nutrition, and schooling are important parts of the poverty matrix. Hugh Nourse, Regional Economics, (New York: McGraw-Hill, 1968), pp. 232-235. For Arizona, these same factors were among the more important ones mentioned in a survey of rural people. See Clarence D. Edmond, Surveys by Extension Community Resource Development Specialists and County Rural Development Committee Members, Cooperative Extension Service, (Tucson: University of Arizona, October 1971). Further studies documenting these components are: Arley D. Weldo, "Rural Development and Welfare of the Rural People," Department of Agricultural Economics, Staff Paper P70-15, (St. Paul: University of Minnesota, July 1970), pp. 2-6; Thomas L. Hady, "Dimensions of Rural Housing Problems," Communities Facilities Branch, ERS, U.S. Department of Agriculture, (Washington, D.C.: U.S. Government Printing Office, Nov. 1970); U.S. Department of Agriculture, Rural Manpower Dilemmas, 1971 Manpower Report of the President, (Washington, D.C.: U.S. Government Printing Office, 1971), pp. 113-120 and 132-135.

low-production farms, the amount and degree of rural unemployment, rural housing conditions, and rural health characteristics are among the most important.

Income

It would be difficult to select any one factor as being the most important, though income levels provide the easiest means of separating poor from nonpoor. Weighted average thresholds for low income families for 1970 as established by the Social Security Administration in 1964 and later modified by a Federal Interagency Committee[2] are shown in Table 1. The thresholds (see Table 1 for a definition of threshold) allow for differences in the cost of living between farm and nonfarm families by setting the poverty thresholds for farm families at 85 percent of the corresponding levels for nonfarm families.[3]

Low-Production Farms

In farming, low levels of production may be indicative of low[4] income levels. Low-production farms for this research will be defined

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2. For a detailed explanation of the poverty definition, see the U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Revision of Poverty Statistics, Series P-23, No. 28, (Washington, D.C.: U.S. Government Printing Office, 1959-68).

3. This farm-nonfarm threshold variation is the only attempt to adjust for location differences in costs of living. As yet, no effort has been made to allow for regional, state, or local variations in the cost of living. See J. Patrick Madden, "Poverty Data in Relation to Other Indicators of Social Welfare," (paper presented at the American Sociological Society meetings, Denver, Col., Aug. 30, 1971, mimeographed).

4. An area with a high proportion of low-production farms does not necessarily produce a low income level for that area, but a large concentration of such farms where they are the major source of revenue can result in low area income. See Dale E. Hathaway, Government and Agriculture, (New York: MacMillan Company, 1963), p. 167.

Table 1. Weighted Average Poverty Thresholds[a] by Size of Family, Sex of Head, Farm and Nonfarm Residence, U.S., 1969.

Size of Family	Total	Nonfarm			Farm		
		Total	Male[b] Head	Female[b] Head	Total	Male[b] Head	Female[b] Head
All Unrelated Individuals	$1947	$1954	$2044	$1898	$1651	$1697	$1662
Under 65 yrs.	2005	2010	2092	1935	1727	1778	1644
65 yrs. & over	1852	1861	1879	1855	1586	1597	1576
All Families	3580	3601	3640	3305	3147	3164	2845
2 persons	2507	2525	2534	2471	2131	2138	2036
Head under 65 years	2569	2604	2619	2522	2218	2225	2104
Head 65 yrs. and over	2328	2348	2349	2336	1994	1996	1972
3 persons	3080	3099	3113	3003	2628	2635	2511
4 persons	3944	3068	3970	3948	3385	3387	3345
5 persons	4654	4680	4684	4639	4000	4002	3963
6 persons	5212	5260	5263	5220	4490	4491	4441
7 persons or more	6407	6468	6486	6317	5518	5521	5472

[a]The word threshold here refers to the income level which divides poor individuals and families from those not poor.

[b]For Unrelated Individuals, male or female head relates to sex of the individuals.

Source: U.S. Department of Commerce, Bureau of the Census, 1970 Arizona Census of Population, General Social and Economic Characteristics PC(1)-C4, Appendix 30, Washington, D.C., U.S. Government Printing Office.

as those with annual sales of agriculture products of less than $20,000. However, it should be recognized that part-time and part-retirement farms are not counted in this definition of low-income farms.[5]

Unemployment

Unemployment may be considered either a component or cause of rural poverty. Unemployment, as Clawson points out,[6] has caused hardship for many rural people, especially those lacking in skills and training necessary to obtain jobs in other areas or segments of the economy. Their basic education is usually poor, contact with nonfarm employers deficient, and their knowledge of where to look and what to look for in nonfarm employment is inadequate.

Housing

Rural housing[7] has been termed "an urgent need" by the President's Task Force on Rural Development and further states that rural housing

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5. Farms with a value of sales of farm products of $50 to $2,499 are classified as "part-time" if the operator is under 65 years old and he works off the farm 100 or more days. Farms with a value of sales of farm products of $50 to $2,499 are classified as "part-retirement" if the farm operator is 65 years old or over. Many of these are farms on which the income from nonfarm sources is greater than the value of sales of agricultural products. U.S. Department of Commerce, Bureau of the Census, 1964 Arizona Census of Agriculture, I, Part 4, (Washington, D.C., U.S. Government Printing Office), p. A13.

6. Marion Clawson, Policy Directions for U.S. Agriculture, (Baltimore: John Hopkins Press, 1968), pp. 48-49.

7. "There is some evidence that the housing of one-third to one-half of all commercial farmers is probably worse now than 25 years ago in that few houses have been built and many old houses have not been properly maintained, much less upgraded." Ibid. Also, Hady, "Dimensions of Rural Housing Problems."

conditions[8] are an important component of rural poverty. Good housing tends to invite people and development to an area and encourage the pride of a community.

Health

Health status is commonly recognized as an important component of peoples' standard of living. The President's Task Force,[9] for example, pays particular attention to the poor health characteristics of our nation's rural poor.

Low incomes and high costs due to population sparsity limit the amount and quality of health care received by people in rural areas.[10] The fewness of people per square mile and low incomes can be translated into unprofitability of private rural medical practice and the result is usually reflected in much poorer rural health conditions and services than is found in urban areas.[11]

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8. The President's Task Force on Rural Development, A New Life for the Country, (Washington, D.C.: U.S. Government Printing Office, March 1970), p. 37.

9. Ibid.

10. U.S. Department of Agriculture, Rural People in the American Economy, Economic Research Service, Ag. Econ. Report No. 101, (Washington, D.C.: U.S. Government Printing Office, Oct. 1966), pp. 26-30.

11. These same causes were among the most important mentioned by Luther G. Tweeten, Rural Poverty: Incidence, Causes, and Cures, Dept. of Agricultural Economics, Processed Series P-590R, (Stillwater: Oklahoma State University, July 1968), pp. 13-40. Further sources documenting these causes are: The President's National Advisory Commission on Rural Poverty, The People Left Behind and Iowa State University Center for Agricultural and Economic Development, Benefits and Burdens of Rural Development, (Ames: Iowa State University Press, 1970), pp. 198-199.

Causes of Rural Poverty

Education

The impact of education on earning capacity has perhaps received the most attention as a cause of poverty.[12] Gary Becker's work[13] on education as an important part of human capital provided theoretical groundwork in establishing education as a determinant of income levels. Wilbur and Spitze[14] point out that a low level of education or training is an indicator of poverty and that a lack of education may lead to

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12. Clawson, Policy Directions, pp. 24-29. Tweeten, Rural Poverty, p. 31 states that, "Attitudes of poverty areas toward education are especially important because education imparts productive skills which affect income and imparts attitudes to the new generation. It is one of the few opportunities to intervene in the cycle of parent-child attitude. Education is one of the few socially acceptable ways of altering attitudes enimical to economic growth. It is the major cultural bridge between a poverty area and the mass achievement oriented society."

13. This relationship has been brought out in several research and policy implications. See Gary S. Becker, Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education, (New York: National Bureau of Economic Research, 1964), p. 75. George L. Wilbur, Determinants of Poverty, Social Welfare Research Institute, (Lexington: University of Kentucky, Aug. 1971), points out that a low level of education or training is an indicator of poverty and that the lack of education may lead to unemployment or underemployment and consequential low incomes. Zvi Griliches, "Research Expenditures, Education and the Aggregate Agriculture Production Function," The American Economic Review, LIV, No. 6 (Dec. 1964), pp. 961-974, conducted an extensive analysis of education and its relationship to agriculture. Through his work he estimated that the marginal product of education in U.S. agriculture was around 1.30. This means that for each unit of education utilized in agricultural production, 1.3 additional units of output are produced.

14. Wilbur, Determinants of Poverty; R. G. F. Spitze, "Obstacles to Rural Human Research Development," Department of Agricultural Economics, (Urbana, University of Illinois, 1969), p. 10.

unemployment or underemployment and consequential low incomes. Griliches[15] has done important empirical studies on the impact of education on productivity in U.S. agriculture and found that the marginal returns to investments in education are high.

Age

Age has been given as a cause of rural poverty especially among the rural farm population. It has a very direct effect on one's ability to move as times and conditions change. There is considerable evidence that the farm poor have a very small tendency to withdraw from farming even under considerable economic pressure and age factors.[16]

Migration

The lack of migration[17] from rural areas has also been given as a cause of rural poverty.[18] This has been especially evident among the older rural farm segment of the population. The younger portion of the

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15. Griliches established a ratio of mean incomes for U.S. males by school categories between 1939 and 1966. For elementary school graduates the ratio was 1.41 and for college graduates it jumped to 1.65. This means that on the average, each dollar invested in education by the college graduate would generate a return of $1.65 compared to $1.41 for elementary school graduates. Zvi Griliches, "Notes on the Role of Education in Production Functions in Growth Accounting," Department of Economics, (Chicago: University of Chicago, May 1968).

16. Luther G. Tweeten, Foundations of Farm Policy, (Lincoln: University of Nebraska Press, 1970), p. 249.

17. Migration in this research relates to moves from one part of the state to another or from one state to another state or vice versa.

18. C. E. Bishop, "Agricultural and Economic Development," Agricultural Extension Service, (Blacksburg: Virginia Polytechnic Institute, July 1964), p. 33. Also see The President's National Advisory Commission on Rural Poverty, Rural Poverty in the United States, (Washington, D.C.: U.S. Government Printing Office, May 1968), pp. 210-214.

rural population does not have a deep commitment to agriculture. They are more readily employable elsewhere. The older portion, on the other hand, have spent years in agriculture, know no other occupation, and at an age where job opportunities are often closed elsewhere, prefer or have little choice but to stick it out on the farm.[19] After the middle twenties, the frequency of movement diminishes with age until age 65 and over when only 7 to 9 percent of the people move annually.

Cultural Background

A "culture of poverty" is also cited as a cause of low standards of living. Bishop[21] suggests that those living in poverty develop a culture of their own, and that this culture reduces a person's ability to change--even when our dynamic society rewards change. In Arizona,[22]

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19. Clawson, Policy Directions, p. 45.

20. U.S. Department of Agriculture, The Economic and Social Condition of Rural America in the 1970's, Economic Research Service, Part 3, (Washington, D.C.: U.S. Government Printing Office, Dec. 1971), pp. 14-15.

21. Bishop, "Agricultural and Economic Development," pp. 31-35. Also see The President's National Advisory Commission on Rural Poverty, The People Left Behind, pp. 8-9 which states that, "There is such a thing as a culture of poverty. Many undeveloped people have developed a culture of poverty . . . they think differently, they have a different sense of values." Tweeten, Rural Poverty, p. 19, also lists the culture of the people as being an important part of their ability to adjust to changing economic conditions.

22. See Employment Security Commission of Arizona, Manpower Services to Arizona Indians, 1970, Research and Information Series No. OPR-2-70, (Phoenix: Arizona State Employment Service, June 1970), pp. 11-12, for a comparison of the modern American industrial values and the Indian and Spanish-American values.

some authors believe that the cultures of Spanish-Americans and Indians have inhibited their economic development.

Medical Services

A shortage of health facilities and medical personnel is also a cause of poor standards of living in rural areas, and likely influences the productiveness of rural people. Rural medical facilities frequently lack sufficient personnel, have poor equipment, and lack out-patient and extended care facilities.[23]

Causes of Rural Farm Poverty

Farm poverty, of which low-production farms are a significant part,[24] is surrounded by several elements which may be specified as "causes" of the problem: (1) the nature of the demand for farm products, (2) rapid rates of technological change which increase the productivity of certain inputs, (3) the relatively high degree of asset fixity which reduces resource mobility from the industry, and (4) the effect of federal farm programs on low-production farms and the rural poor.

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23. U.S. Department of Agriculture, Economic and Social Condition, p. 78. Also see the President's Task Force on Rural Development, A New Life for the Country, pp. 37-39.

24. The Census of Agriculture classifies farms into six classes ranging from Class I with $40,000 worth of products sold annually to Class VI with less than $2,500 of annual product sales. Farms not classified in these six categories were defined as part-time, part-retirement, or abnormal. In this work, low-production farms will include only Class III, IV, V, and VI farms. See also, Chapter III, page 32 on low-production farms or U.S. Department of Commerce, 1964 Arizona Census of Agriculture, p. A13, for a definition of each class and category of farms.

The Nature of Demand For Farm Products. Although statistical studies vary in their results due to the time period and method used, it appears that the price elasticity of demand for farm products for the agriculture industry as a whole at the farm level is between .15 and .25 with a slow downward trend over time. The price elasticity of demand at the farm level for domestic food has been estimated to be .23 and about .34 at the retail level.[25] The implication is that the marginal utility of additional farm products is quite low to U.S. consumers and as a consequence, farm incomes tend to be depressed as supplies of farm products increase.

Farm output has tended to increase as more and more profitable and productive inputs have been introduced over time. In fact, the supply of farm commodities has tended to shift rather rapidly to the right. This would not cause farm incomes to decline if the demand for farm products were moving rapidly to the right or if demand were highly elastic. But this is not the case. Not only does elasticity of demand for farm products in the aggregate tend to be low and inelastic but changes in U.S. population, tastes and preferences, the development of new uses for farm products, export demand, and the level of consumer

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25. A summary of price and income elasticities for various farm products can be found in George Brandow, Interrelations Among Demands for Farm Products and Implications for Control of Market Supply, Agricultural Experiment Station Bulletin 680, (University Park: Pennsylvania State University, August 1961), Tables 1 and 10. Also see Tweeten, Foundations of Farm Policy, pp. 199-203.

income[26] have not shifted demand as rapidly as shifts in the supply of farm products. Thus farm product prices and incomes have often lagged behind general price levels and nonfarm incomes.

Technological Change. Increasing the size of production units in an effort to secure economies of size through specialization and utilization of changing technological advancements are the most common attempts to improve the individual profit margins. Hybrid seeds, new pesticides, herbicides, fertilizers, and mechanical planting, tilling, and harvesting advances are common forms of this changing technology. The impact of economies of size and scale have been substantial, and for the small farmer unable to adjust to large-scale technologies, the result has been to worsen his relative net income position. In fact, an analysis of 1965 data indicates that on the average, farms producing less than approximately $30,000 experienced large net losses (see Figure 1).

Besides increasing firm size, technological change has resulted in more capital intensive agriculture and decreased the demand for farm labor. Thus farm workers unable to make the adjustment out of agriculture have often met with underemployment and a declining relative income.[27]

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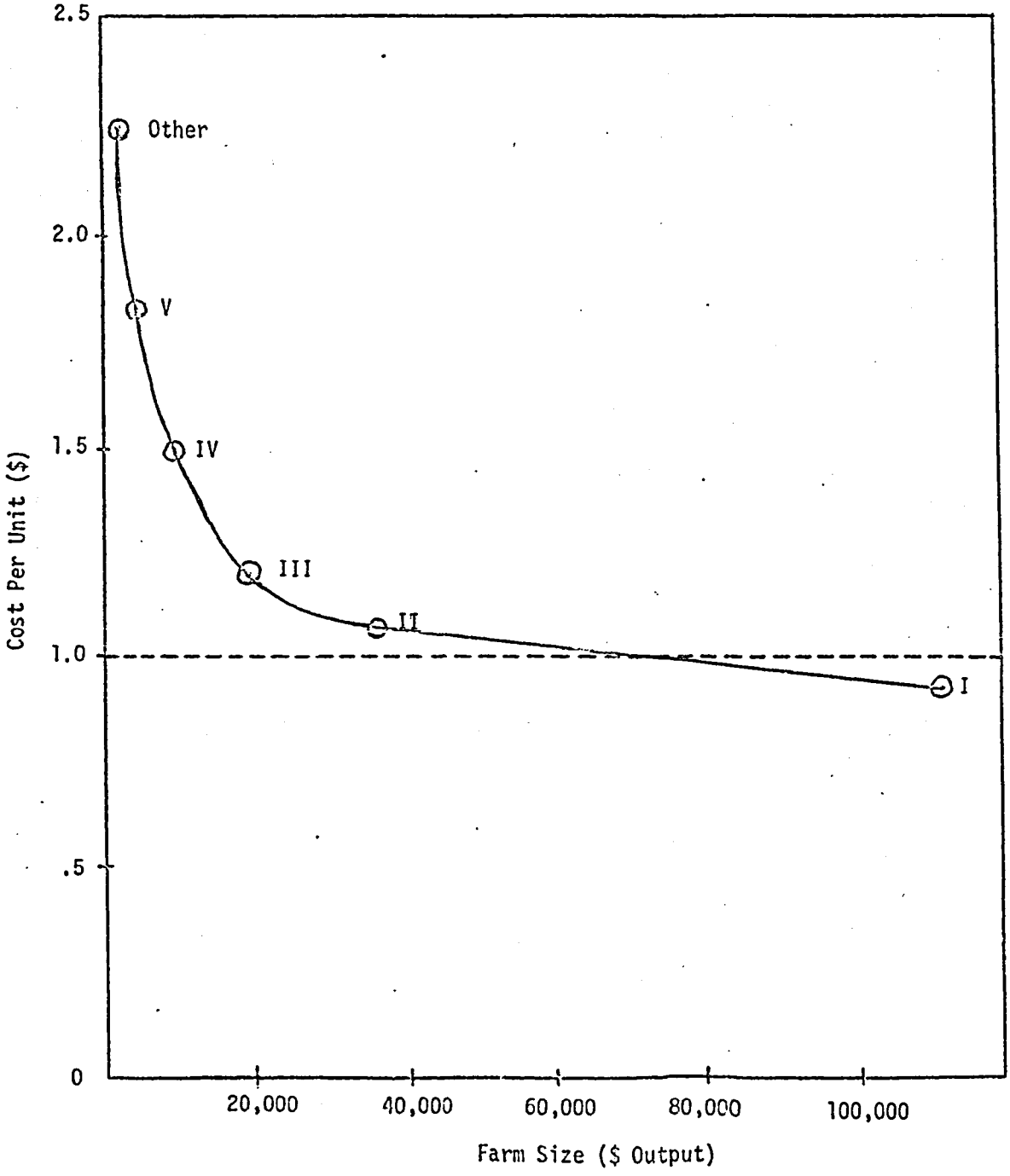
26. Income elasticity for farm products for the entire agriculture industry is somewhere between .15 and .20. In other words, a ten percent increase in consumer income will increase the demand for farm products only 1.5 to 2.0 percent. This means that as consumer income grows, consumers will spend a declining proportion of their income for food and an increasing proportion on nonfood items. Estimates of income elasticity for particular farm products at the farm level may be found in Rex F. Daly, "The Long-Run Demand for Farm Products," Agricultural Economics Research, VIII, No. 3, (July 1956).

27. Ross B. Talbot and Don F. Hadwiger, The Policy Process in American Agriculture, (Ames, Iowa State University Press, 1968), pp. 142-143.



Source: Iowa State University Center for Agricultural and Economic Development, Benefits and Burdens of Rural Development, Iowa State University Press, 1970, p. 43.

Figure 1. Long-Run Cost of Farm Production, By Economic Class of Farms; U.S., 1965.

Finally, the real price of several farm products has been adversely effected by technologically induced shifts in the supply of these products.[28] In cases of low price elasticity of demand, the price depressing effect of increasing supplies has been especially significant--and the producer unable to adopt cost-saving technologies or shift production, has been caught in the price-cost squeeze.

Asset Fixity. The fourth major cause of the agricultural problem involves fixity of farm resources. Specialization of production is much more common in today's agriculture than in earlier years. This is especially true in Arizona with its large specialized farms designed for the production of cotton, fruits and vegetables, grains, hay, cattle, sheep, and cattle feedlots. This type of specialized production leads to a particular set of resources designed specifically for the product being produced. If the market for that particular crop should decline in the short run, it is difficult for the operators to switch to another crop since the machinery and management are designed specifically for the previous production system.

Perhaps the most important asset which becomes fixed for the low-production farmer is his own labor-management resource. Even though returns to his management and labor may be low, his mobility is often limited due to immediate economic factors. The capacity to move or adjust to changing agricultural conditions is believed to be greatest in areas where: (a) birth rates are low; (b) educational levels are high; (c) transportation and communication facilities are adequate; (d) people have a "mobility ethic" fostered by past migration and willingness to

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28. Ibid.

change; (e) the culture of the area is malleable and compatible with that in growth areas to which people must migrate; (f) there are no institutional barriers such as racial discrimination within the region receiving migrants to preclude mobility; and (g) the area is in reasonable proximity to an urban-industrial complex.[29] These conditions are frequently absent in areas of low-production farms.

The Effect of Federal Farm Programs on Low-Production Farms and the Rural Poor. Government programs coupled with technology have brought disadvantages to low-production farmers compared to the larger commercial farmers. Low-production farmers find it more difficult to produce as efficiently and to compete for land as effectively as the commercial farmer. During the years 1962 to 1966, the commodity programs diverted approximately one out of five cropland acres from production. Thus, farms which were of an economically optimum size in the 1962-66 time period needed to expand their size by about 1/5 if they were to take advantage of the government commodity programs. This need to expand the acreage of cropland to maintain an economically efficient unit lead to a very vigorous competition for land among farmers. The ultimate result was that land prices were bid out of reach of the low-production farmers. The fact is, these increased land prices constituted a barrier to entry or expansion through which most marginal farmers could not pass.[30]

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29. Tweeten, Rural Poverty, p. 19.

30. Frey Tyner and Luther G. Tweeten, "Simulation as a Method of Appraising Farm Programs," American Journal of Agricultural Economics, (Feb. 1968), pp. 60-86.

The price support programs also provided substantial additional capital to the commercial farmers which enabled them to further utilize new technologies.

One of the overall effects of increased land prices caused by commodity program initiation has been to make the unit cost curve even more steep (Figure 1). The end result for the marginal farmer is a deteriorating situation in farming relative to larger farmers. He can increase his income only through off-farm sources.[31] For the share-croppers, renters, and hired farm laborers, the resulting effects of federal farm programs are most likely to be economic losses until full time nonfarm incomes are secured.[32]

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31. By turning more to the nonfarm sector to supplement incomes it is argued that the low-production farmers are less vulnerable to changing conditions in the farming industry. Others present the issue that the low-production farmers' absolute position has improved or remained static over time. It is said that due to the small size of their farming operations, the effect of technology and or federal farm programs are more than offset by these same factors increasing the value of their real estate. See Iowa State, Benefits, p. 48.

32. Ibid., pp. 69 and 74.

CHAPTER III

THE COMPONENTS OF RURAL POVERTY IN ARIZONA

Data on the level of various components of rural poverty in Arizona are presented in this chapter. For each component, data are presented to show changes over time, variance among areas within Arizona (state, urban-rural, regions, and counties) and by minority groups (Spanish-Americans and Indians).

Income Levels

State, Regional, and County Aggregates

The first component of poverty to be presented for Arizona's rural population on a state, county, and regional breakdown is the number of residents below the poverty threshold and the change between 1960 and 1970 (Table 2).[1]

Several important characteristics of the rural population stand out in the table. First, the number of rural families has been increasing, though as a percent of all families in the state, they have decreased slightly since 1960.

Secondly, a higher proportion of rural families are below the poverty threshold than are nonrural families. In 1960, 33 percent of all rural families were below the threshold while for all families of

1. See Appendix II for a short review of the rural poverty setting for the nation and Arizona.

Table 2. Poverty Status of Families By Residence; State, Region, and County; Arizona, 1960 and 1970.

County & Region	1970 Total Number Of Families	1970 Percent Of All Families Who Are Poor	1970 Total Number Of Rural Families	1970 Percent Of Rural Families Who Are Poor	1970 Total Number Of Rural Farm Families	1970 Percent Of Rural Farm Families Who Are Poor	1970 Percent Of All Poor Families Who Are Rural	1970 Percent Of All Poor Families Who Are Farm
Region I:								
Pima	87,856	15.9	13,752	15.4	1,154	18.7	15.2	1.6
Maricopa	245,575	13.1	16,580	16.9	2,589	18.7	9.7	1.5
Yuma	14,784	18.1	5,288	24.1	747	18.9	47.6	5.3
Pinal	15,254	21.2	7,740	25.0	1,261	34.1	60.0	13.3
Total: Region I	363,469	14.3	43,360	18.5	5,751	22.1	16.3	2.4
Region II:								
Mohave	7,270	17.2	5,445	19.5	187	13.4	85.0	2.0
Coconino	10,333	20.0	4,792	28.4	584	46.6	65.8	13.2
Yavapai	10,071	23.3	5,858	22.5	487	17.7	56.2	3.7
Total: Region II[c]	27,674	20.5	16,095	23.2	1,258 (1,071)	30.4 (33.4)	66.1	6.8 (6.3)
Region III:								
Navajo	9,738	32.4	6,648	41.2	963	67.9	86.8	20.7
Apache	6,058	43.5	6,058	43.5	700	61.3	100.0	16.3
Gila	7,247	18.8	4,136	19.1	473	12.5	58.0	4.3
Total: Region III[c]	23,043	31.0	16,842	36.6	2,136 (1,663)	53.5 (65.1)	86.2	16.0 (15.1)
Region IV:								
Graham	3,607	19.0	2,286	22.2	459	29.0	74.0	19.4
Greenlee	2,698	10.0	1,451	12.7	89	29.2	68.2	9.6
Cochise	14,866	18.2	4,858	20.7	624	19.7	37.2	4.6
Santa Cruz	3,032	20.9	1,266	14.9	165	16.4	29.8	4.3
Total: Region IV	24,203	17.7	9,861	19.1	1,337	29.2	43.9	9.1
State Total	438,389	15.8	86,157	23.5	10,482	30.4	29.3	4.6

County & Region	1960 Total Number Of Families	1960 Percent Of All Families Who Are Poor	1960 Total Number Of Rural Families	1960 Percent Of Rural Families Who Are Poor	1960 Total Number Of Rural Farm Families	1960 Percent Of Rural Farm Families Who Are Poor	1960 Percent Of All Poor Families Who Are Rural	1960 Percent Of All Poor Families Who Are Farm
Region I:								
Pima	65,347	18.5	7,442	22.6	657	38.1	13.9	2.1
Maricopa	162,697	19.1	19,562	31.7	3,396	35.9	19.9	3.9
Yuma	10,786	20.2	4,032	27.8	753	28.4	51.4	9.8
Pinal	13,536	33.4	7,252	36.2	1,509	47.1	58.0	15.7
Total: Region I	252,366	19.8	38,288	30.3	6,315	37.9	23.3	4.8

Table 2.--Continued.

County & Region	1960							
	Total Number Of Families	Percent Of All Families Who Are Poor	Total Number Of Rural Families	Percent Of Rural Families Who Are Poor	Total Number Of Rural Farm Families	Percent Of Rural Farm Families Who Are Poor	Percent Of All Poor Families Who Are Rural	Percent Of All Poor Families Who Are Farm
Region II:								
Mohave	2,008	23.4	839	31.2	--	--	55.7	--
Coconino	9,331	25.2	3,437	46.9	700	82.6	68.5	24.6
Yavapai	7,542	24.6	4,273	26.6	467	29.8	61.4	7.5
Total: Region II[c]	18,881	24.8	8,549	35.2	(1,167)	(61.4)	64.4	(17.1)
Region III:								
Navajo	7,789	38.8	4,792	55.1	556	74.6	87.4	13.7
Apache	5,409	51.9	5,409	51.9	876	74.5	100.0	23.3
Gila	6,187	23.2	3,185	25.9	--	--	58.7	--
Total: Region III[c]	19,385	37.5	13,386	47.0	(1,432)	(74.6)	86.6	(18.3)
Region IV:								
Graham	3,181	30.0	1,973	34.8	415	29.9	72.0	13.0
Greenlee	2,736	12.7	1,776	14.1	131	22.9	72.1	8.7
Cochise	13,103	21.9	6,985	22.9	658	37.5	54.7	8.6
Santa Cruz	2,384	30.5	808	28.3	191	22.0	31.5	5.8
Total: Region IV	21,404	22.9	11,542	23.7	1,395	31.8	55.9	9.0
State Total - 1960	312,045	21.3	71,765	32.9	10,309	44.8	35.5	7.1

[a]The poverty level in 1960 was set at an income level of $3,000 for this study. The actual poverty threshold in 1960 was $3,037 for a family of four which was computed by deflating the 1970 poverty threshold of $3,944 for a family of four by the appropriate consumer price index for 1960. The poverty threshold varies in relationship to family size, sex of head of household and farm-nonfarm residence. For 1970 the threshold varies from $1,576 for an unrelated female individual 65 years of age or over to $6,486 for a family of seven or more persons with a male head. Poverty thresholds in this table and Table 3 are set at $3,000 and $4,000 for 1960 and 1970, respectively because they closely approximate the average poverty threshold established by the Federal Government, and because of the data breakdown of income given in the census. The census specifies the number of people in each of several thousand dollar income categories; under $1,000; $1,000-$1,999; $2,000-$2,999; etc.

[b]See Appendix III for a more detailed breakdown and comparison of poverty characteristics in Arizona.

[c]The parentheses represent totals excluding data for Mohave and Gila Counties. Rural farm income data was not given for these counties for 1960.

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

the state, some 21 percent were classified as being in poverty. In 1970, these proportions declined to about 24 percent and 16 percent, respectively, but again there was a higher incidence of poverty among rural families. Some 35 percent of all poor families were rural families in 1960, and in 1970, 29 percent of the poor were rural.

Third, only 7.1 and 4.6 percent of all poor families were farm families in 1960 and 1970, respectively.[2]

Fourth, a large portion of the rural farm families were poor. For the state, 35.5 and 29.3 percent of all rural farm families were poor in 1960 and 1970, respectively.

Fifth, in nine of Arizona's 14 counties, over 50 percent of the poor families were also classified as rural families in 1970. Also, only 9.7 percent of the poor of Maricopa County and 15.2 percent for Pima County were classified as rural, while Mohave, Navajo, and Apache poor were mostly rural with 85.0, 86.8, and 100.0 percent, respectively.

Finally, for 1970 in Apache and Navajo Counties, 43.5 and 41.2 percent of the rural families, respectively, were classified as being below the poverty level. This reflects the low income of the large Indian population of these two counties.

To analyze income levels on a regional basis, the state was divided into four quadrants (see Figure 2). Region I consists of Pima, Maricopa, Pinal, and Yuma Counties and contains the large urban populations of the state. Region III includes Mohave, Coconino, and Yavapai

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2. Farm incomes were defined as net money incomes (gross receipts minus operating expenses) received from operation of a farm by a person on his own account, as an owner, renter, or sharecropper, U.S. Department of Commerce, Bureau of the Census, 1970 Arizona Census of Population, General, Social and Economic Characteristics, PC(1)-C4, (Washington, D.C.: U.S. Government Printing Office, 1970), App. 25.

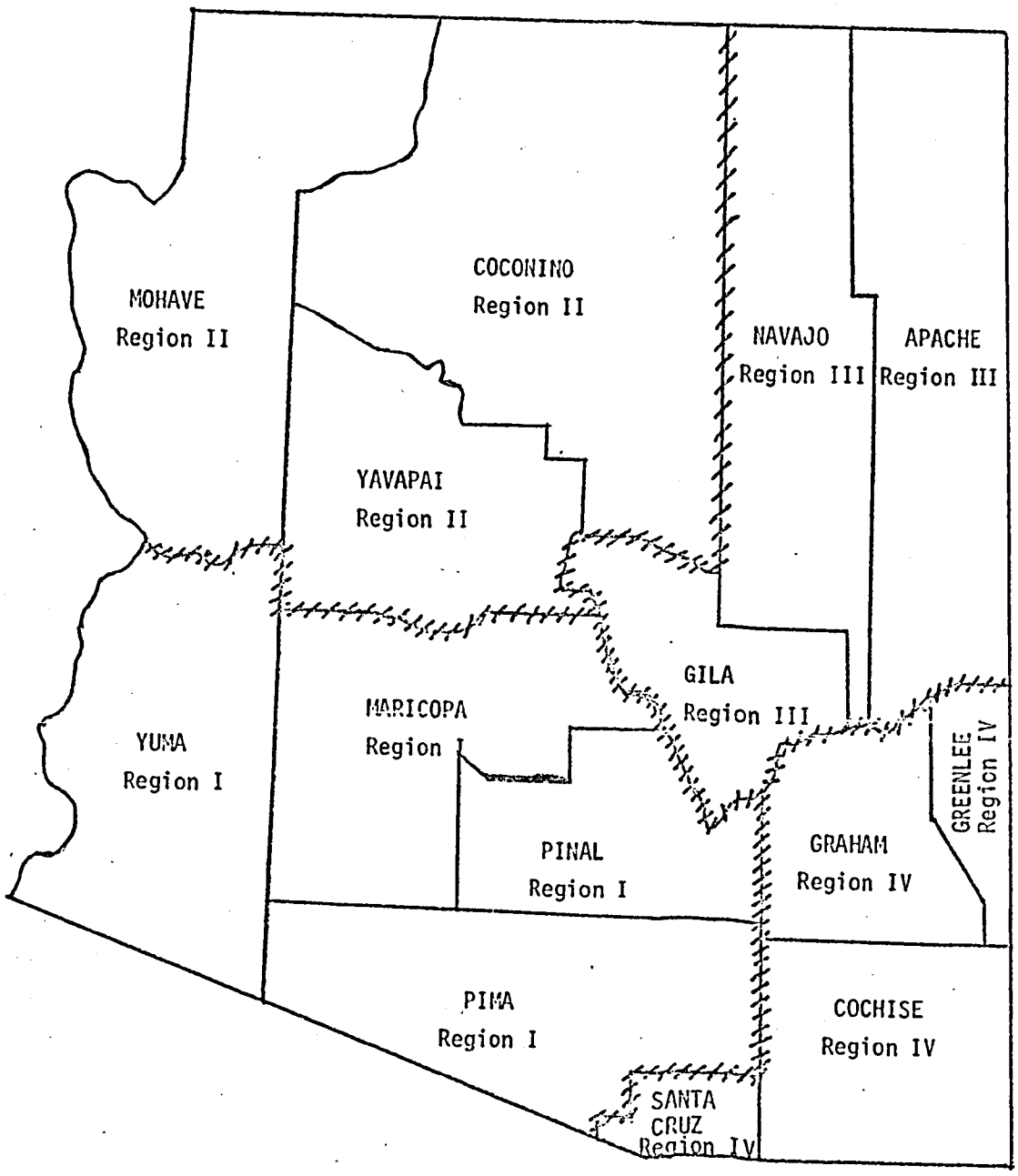

Figure 2. Arizona Counties and Regional Divisions

Table 3. Poor Families[a], Spanish-American[b] and Total, by Residence; Arizona, 1970.

Population Segment	Total Number of Families	Number of Poor Families	Percent of All Families In Each Population Segment That Are Poor	Poor Families As a Percent Of All Families In The State
State Total	438,389	69,144	15.8	15.8
Spanish-American	69,449	14,620	21.1	3.3
Urban Total	352,231	48,888	13.9	11.2
Spanish-American	56,982	11,581	20.3	2.6
Rural Total	86,158	20,256	23.5	4.6
Spanish-American	12,467	3,039	24.4	.7
Rural Nonfarm	75,676	17,160	22.7	3.9
Spanish-American	10,904	2,613	24.0	.6
Rural Farm	10,482	3,096	29.5	.7
Spanish-American	1,563	426	27.3	.1

[a]Complete data was not available to compare the Indian people in this table.

[b]Spanish-Americans are those residents who speak the Spanish language or have a Spanish surname.

Source: 1970 Arizona Census of Population, General, Social and Economic Characteristics, PC(1)-C4.

Table 4. Poverty Status of Spanish-American[a] Families; State, Region, and County; Arizona, 1970.

Region and County	Total Number Of Spanish-American Families	Total Number Of All Families	Spanish-American Families As A Percent Of All Families	Total Number Of Poor Spanish-American Families	Percent Of Poor Spanish-American Families
Region I:					
Pima	17,762	87,856	20.2	3,668	20.7
Maricopa	29,094	245,575	11.8	6,362	21.9
Yuma	3,251	14,784	22.0	634	19.5
Pinal	4,820	15,254	31.6	1,026	21.3
Total: Region I	54,927	363,469	15.1	11,690	21.3
Region II:					
Mohave	412	7,270	5.7	34	8.3
Coconino	1,420	10,330	13.7	220	15.5
Yavapai	1,033	10,071	10.3	301	29.1
Total: Region II	2,865	27,671	10.4	555	19.4
Region III:					
Navajo	1,039	9,738	10.7	183	17.6
Apache	446	6,058	7.4	142	31.8
Gila	1,804	7,247	24.9	208	11.5
Total: Region III	3,289	23,043	14.3	533	16.2
Region IV:					
Graham	832	3,607	23.1	186	22.4
Greenlee	1,276	2,698	47.3	169	13.2
Cochise	4,193	14,866	28.2	984	23.5
Santa Cruz	2,067	3,032	69.2	503	24.3
Total: Region IV	8,368	24,203	34.6	1,842	22.0
State Total:	69,449	438,386	15.8	14,620	21.1

[a]Spanish-Americans refers to those Arizona families speaking Spanish or with a Spanish surname.
Source: 1970 Arizona Census of Population, Gen., Soc., and Econ. Charac., PC(1)-C4.

Counties. Region III is made up of Navajo, Apache, and Gila Counties and its population is mostly Indian. Region IV consists of Graham, Greenlee, Cochise, and Santa Cruz Counties and this region has the highest percentage of its population classified as Spanish-Americans. Regions II, III, and IV are predominately rural in character.

As indicated in Table 2, rural families in poverty decreased in all regions except Region II between 1960 and 1970, both in relative and absolute terms.

Spanish-Americans[3]

Approximately 19 percent of Arizona's 1970 population was Spanish-American. Some 81.1 percent of these were urban dwellers. The Spanish-Americans made up the largest ethnic group in Arizona followed by the Indians which accounted for 5.4 percent of the state's population and the Negroes with 3.0 percent.[4] The heaviest Spanish-American concentrations were in the southern counties of the state including Santa Cruz, Greenlee, Cochise, Pinal, and Gila. By county, Spanish-American families ranged from 69.2 percent for Santa Cruz to 5.7 percent for Mohave County (Table 4).

Poverty data for Spanish-Americans is given in Tables 3 and 4. The proportion of Arizona Spanish-American families who were poor in 1970 was greater than that of the state. In 1970, 15.8 percent of

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3. For this work, Spanish-Americans are those Arizona residents speaking the Spanish language or having a Spanish surname.

4. U.S. Department of Commerce, 1970 Arizona Census of Population, pp. 4-91 and 4-92. Since there were only 305 rural Negro residents below the poverty threshold, they will not be included in this research.

all Arizona families had incomes below the poverty level while 21.1 percent of all Arizona Spanish-American families were poor (Table 3). It should be noted that Spanish-American rural poor made up over 15 percent of the state's total rural poor.

The counties with the largest percentage of poor Spanish-Americans in 1970 were Apache, Yavapai, Santa Cruz, and Cochise Counties (Table 4). Apache, Yavapai, and Santa Cruz Counties were also among the state's five poorest counties. Although the 1970 Census does not provide data on Spanish-American population on a rural and nonrural basis, a high portion of all families in these counties are rural (see Table 2).

A regional breakdown of Spanish-Americans is also given in Table 4. As shown, most Spanish-Americans and most poor Spanish-Americans lived in the urban counties of Region I. Of all poor Spanish-American families, 80 percent lived in these urban counties. In each region, about 20 percent of Spanish-American families were poor.

Indians

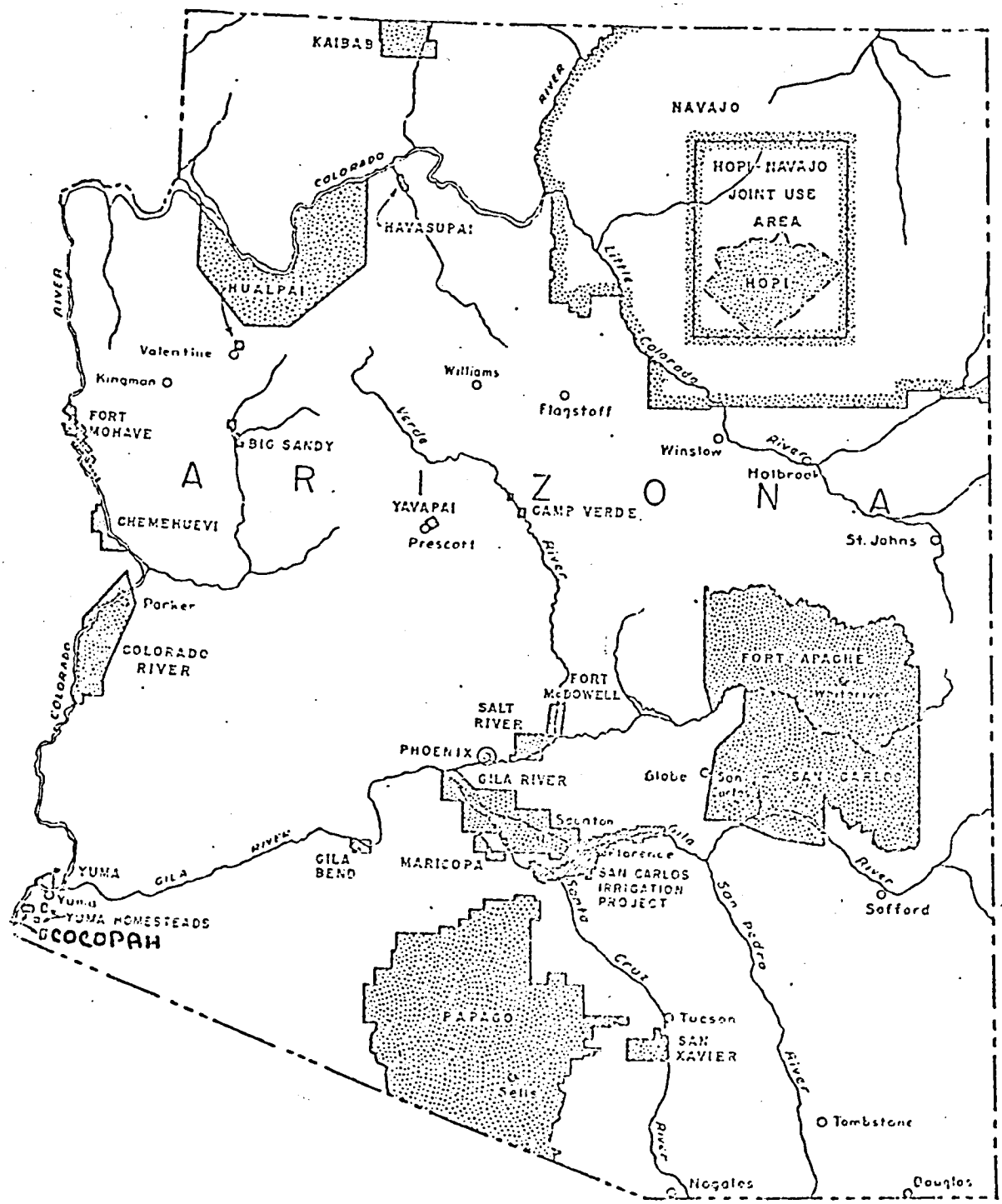
In 1970, approximately 5.4 percent of the state's total population was Indian. This represents a one percent decrease since 1960 (see Table 5). Data are not available to classify the Indian population as to rural or urban, but due to the location of most of the state's reservations, it may be concluded that most of Arizona's Indians are rural (see Figure 3).

The counties with heaviest Indian concentrations were Apache, Navajo, Coconino, and Gila, which ranged from 74.3 percent for Apache County to 15.7 percent for Gila. Region III had the highest proportion of its population classified as Indian with 47.2 percent.

Table 5. Indian Population; State, Region, and County; Arizona, 1960 and 1970.

Region and County	1970		1960	
	Indian Population	Indian Population As A Percent Of County, Region, State, or Population	Indian Population	Indian Population As A Percent Of County, Region, State, or Population
Region I:				
Pima	8,837	2.5	7,307	2.8
Maricopa	11,159	1.2	8,136	1.2
Yuma	2,277	3.7	1,802	3.9
Pinal	6,405	9.4	5,760	9.2
Total: Region I	28,678	2.0	23,005	2.2
Region II:				
Mohave	869	3.4	727	9.4
Coconino	11,996	24.8	11,668	27.9
Yavapai	686	1.9	780	2.7
Total: Region II	13,551	12.2	13,175	16.8
Region III:				
Navajo	23,023	48.3	19,324	50.9
Apache	23,994	74.3	22,814	75.0
Gila	4,591	15.7	3,513	13.6
Total: Region III	51,608	47.2	45,651	48.5
Region IV:				
Graham	1,682	10.1	1,249	8.9
Greenlee	124	1.2	182	1.6
Cochise	152	.2	108	.2
Santa Cruz	22	.2	17	.2
Total: Region IV	1,980	1.9	1,556	1.7
State Total:	95,812	5.4	83,387	6.4

Source: Employment Security Commission of Arizona, Manpower Services to Arizona Indians, 1970, Research and Information Series No. OPR-2-71, June 1971.



Source: Employment Security Commission of Arizona, Manpower Services to Arizona Indians, 1969, Arizona State Employment Service, Research and Information Series No. OPR-2-70, June 1970, p. 4.

Figure 3. Arizona Indian Reservations

The limited data on income levels of Arizona's Indians is presented in Table 6. On nearly all reservations, the average family income is very low. For seven of the eleven reservations for which data is available, the average family income was less than $4,000. Based on the data that is available, it is estimated that approximately 10,000 rural Indian families were poor in 1970. This constitutes 50 percent of all rural poor families.[5]

Low-Production Farms

State, Regional, and County Aggregates

Low-production farms, those producing less than $20,000[6] in agricultural output in one year, are another component of rural poverty. This data is given on a state, region, and county breakdown with the change in number between 1959 and 1969 presented in Tables 7, 8, and 9.

The total number of farms declined by 17.9 percent (Table 7) from 7,173 in 1959 to 5,890 in 1969. All classes of farms except V declined in number. The latter increased by 24.7 percent (abnormal farms will not be included in this discussion).

The total number of low-production farms was a large portion of all farms--in 1959, 2,480 or 34.6 percent of all farms were low

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5. See U.S. Department of Commerce, 1970 Arizona Census of Population, pp. 4-109.

6. Net income from farming varies considerably depending on type of farm, region of the country, and size. To establish a level of gross sales that would provide a net income to the farm family above the poverty threshold is likewise difficult. But studies done by the USDA reveal that generally, if a farm's gross sales are greater than $20,000, the net income will be greater than $4,000 per year. See A. Gordon Ball and Earl O. Heady, Size, Structure, and Future of Farms, (Ames, Iowa State University Press, 1972), p. 69.

Table 6. Arizona Indian Reservations; Selected Data; March 1971.

Reservation	Resident Population	Reservation Acreage	Family Average Income	Available Labor Force 16 Yrs. Old And Older	Employed	Percent Unemployed
Camp Verde	682	690	$ 2,950	285	54	81.1
Chemehuevi[a]	191	28,224	NA	48	35	27.1
Cocopah	428	528	2,465	169	38	77.5
Colorado River[b]	1,840	264,091	NA	610	399	34.6
Fort Apache	6,144	1,664,872	NA	1,850	854	53.8
Fort McDowell	340	24,000	6,000	82	80	2.4
Fort Mohave[c]	339	38,383	NA	80	50	37.5
Fort Yuma[d]	1,253	9,282	NA	434	298	31.3
Gila Bend	459	10,337	(488)[e]	101	78	22.8
Gila River	8,311	371,933	4,531	2,280	1,835	19.5
Havasupai	374	3,058	NA	141	66	53.2
Hopi	6,282	650,013	1,950	1,897	895	52.8
Haulapai	1,035	993,123	5,141	426	209	50.9
Kaibab	136	120,413	2,850	49	25	49.0
Maricopa (Ak Chin)	248	21,840	2,700	66	66	0
Navajo[f]	72,500	15,360,000	(913)[e]	40,346	26,000	35.6
Papago (Sells)	9,342	2,773,388	(975)[e]	2,982	2,256	24.3
Salt River	2,410	46,600	3,300	630	554	12.1

Table 6.--Continued.

Reservation	Resident Population	Reservation Acreage	Family Average Income	Available Labor Force 16 Yrs. Old And Older	Employed	Percent Unemployed
San Carlos	4,686	1,877,216	2,985	1,074	578	46.2
San Xavier	2,243	71,095	(825)[e]	319	245	23.2
Yavapai-Prescott	90	1,558	4,139	42	20	52.4
State Total	119,333	24,330,644	--	53,911	34,635	35.8

[a]Located along the shores of Lake Havasu. Residents live partly in California and partly in Arizona.

[b]Population consists of Mojave, Chemehuevi, Navajo, and Hopi Indians.

[c]Reservation extends into California and Nevada.

[d]Reservation extends into California.

[e]Parentheses depict (reservation) per capita income as opposed to average family income for the other reservations.

[f]The Navajo Reservation extends into New Mexico and Utah. The total reservation population was estimated to be 131,000 of which 72,500 live in Arizona. The remaining figures relating to income and employment are for the total Navajo Reservation population.

Source: Bureau of Indian Affairs; Phoenix Area Office, March 1971.

Table 7. Arizona Farms by Economic Class; 1959 and 1969.

Arizona Farms	1969 Number	1969 Percent Of All Farms	1959 Number	1959 Percent Of All Farms	Percent Change
Class I - Sales of $40,000 and Over	1,593	27.0	1,609	22.4	- 1.0
Class II - Sales of $20,000 to $39,999	615	10.4	984	13.7	-37.5
Class III - Sales of $10,000 to $19,999	582	9.9	920	12.8	-36.7
Class IV - Sales of $5,000 to $9,999	649	11.0	656	9.1	- 1.2
Class V - Sales of $2,500 to $4,999	813	13.8	652	9.1	+24.7
Class VI[a]	243	4.1	252	3.5	- 3.6
Part-Time[b]	1,105	18.8	1,633	22.8	-32.3
Part-Retirement[c]	208	3.5	394	5.5	-47.2
Abnormal[d]	82	1.4	73	1.0	+12.3
Total	5,890	100.0	7,173	100.0	-17.9

[a]Class VI farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who did not work off the farm 100 days or more in the census year.

[b]Part-time farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who worked off the farm 100 days or more in the census year.

[c]Part-retirement farms have a value of farm products sold of $50 to $2,499 and an operator 65 years old or over.

[d]Abnormal farms include institutional farms, experimental and research farms, and Indian reservations. Institutional farms include those operated by hospitals, penitentiaries, schools, grazing associations, government agencies, etc.

Source: 1959 and 1969 Arizona Census of Agriculture, Vol. 1, Part 43.

Table 8. Farms by Economic Class for State and Region; Arizona, 1959 and 1969.

Economic Class of Farm	Region I			Region II			Region III			Region IV			State		
	1969	1959	Percent Change	1969	1959	Percent Change	1969	1959	Percent Change	1969	1959	Percent Change	1969	1959	Percent Change
Class I Sales > $40,000	1,201	1,334	-10.0	99	61	38.4	48	35	37.1	245	179	36.9	1,593	1,609	- 1.0
Class II $20,000-$39,999	356	653	-45.5	63	46	37.0	48	52	- 7.7	75	233	-67.8	615	984	-37.5
Class III $10,000-$19,999	284	490	-42.0	71	92	-22.8	51	94	-45.7	87	244	-64.3	582	920	-36.7
Class IV $5,000-$9,999	312	320	- 2.5	113	117	- 3.4	74	59	- 8.6	107	160	-33.1	649	656	- 1.1
Class V $2,500-$4,999	460	363	26.7	95	73	30.1	91	100	- 9.0	90	121	-25.6	813	657	23.7
Class VI[c]	107	137	-21.9	41	43	- 4.7	29	11	163.6	66	56	17.9	243	247	- 1.6
Part-Time[d]	524	837	-37.4	178	275	-35.3	183	156	20.5	215	365	-41.1	1,105	1,633	-32.3
Part-Retirement[e]	105	209	-49.8	30	64	-53.1	25	38	-34.2	48	83	-42.2	208	394	-47.2
Abnormal[f]	34	28	21.4	15	8	87.5	24	31	-22.6	9	6	50.0	82	73	12.3
Total Number of Farms	3,383	4,371	-22.6	705	779	- 9.5	578	598	- 3.3	942	1,447	-34.9	5,890	7,173	-17.9
Total Number Low-Production Farms	1,163	1,310	-11.2	320	325	- 1.5	245	264	- 7.2	350	581	-39.8	2,287	2,480	- 7.8
Low-Production Farms As A % Of All Farms	34.4	30.0	--	45.4	41.7	--	42.4	44.1	--	37.2	40.2	--	38.8	34.6	--
Part-time Farms As A Percent Of All Farms	15.5	19.1	--	25.2	35.3	--	32.5	26.1	--	22.8	25.2	--	18.8	22.8	--

[a]Each economic class relates to the value of all farm products sold per year from any one particular farm.

[b]Region I = Pima, Maricopa, Yuma, and Pinal Counties
Region II = Mohave, Coconino, and Yavapai Counties
Region III = Navajo, Apache, and Gila Counties
Region IV = Graham, Greenlee, Cochise, and Santa Cruz Counties.

Table 8.- Continued.

[c]Class VI farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who did not work off the farm 100 days or more in the census year.

[d]Part-time farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who worked off the farm 100 days or more in the census year.

[e]Part-retirement farms have a value of farm products sold of $50 to $2,499 and an operator 65 years old or over.

[f]Abnormal farms include institutional farms, experimental and research farms, and Indian reservations. Institutional farms include those operated by hospitals, penitentiaries, schools, grazing associations, government agencies, etc.

Source: 1959 and 1969 Arizona Census of Agriculture, Vol. 1, Part 43.

Table 9. Low-Production Farms, Part-Time and Part-Retirement Farms; State, Region, and County; Arizona, 1959 and 1969.

Region and County	1969 - Number of Farms				1959 - Number of Farms				Percent Change 1959-1969
	Low-Production Farms	Number of Part-time Farms	Number of Part-Retirement Farms	Total	Low-Production Farms	Number of Part-time Farms	Number of Part-Retirement Farms	Total	
Region I:									
Pima	148	63	13	224	134	121	10	265	-15.5
Maricopa	658	346	71	1,075	740	470	146	1,356	-20.7
Yuma	261	66	8	335	284	145	31	460	-28.1
Pinal	96	49	13	158	152	101	22	275	-42.5
Total: Region I	1,163	524	105	1,792	1,310	837	209	2,356	-23.9
Region II:									
Mohave	82	32	4	118	60	44	7	111	6.3
Coconino	67	49	7	123	66	88	5	159	-22.6
Yavapai	171	97	19	287	200	143	52	395	-27.3
Total: Region II	320	178	30	528	326	275	64	665	-20.6
Region III:									
Navajo	85	86	10	181	91	68	21	180	.6
Apache	99	74	10	183	104	43	1	148	23.6
Gila	61	28	5	94	69	45	16	130	-27.7
Total: Region III	245	188	25	458	264	156	38	458	0
Region IV:									
Graham	109	31	7	147	141	80	10	231	-36.4
Greenlee	54	23	6	83	60	21	7	88	- 5.7
Cochise	237	143	34	414	332	251	50	633	-34.6
Santa Cruz	69	18	1	88	48	13	16	77	14.3
Total: Region IV	469	215	48	732	581	365	83	1,029	-28.9
State Total	2,197	1,105	208	3,510	2,481	1,633	394	4,508	-22.1

[a]Low-production farms are those with less than $20,000 annual sales of agriculture products and include Classes III, IV, V, VI.

Source: 1959 and 1969 Arizona Census of Agriculture, Volume I, Part 43.

production farms. In 1969, 2,287 or 38.8 percent, were low-production farms.

Low-production farms as a whole declined by only 7.8 percent between 1959 and 1969 (Tables 8 and 9). Furthermore, they decreased in all counties except Pima, Mohave, Coconino, and Santa Cruz (Table 9). Of these counties, Mohave and Santa Cruz had the greatest increase in low-production farms with 22 and 21 farms or 36.6 and 43.8 percent, respectively.

All regions showed a decline in low-production farms. Region IV had the largest decline in low-production farms with a decrease of 39.8 percent. While the number of low-production farms in the state and each region decreased, the number of part-time and part-retirement farms also declined for the state and for all regions except Region III which had an increase in the number of part-time farms. The trend then seems to be either to farm full-time even at a low level of production or find other full-time employment. (See Appendix III, Tables 42-44, for a further breakdown of Arizona farms.)

Employment Status

State, Regional, and County Aggregates

The state's labor force increased by 41.6 percent from 470,955 in 1960 to 666,809 in 1970. During the same period the rural labor force increased only 5.8 percent from 107,803 to 114,035. The unemployment rate was less in 1970 than 1960 for both the state labor force and the rural labor force with the state unemployment rate in 1970 at 4.0 percent and the rural unemployment rate being 4.9 percent (Table 10).

Table 10. Employment Status for Total State and Rural Labor Forces; State, Region, and County; Arizona, 1960 and 1970.

Region and County	1970				1960			
	Number In The Total Labor Force	Percent Of Total Labor Force Unemployed	Number In The Rural Labor Force	Percent Of Rural Labor Force Unemployed	Number In The Total Labor Force	Percent Of Total Labor Force Unemployed	Number In The Rural Labor Force	Percent Of Rural Labor Force Unemployed
Region I:								
Pima	130,093	3.8	16,910	3.3	97,234	5.5	10,769	4.0
Maricopa	385,182	3.8	21,850	4.9	249,994	4.4	32,750	3.5
Yuma	24,264	4.1	8,343	3.6	18,921	4.2	8,445	7.7
Pinal	21,308	5.0	9,857	5.1	19,013	7.1	9,768	6.8
Total: Region I	561,847	3.9	56,960	4.3	385,162	4.8	61,733	4.7
Region II:								
Mohave	9,521	6.3	6,656	7.2	3,005	4.0	1,088	5.6
Coconino	16,832	4.7	6,440	4.7	14,474	7.2	4,721	9.9
Yavapai	12,440	4.3	6,865	3.7	10,465	3.7	5,651	3.5
Total: Region II	38,793	5.0	19,951	5.2	27,944	5.5	11,460	6.3
Region III:								
Navajo	12,809	6.5	8,188	8.3	9,579	8.4	4,950	12.4
Apache	6,892	8.7	6,892	8.7	6,878	13.9	6,878	13.9
Gila	9,676	3.8	5,450	4.5	8,289	6.4	4,191	5.5
Total: Region III	29,377	6.1	20,530	7.4	24,746	9.3	16,019	11.2
Region IV:								
Graham	5,058	3.7	3,162	4.0	4,482	6.7	2,633	7.4
Greenlee	3,662	3.7	1,859	3.2	3,759	6.1	2,455	5.9
Cochise	23,470	4.0	9,702	3.6	21,091	4.6	12,312	2.9
Santa Cruz	4,602	3.7	1,861	2.5	3,771	5.2	1,191	3.8
Total: Region IV	36,792	3.9	16,584	3.5	33,103	5.1	18,591	4.0
State Total	666,809	4.0	114,035	4.9	470,955	5.1	107,803	5.7

[a]The labor force is defined as including all residents 14 years old and over including members of the Armed Forces (persons on active duty).

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

The rural labor force had a lower unemployment rate in all counties in 1970 than in 1960 except Cochise, Maricopa, Mohave, and Yavapai Counties. Total unemployment was lower in all counties except Mohave and Yavapai (Table 10).

The rural labor force had a 74.2 percent increase in Region II and a 28.2 percent increase in Region III, but showed a decrease of 7.7 and 10.8 percent for Regions I and IV, respectively. Furthermore, the rate of rural unemployment was greater in Regions I and III in 1970 than 1960.

In summary, the rural labor force is expanding at a much slower rate than the urban labor force. Second, the rate of unemployment is greater among the rural population than the urban. And finally, Region III experienced a rapid increase in its rural labor force in the presence of the highest regional unemployment rate of the state.

Spanish-Americans

No rural-urban breakdown is given for data on unemployment rates for Arizona's Spanish-American population. Hence, data presented here will pertain to the entire Spanish-American population.

In 1970, the Spanish-American labor force of the state had a higher unemployment rate than that of the total state labor force (see Table 11). Seven counties had Spanish-American unemployment rates greater than that of the corresponding total county labor force and one county, Coconino, had the same rate of unemployment in both the Spanish-American and total labor force.

Region I, which was urban in character and contained 80.3 percent of the total Spanish-American labor force in 1970, had the greatest

Table 11. Employment Status of Spanish-Americans, Indians[a], and Total Labor Force; State, Region, and County; Arizona, 1970.

Region and County	Number In Total Labor Force	Percent Of Total Labor Force Unemployed	Number In Spanish-American Labor Force	Percent Of Spanish-American Labor Force Umemployed	Number In Indian Labor Force	Percent Of Indian Labor Force Unemployed
Region I:						
Maricopa	130,093	3.8	46,109	5.2	--	--
Pima	386,182	3.8	26,283	4.6	--	--
Pinal	24,264	4.1	6,995	6.5	--	--
Yuma	21,308	5.0	5,857	5.3	--	--
Total: Region I	561,847	3.9	85,244	5.2	7,673	23.8
Region II:						
Yavapai	9,521	6.3	1,382	3.5	--	--
Coconino	16,832	4.7	2,323	4.7	--	--
Mohave	12,440	4.3	590	3.9	--	--
Total: Region II	38,793	5.0	4,296	4.2	1,071	57.1
Region III:						
Apache	12,809	6.5	588	5.8	--	--
Navajo	6,892	8.7	1,560	5.0	--	--
Gila	9,676	3.8	2,520	4.4	--	--
Total: Region III	29,377	6.1	4,668	4.8	42,243	36.4
Region IV:						
Graham	5,058	3.7	1,048	3.5	--	--
Greenlee	3,662	3.7	1,600	5.6	--	--
Cochise	23,470	4.0	6,085	3.9	--	--
Santa Cruz	4,602	3.7	3,171	4.9	--	--
Total: Region IV	36,792	3.9	11,904	5.0	2,924	51.0
State Total	666,809	4.0	106,112	5.0	53,911	35.8

[a]Indian labor force data was not available on a county basis. The Indian figures for each region were derived from reservation data. In some cases the reservations extend into neighboring states.

Source: 1970 Arizona Census of Population, and Bureau of Indian Affairs, Profiles of Arizona Indians.

percent of the Spanish-American labor force unemployed, 5.2 percent; Region IV (a rural region) had the next highest rate at 5.0 percent (Table 11).

Indians

Many of the Indian reservations were faced with high unemployment rates as shown in Table 12. There is little doubt that Indian unemployment was far higher, and consequently the median family income lower, than that of any other significant ethnic group in the state. The five Arizona reservations containing the largest number of Indians--Navajo, Gila River, Papago (Sells), Fort Apache, and Hopi--had unemployment rates ranging from 19.5 percent for Gila River to 53.8 percent for Fort Apache.

The highest unemployment rate was in Region II with 57.1 percent, followed closely by Region IV with 51.0 percent unemployed. By far the greatest proportion of the state's Indian labor force was in Region III (78.4 percent) with 42,243 and had 36.4 percent of the labor force unemployed.

Housing Conditions

State, Regional, and County Aggregates[6]

Poor housing facilities may also be an important component of poverty.

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6. The only data available at this time on housing conditions for Arizona's counties is for those families below the poverty level as specified in the U.S. Department of Commerce, 1970 Arizona Census of Population, pp. 4-208, 4-209, 4-222, and 4-223.

Table 12. Indian Population and Employment Characteristics; State, Region, and Reservation; Arizona, 1970.

Region & Reservation	Population	Labor Force	% Unemployed
Region I:			
Papago (Sells)	9,342	2,982	24.3
San Xavier	2,243	319	23.2
Fort McDowell	340	82	2.4
Salt River	2,410	630	12.1
Gila River	8,311	2,280	19.5
Maricopa	248	66	0
Gila Bend	459	101	22.8
Cocopah	428	169	77.5
Fort Yuma	1,253	434	31.3
Colorado River[a]	1,840	610	34.6
Total: Region I	26,874	7,673	23.8
Region II:			
Fort Mohave[b]	339	80	37.5
Haulapai	1,035	426	50.9
Kaibab	136	49	49.0
Havasupai	374	141	53.2
Yavapai-Prescott	90	42	52.4
Camp Verde	682	285	81.1
Chemehuevi[c]	191	48	27.1
Total: Region II	2,847	1,071	57.1
Region III:			
Navajo[d]	72,500	40,346	35.6
Hopi	6,282	1,897	52.8
Total: Region III	78,782	42,243	36.4
Region IV:			
Fort Apache	6,144	1,850	53.8
San Carlos	4,686	1,074	46.2
Total: Region IV	10,830	2,924	51.0
State Total	119,333	53,911	35.8

[a]The Colorado River Reservation consists of Mojave, Chemehuevi, Navajo, and Hopi Indians and extends into California.

[b]Reservation extends into California and Nevada.

[c]Reservation extends into California.

[d]The Navajo Reservation extends into New Mexico and Utah. The total reservation population was estimated to be 131,000 of which 72,500 live in Arizona. The remaining employment figures relate to the total Navajo Reservation population.

Source: U.S. Department of Interior, Reservation Programs, Bureau of Indian Affairs, Phoenix Area Office, Phoenix, Arizona, 1970.

In this section, data are presented on the adequacy of plumbing facilities[7] of occupied housing units.[8]

The households in the urban segment were better equipped with plumbing facilities in 1970. Only 1.9 percent of all urban households were lacking some or all plumbing facilities compared to 13.2 percent for the rural nonfarm and 30.1 percent of farm households (Table 13). Of all households in the state below the poverty threshold of income, some 24.6 percent had incomplete plumbing (Table 14). Region III, a rural region, had the highest portion of poverty households with incomplete plumbing, 57.9 percent, and Region I, an urban region had the lowest percent of poverty households with incomplete plumbing, 10.0 percent (Table 14).

Spanish-Americans

In 1970, Spanish-American housing and plumbing facilities were much poorer than the total population of the state. For the total of

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7. Units "lacking some or all plumbing facilities" may lack hot water, bathtub (or shower), flush toilet, or all of these facilities. Also included in this category are units having no piped water inside the structures and units with toilet or plumbing facilities which are also used by another household. U.S. Department of Commerce, 1970 Arizona Census of Population, p. APP-31.

8. An occupied housing unit is a group of rooms or a single room occupied as a separate living quarter. A housing unit can be occupied by a family, a family and unrelated persons living together, a group of unrelated persons living together, or by one person. For each occupied housing unit, there is one household. The former term refers to a type of living quarter and the latter term refers to the persons who occupy the quarters. Thus, the total number of households in Arizona is equal to the total number of occupied housing units in the state. See the U.S. Department of Commerce, 1970 Arizona Census of Population, p. APP-31.

Table 13. Adequacy of Household Plumbing; Total State and Spanish-Americans by Place of Residence; Arizona, 1970.

	Number Of Households	Percent Lacking Some Or All Plumbing Facilities
State Total:	461,998	3.8
Spanish-American	71,447	6.7
Urban Total:	393,516	1.9
Spanish-American	60,990	5.1
Rural Nonfarm Total:	63,156	13.2
Spanish-American	9,811	15.6
Rural Farm Total:	5,326	30.1
Spanish-American	646	25.5

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 14. Adequacy of Plumbing in Poverty Households; State, Region, and County; Arizona, 1970.

Region and County	Number of Households With Incomes Below The Poverty Level	Percent of Poverty Households Lacking Some or All Plumbing Facilities
Region I:		
Pima	14,743	10.2
Maricopa	33,649	8.1
Yuma	2,234	14.1
Pinal	2,966	27.4
Total: Region I	53,592	10.0
Region II:		
Mohave	752	12.9
Coconino	1,851	38.1
Yavapai	2,073	8.4
Total: Region II	4,676	20.9
Region III:		
Navajo	2,902	59.1
Apache	2,244	73.6
Gila	1,475	31.5
Total: Region III	6,621	57.9
Region IV:		
Graham	1,006	18.9
Greenlee	305	11.1
Cochise	2,663	11.0
Santa Cruz	741	20.4
Total: Region IV	4,715	14.2
State Total	69,604	24.6

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

all Spanish-American households, 6.7 percent lacked some or all plumbing facilities compared to 3.8 percent for the total population (see Table 13).

Spanish-American plumbing facilities were poorer for rural households than urban households. Rural farm Spanish-American housing units had 25.5 percent with incomplete plumbing and rural nonfarm housing units had 15.6 percent with incomplete plumbing compared with 5.1 percent in urban areas (Table 13).

On a regional breakdown, the percent of poverty level Spanish-American households lacking some or all plumbing facilities was close to the state average of 18.2 percent except Region II with a rete of 8.5 percent (Table 15).

Indians

There was no data available on the condition or adequacy of the housing units of Arizona's Indians. But, the 1969 Profiles of Phoenix Area Indians summarizes Indian housing as being insufficient in number and substandard in quality. They were further described as being small with limited privacy, running water, or electricity, and most suffered from poor sanitary conditions.[9]

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9. United States Department of Interior, Bureau of Indian Affairs, 1969 Profiles of Arizona Indians, (Phoenix: Phoenix Area Office, 1969).

Table 15. Adequacy of Plumbing in Poor Spanish-American Households; State, Region, and County; Arizona, 1970.

Region and County	Number of Households With Incomes Below The Poverty Level	Percent of Poverty Households Lacking Some or All Plumbing Facilities
Region I:		
Pima	4,197	21.4
Maricopa	7,184	15.5
Yuma	759	16.7
Pinal	1,156	28.1
Total: Region I	13,296	18.5
Region II:		
Mohave	32	12.5
Coconino	184	2.7
Yavapai	312	11.5
Total: Region II	528	8.5
Region III:		
Navajo	256	22.3
Apache	127	27.6
Gila	239	13.0
Total: Region III	622	19.8
Region IV:		
Graham	289	11.8
Greenlee	193	15.5
Cochise	1,072	17.9
Santa Cruz	627	22.0
Total: Region IV	2,181	18.1
State Total:	16,627	18.2

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Health Characteristics

State, Regional, and County Aggregates

The five leading death-causing diseases in Arizona in 1968 were: heart diseases, malignant neoplasms (cancer); cerebrovascular (strokes); bronchitis, emphysema, and asthma; and influenza and pneumonia (Table 16). These accounted for 63 percent of the total 13,681 deaths.[10]

Data on health characteristics are not separated by rural-urban residence. Consequently, the best indication of rural incidence is indicated by the rurality of the county (Table 2). Region I, containing Pima, Maricopa, Pinal, and Yuma Counties was highly urban in character, while the largest portion of the population in Regions II, III, and IV was rural.

The leading cause of death for the state and each region was heart disease and the incidence of deaths was fairly uniform among regions. The only substantial variance from the state rate of 48.2 percent was Region III in which 39.1 percent of all deaths from these major causes were related to heart diseases.

The second most important cause of death was malignant neoplasms (cancer) which, depending on the county, accounted for 21.5 to 24.7 percent of all deaths from these major death-causing diseases.

Region III with its predominately Indian population had a much higher incidence of death (15.3 percent) from influenza and pneumonia than any other region.

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10. Arizona State Department of Health, Arizona Vital Statistics, 1968, (Phoenix, Health Records and Statistics Division, 1968).

Table 16. Incidence of Five Leading Death-Causing Diseases; State, Region, and County; Arizona, 1968.

Region and County	Percent of State Population	Heart Disease		Malignant Neoplasms (Cancer)		Cerebrovascular (Stroke)		Bronchitis, Emphysema & Asthma		Influenza and Pneumonia		Total No. of Deaths By These Diseases	Percent of State Total Deaths By These Diseases
		No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths		
Region I:													
Pima	19.8	937	48.6	447	23.2	257	13.3	174	9.0	113	5.9	1,928	22.4
Maricopa	54.6	2,303	43.8	1,173	24.9	661	14.0	304	6.4	274	5.8	4,715	54.7
Pinal	3.9	123	43.3	65	22.9	51	18.0	23	8.1	22	7.7	284	3.3
Yuma	13.4	143	51.6	59	21.3	39	14.1	20	7.2	16	5.8	277	3.2
Total: Region I	81.3	3,906	43.7	1,744	24.2	1,008	14.0	521	7.2	425	5.9	7,204	83.6
Region II:													
Mohave	1.5	55	44.7	24	19.5	21	17.1	15	12.2	8	6.5	123	1.4
Coconino	2.7	46	39.0	34	28.8	13	11.3	4	3.4	16	13.6	118	1.4
Navajo	2.1	189	53.5	70	19.8	57	16.1	27	7.6	10	2.8	353	4.1
Total: Region II	6.3	290	48.8	128	21.5	96	16.2	46	7.7	34	5.7	594	6.9
Region III:													
Navajo	2.7	42	31.7	28	23.1	29	24.0	3	2.5	19	15.7	121	1.4
Apache	1.8	19	26.8	19	26.8	13	18.3	-	-	20	28.2	71	.8
Gila	1.7	72	48.6	37	25.0	21	14.2	5	3.4	13	8.8	148	1.7
Total: Region III	6.2	133	39.1	84	24.7	63	18.5	8	2.4	52	15.3	340	3.9
Region IV:													
Graham	.9	41	50.6	9	11.1	18	22.2	5	6.2	8	9.9	81	.9
Greenlee	.5	20	47.6	15	35.7	4	9.5	3	7.1	-	-	42	.5
Cochise	3.5	137	46.6	73	24.8	51	17.3	15	5.1	18	6.1	294	3.4
Santa Cruz	.8	26	43.3	15	25.0	9	15.0	1	1.7	9	15.0	60	.7
Total: Region IV	5.8	224	47.0	112	23.5	82	17.2	24	5.0	35	7.3	477	5.5
State Total	100.0	4,153	48.2	2,068	24.0	1,249	14.5	599	7.0	546	6.3	8,615	100.0

[a]Percent of total deaths in this table refers to total deaths from these five diseases.

Source: Arizona State Department of Health, Arizona Vital Statistics, 1968, Health Records and Statistics Division, Phoenix, Arizona.

The incidence of deaths by heart disease, pneumonia, and influenza declined in the state between 1956 and 1968 and increased for malignant neoplasms (see Table 17). All regions except Region III differ very little from the state levels in both 1968 and 1956. In Region III, the incidence of heart disease deaths remained constant (49.4 percent). Deaths from malignant neoplasms increased (25.9 percent to 31.2 percent), and pneumonia and influenza deaths decreased but still were nearly three times the state average in both years (decreased from 24.7 percent to 19.3 percent while the state rates were 8.9 and 8.1 percent, respectively).

Spanish-Americans

No data were available relating specifically to the Spanish-Americans. However, Region IV which has a high proportion of Spanish-Americans, had slightly higher rates of death from cerebrovascular causes (17.2) and influenza and pneumonia (7.3) than the state rates (14.5 and 6.3 percent, respectively).

Indians

No data were available specifying the health status of the Arizona Indian population but in a summary statement by Dr. Carl Rhinehart, it was pointed out that Indian health in Arizona was similar to any other socio-economic deprived group such as are found in our country's ghettos. It was also mentioned that their health status was changing rapidly and for the better.[11]

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11. Dr. Carl Rhinehart, Chief, Health Status Surveillance, Health Programs Systems Center, Tucson, Arizona, April 24, 1972.

Table 17. Incidence of Three Leading Death-Causing Diseases; State, Region, and County; Arizona, 1956 and 1968.

Region and County	1968							1956						
	Heart Disease		Malignant Neoplasms (Cancer)		Influenza and Pneumonia		Total No. of Deaths By These Diseases	Heart Disease		Malignant Neoplasms (Cancer)		Influenza and Pneumonia		Total No. of Deaths By These Diseases
	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths		No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	No. of Deaths	Percent[a] of Total Deaths	
Region I:														
Pima	937	62.6	447	29.9	113	7.5	1,497	484	64.7	221	29.5	43	5.7	748
Maricopa	2,303	61.4	1,173	31.3	274	7.3	3,750	1,198	64.4	515	27.7	147	7.9	1,860
Yuma	123	58.6	65	31.0	22	10.5	210	82	68.3	26	21.7	12	10.0	120
Pinal	143	65.6	59	27.1	16	7.3	218	99	66.0	32	21.3	19	12.7	150
Total: Region I	3,506	61.8	1,744	30.7	425	7.5	5,675	1,863	64.7	794	27.6	221	7.7	2,878
Region II:														
Mohave	55	63.2	24	27.6	8	9.2	87	16	57.1	10	35.7	2	7.1	28
Coconino	46	47.9	34	35.4	16	16.7	96	46	55.4	22	26.5	15	18.1	83
Yavapai	189	70.3	70	26.0	10	3.7	269	90	67.7	35	26.3	8	6.0	133
Total: Region II	290	64.2	128	28.3	34	7.5	452	152	62.3	67	27.5	25	10.2	244
Region III:														
Navajo	42	47.2	28	31.5	19	21.3	89	37	44.6	19	22.9	27	32.5	83
Apache	19	32.8	19	32.8	20	34.5	58	18	33.3	15	27.8	21	38.9	54
Gila	72	59.0	37	30.3	13	10.7	122	63	61.2	28	27.2	12	11.7	103
Total: Region III	133	49.4	84	31.2	52	19.3	269	118	49.4	62	25.9	59	24.7	239
Region IV:														
Graham	41	70.7	9	15.5	8	13.8	58	21	60.0	8	22.9	6	17.1	35
Greenlee	20	57.1	15	42.9	-	-	35	17	70.8	5	20.8	2	8.3	24
Cochise	137	60.1	73	32.0	18	7.9	228	109	63.4	53	30.8	10	5.8	172
Santa Cruz	26	52.0	15	30.0	9	18.0	50	17	48.6	17	48.6	1	2.9	35
Total: Region IV	224	60.4	112	29.9	35	9.4	371	164	62.4	80	30.4	19	7.2	263
State Total	4,153	61.4	2,068	30.6	546	8.1	6,767	2,297	63.4	1,003	27.7	324	8.9	3,624

[a]Percent of total deaths in this table means percent of total deaths by these three diseases. The disease categories listed in this table do not correspond exactly to those in Table 16 due to a change in disease classification.

Source: Arizona State Department of Health, 1968 and 1956 Arizona Vital Statistics, Health Records and Statistics Division, Phoenix, Arizona.

CHAPTER IV

THE CAUSES OF RURAL POVERTY IN ARIZONA

Data pertaining to the causes of rural poverty in Arizona are presented in this chapter. For each cause noted in Chapter II, data are presented to show the change since 1960, variance among areas within Arizona (state, urban-rural, regions, and counties) and by minority groups (Spanish-Americans and Indians).

Educational Levels

State, Regional, and County Aggregates

The first cause of rural poverty in Arizona to be presented on a state, county, and regional basis is the level of educational attainment and the change between 1960 and 1970 (Table 18). Numerous characteristics relating to educational attainment stand out in this table. First, educational attainment improved between 1960 and 1970. For both the rural and nonrural segments, the percentage with no school and the percentage with eight years or less, declined for the state.

Second, the rural population of the state had a much lower educational attainment than the nonrural population. In 1970, 6.0 percent of the rural residents 25 years old or over had no schooling compared to 1.6 percent of the nonrural people.

Third, there were many counties that varied a great deal from the state average for educational attainment, i.e., Apache and Coconino

Table 18. Educational Attainment of Rural and Nonrural Persons 25 Years Old and Over; State and County; Arizona, 1960 and 1970.

State and County Educational Characteristics	Nonrural Population 1960	Nonrural Population 1970	Rural Population 1960	Rural Population 1970
STATE TOTAL:				
Persons 25 and Over	506,099	732,185	155,003	183,552
Percent No School	2.1	1.6	10.1	6.0
Percent With 8 Yrs. or Less	31.9	22.9	47.1	32.4
APACHE COUNTY:				
Persons 25 and Over	-[a]	-[a]	11,200	12,506
Percent With No School	-[a]	-[a]	39.3	27.2
Percent With 8 Yrs. or Less	-[a]	-[a]	68.6	52.4
COCHISE COUNTY:				
Persons 25 and Over	12,600	19,489	14,534	10,556
Percent With No School	2.3	2.4	2.4	2.0
Percent With 8 Yrs. or Less	40.0	28.8	32.5	28.7
COCONINO COUNTY:				
Persons 25 and Over	11,653	10,318	6,867	9,896
Percent With No School	2.0	1.5	27.0	16.5
Percent With 8 Yrs. or Less	29.3	18.3	54.2	36.0
GILA COUNTY:				
Persons 25 and Over	6,427	6,504	6,555	8,669
Percent With No School	3.8	2.3	3.5	2.1
Percent With 8 Yrs. or Less	42.7	30.7	42.7	30.0
GRAHAM COUNTY:				
Persons 25 and Over	2,395	2,824	4,034	4,880
Percent With No School	2.3	1.3	4.4	4.0
Percent With 8 Yrs. or Less	32.2	30.9	46.7	35.1
GREENLEE COUNTY:				
Persons 25 and Over	2,032	2,542	3,484	2,753
Percent With No School	3.8	1.5	3.6	1.0
Percent With 8 Yrs. or Less	42.3	29.0	43.7	31.2
MARICOPA COUNTY:				
Persons 25 and Over	302,502	476,176	43,608	34,643
Percent With No School	2.0	1.6	8.5	2.6
Percent With 8 Yrs. or Less	31.3	22.0	48.1	32.0
MOHAVE COUNTY:				
Persons 25 and Over	2,456	3,933	1,836	11,219
Percent With No School	2.8	1.1	3.3	0.4
Percent With 8 Yrs. or Less	33.9	19.6	32.2	19.7

Table 18.--Continued

State and County Educational Characteristics	Nonrural Population 1960	Nonrural Population 1970	Rural Population 1960	Rural Population 1970
NAVAJO COUNTY:				
Persons 25 and Over	6,012	6,370	9,391	13,806
Percent With No School	3.0	3.0	28.9	15.9
Percent With 8 Yrs. or Less	31.8	27.6	59.2	44.3
PIMA COUNTY:				
Persons 25 and Over	122,188	156,379	16,192	29,564
Percent With No School	1.8	1.3	4.5	2.8
Percent With 8 Yrs. or Less	29.7	22.0	31.8	18.8
PINAL COUNTY:				
Persons 25 and Over	12,752	15,231	16,262	17,669
Percent With No School	5.7	3.9	5.2	4.6
Percent With 8 Yrs. or Less	47.7	36.1	56.2	42.2
SANTA CRUZ COUNTY:				
Persons 25 and Over	3,607	4,075	1,841	2,888
Percent With No School	3.7	3.1	2.4	1.7
Percent With 8 Yrs. or Less	48.7	53.9	38.8	29.6
YAVAPAI COUNTY:				
Persons 25 and Over	7,938	9,835	9,198	13,015
Percent With No School	1.7	1.3	1.6	0.6
Percent With 8 Yrs. or Less	34.8	27.4	37.4	24.9
YUMA COUNTY:				
Persons 25 and Over	13,536	18,509	10,001	11,488
Percent With No School	1.9	1.5	7.6	4.1
Percent With 8 Yrs. or Less	33.0	27.0	50.3	39.0

[a]Total population is rural.

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Counties had 27.2 and 16.5 percent, respectively, of their 1970 rural population 25 years old or over with no formal education.

Region III (Table 19) differed the most from the state average. There were 2.6 percent of the nonrural population and 16.5 percent of the rural population 25 years old or over with no schooling in 1970 compared to state averages of 1.6 and 6.0 percent for nonrural and rural populations, respectively. Schooling in the remaining three regions was similar to the state average. (See Appendix III, Tables 46-50 for a detailed breakdown of state and county educational attainment.)

Spanish-Americans

Educational attainment of Spanish-Americans 25 years old and over in 1970 was less than for the state as a whole (Table 20). Over seven percent had no schooling compared to 2.4 percent for the state. There were 50.4 percent of the Americans with eight years schooling or less versus 24.8 percent for the total population. Only 11.2 percent of the Spanish-Americans had more than 12 years of schooling versus 22.8 percent for the total population (Table 20).

On a county basis, the poorest Spanish-American educational attainment was in Graham, Maricopa, and Pinal Counties where 9.8, 9.3, and 9.3 percent, respectively, had no schooling compared to the total population with 2.4 percent (Table 20). Furthermore, Pinal, Graham, and Santa Cruz Counties had 59.8, 59.1, and 55.3 percent, respectively of their Spanish-American residents with eight years or less schooling compared to the total population with 24.8 percent.

Rural Spanish-Americans had a poorer educational attainment record than urban Spanish-Americans (Table 21). For example, in 1970, 9.6 percent

Table 19. Educational Attainment of Rural and Nonrural Persons 25 Years Old and Over; State and Region; Arizona, 1960 and 1970.[a]

Region and Educational Characteristics	Nonrural Population 1960	Nonrural Population 1970	Rural Population 1960	Rural Population 1970
REGION I:				
Persons 25 Yrs. Old & Over	450,978	666,295	86,063	93,364
Percent With No School	2.0	1.6	7.0	3.2
Percent With 8 Yrs. or Less	31.4	22.4	46.9	30.6
REGION II:				
Persons 25 Yrs. Old & Over	22,047	24,086	17,901	34,130
Percent With No School	2.0	1.4	11.5	5.1
Percent With 8 Yrs. or Less	31.8	22.2	43.3	26.4
REGION III:				
Persons 25 Yrs. Old & Over	12,439	12,874	27,146	34,981
Percent With No School	3.4	2.6	27.1	16.5
Percent With 8 Yrs. or Less	37.4	29.2	59.1	43.7
REGION IV:				
Persons 25 Yrs. Old & Over	20,634	28,930	23,893	21,077
Percent With No School	2.7	2.3	2.9	2.3
Percent With 8 Yrs. or Less	40.8	32.6	37.0	30.6
STATE TOTAL:				
Persons 25 Yrs. Old & Over	506,099	732,185	155,003	183,552
Percent With No School	2.1	1.6	10.1	6.0
Percent With 8 Yrs. or Less	31.9	22.9	47.1	32.4

[a]Further educational data relating to the state's counties can be found in Appendix III, Tables 45-49.

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 20. Educational Attainment of Spanish-Americans and Total Population 25 Years Old and Over; State and County; Arizona, 1970.

	Percent of Spanish-Americans With No School	Percent of Total Population With No School	Percent of Spanish-Americans With 8 Yrs. Or Less	Percent of Total Population With 8 Yrs. Or Less	Percent of Spanish-Americans With More Than 12 Yrs.	Percent of Total Population With More Than 12 Yrs.
State Total	7.1	2.4	50.4	24.8	11.2	22.8
Counties						
Apache	5.6	27.2	46.9	52.4	16.0	12.0
Cochise	7.1	2.4	53.9	28.8	8.6	22.8
Coconino	4.8	1.5	37.5	27.0	18.7	38.6
Gila	3.6	2.3	38.6	30.3	8.3	16.6
Graham	9.8	1.3	59.1	35.6	12.5	28.0
Greenlee	.9	1.5	40.8	30.2	6.0	13.8
Maricopa	9.3	1.6	52.7	22.7	12.7	28.5
Mohave	3.7	1.1	29.4	19.7	21.8	23.2
Navajo	6.1	3.0	43.2	39.0	9.7	20.4
Pima	4.8	1.3	45.6	21.5	10.8	20.6
Pinal	9.3	3.9	59.8	39.4	5.8	18.7
Santa Cruz	3.5	3.1	55.3	43.3	12.8	13.9
Yavapai	4.2	1.3	41.3	26.0	14.2	23.9
Yuma	7.8	1.5	57.6	31.6	9.8	22.4

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 21. Educational Attainment by Place of Residence; Spanish-Americans and Total Population; Arizona, 1970.

Educational Attainment	State		Urban		Rural		Rural Nonfarm		Rural Farm	
	Spanish-American	White	Spanish-American	White	Spanish-American	White	Spanish-American	White	Spanish-American	White
Persons 25 Yrs. and Over	134,022	915,732	108,379	732,185	25,643	152,869	22,226	160,983	3,417	22,569
Percent With No School	7.1	2.5	6.5	1.6	9.6	6.0	9.2	5.4	12.3	10.6
Percent With 8 Yrs. or Less	50.4	24.8	49.2	22.9	55.8	32.4	53.5	30.9	70.8	42.3
Percent With More Than 12 Yrs.	11.2	26.4	11.5	27.8	10.0	21.1	10.6	21.6	6.5	17.2

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

of the rural Spanish-Americans had no schooling compared to 6.5 percent for the urban.

Region IV had the highest percent of Spanish-Americans with eight years school or less (53.0) followed closely by Region I with 51.3 percent (Table 22). This was considerably greater than the 22.9 percent for the state total of those with eight years or less (Table 19). (See Appendix III, Tables 48 and 49 for further Spanish-American educational data.)

Indians

Reservation Indians are the most poorly educated minority group in the U.S.[1] On a national level in 1968, 10 percent of American Indians over age 14 have had no schooling at all and nearly 60 percent had less than an eighth grade education.[2]

For Arizona, the current estimate of the median grade level of education attained by Indian persons 25 years old and over is 5.5 years. This is considerably less than that of the state (12.3 years).[3]

The level of education among Arizona's Indians is varied. The few who do have a high school education or better are more than offset by the large number having no formal education at all. The ultimate result is that the major proportion of the Indian labor force is qualified

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1. U.S. Congress, House, The American Indian--Message from the President of the United States, H.R. Document 272, (Washington, D.C., U.S. Government Printing Office, March 6, 1968).

2. Ibid.

3. Employment Security Commission of Arizona, Manpower Services, pp. 13-14.

Table 22. Educational Attainment for Spanish-American Persons 25 Years Old and Over; State, Region, and County; Arizona, 1970.

Region and County	Persons 25 Yrs. Old and Over	Percent With No School	Percent With 8 Yrs. or Less
Region I:			
Pima	35,102	4.8	45.6
Maricopa	53,894	9.3	52.7
Yuma	6,279	7.8	57.6
Pinal	9,575	9.3	59.8
Total: Region I	104,850	7.7	51.3
Region II:			
Mohave	752	3.7	29.4
Coconino	2,734	4.8	37.5
Yavapai	2,057	4.2	41.3
Total: Region II	5,543	4.4	39.6
Region III:			
Navajo	2,104	6.1	43.2
Apache	921	5.6	46.9
Gila	3,491	3.6	38.6
Total: Region III	6,516	4.7	41.3
Region IV:			
Graham	1,691	9.8	59.1
Greenlee	2,360	.9	40.8
Cochise	8,362	7.1	53.9
Santa Cruz	4,700	3.5	55.3
Total: Region IV	17,113	5.5	53.0
State Total:	134,022	7.1	50.4

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

only for unskilled or lower paying, semiskilled jobs and often cannot qualify for most kinds of job training.[4]

Age Characteristics

State, Regional, and County Aggregates

The second possible cause of rural poverty in Arizona to be presented is the age of the population (see Table 23 and Appendix III, Tables 50 and 51). Several important age characteristics stand out. First, the median age of rural residents was slightly less than that of urban residents (25.5 years for rural and 26.5 years for urban).[5]

Second, the median age of rural residents increased from 22.9 years in 1960 to 25.5 years in 1970 and the urban median age decreased from 26.8 years to 26.5 years in 1970.[6]

Third, there were many counties that differed considerably from the state median rural age in 1970. The median age in Yavapai and Mohave Counties was 36.8 and 34.1, respectively. Perhaps surprisingly, the predominately Indian counties of Apache and Navajo had the lowest median age with 17.9 years and 18.3 years, respectively.

On a regional basis, residents of Region III (large Indian population) had the lowest median age, 20.0 years, and also had the lowest proportion of people over 55 years of age, 11.8 percent. Rural

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4. Employment Security Commission of Arizona, Manpower Services, 1969, pp. 13-14.

5. This was probably due to many people moving to Arizona's urban areas to retire.

6. U.S. Department of Commerce, 1960 and 1970 Arizona Census of Population.

Table 23. Age Characteristics for the Rural Population; State, Region, and County; Arizona, 1970.

Region and County	Rural Total Population	Percent Less Than 29 Yrs.	Percent Over 55 Yrs.	Median Age
Region I:				
Pima	51,767	41.1	22.2	31.9
Maricopa	63,914	51.6	21.9	28.6
Yuma	22,856	55.7	18.0	25.5
Pinal	35,382	55.8	16.7	25.1
Total: Region I	173,919	49.9	20.5	28.5
Region II:				
Mohave	18,521	58.5	24.6	34.1
Coconino	22,209	61.9	12.4	21.1
Yavapai	20,963	43.6	29.7	36.8
Total: Region II	61,693	54.6	21.9	30.4
Region III:				
Navajo	34,873	65.9	9.9	18.3
Apache	32,298	65.4	10.3	17.9
Gila	16,486	53.2	18.9	27.1
Total: Region III	83,657	63.3	11.8	20.0
Region IV:				
Graham	11,245	61.7	14.6	20.4
Greenlee	5,243	54.2	13.9	27.0
Cochise	22,022	57.3	17.4	25.9
Santa Cruz	5,040	47.7	20.7	32.5
Total: Region IV	43,550	57.0	16.6	25.4
State Total:	362,819	54.6	18.2	25.5

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

residents of Region II had the highest median age with 30.4 years and 21.9 percent of its rural residents over 55 years of age, more than any other region.

Spanish-Americans

The median age of Spanish-Americans was much lower than for the total population (Table 24). The median age was 19.5 years compared to 25.5 years for the total population. Furthermore, the proportion of Spanish-Americans over 55 years of age (9.3 percent) was only half of that of the total population (18.2 percent).

On a regional basis, all regions had a lower Spanish-American median age than that for the total population. Region III had the lowest median age at 18.7 years compared to 20.0 years for the total population.

Indians

No age data was available for Arizona Indians. Region III, which is predominately Indian, had the lowest median age at 20.0 years and the smallest proportion of residents over 55 years at 11.8 percent (Table 23).

Migration Characteristics

State, Urban, Rural Nonfarm, Rural Farm Aggregates

The rural farm population was the most immobile of any segment of the population (Table 25). Nearly 55 percent of the farm population was in the same house in 1970 as in 1965. This was considerably higher than the state rate of 41.3 percent. Almost 60 percent of those farm people who did move, moved to another house in the same county, compared

Table 24. Age Characteristics of Spanish-Americans; State, Region, and County; Arizona, 1970.

Region and County	Total Spanish-American Population	Percent Less Than 30 Yrs.	Percent Over 55 Yrs.	Median Age
Region I:				
Pima	82,916	64.7	10.2	20.5
Maricopa	140,607	69.1	8.4	19.0
Yuma	16,250	67.2	7.9	19.0
Pinal	24,813	68.0	8.3	18.5
Total: Region I	264,586	67.5	8.9	19.4
Region II:				
Mohave	1,725	63.3	6.7	19.5
Coconino	6,421	65.2	9.2	21.2
Yavapai	4,444	60.0	15.6	21.2
Total: Region II	12,590	63.1	11.1	21.0
Region III:				
Navajo	5,357	66.2	8.3	17.4
Apache	2,379	68.7	7.4	16.4
Gila	7,914	62.2	11.6	20.3
Total: Region III	15,650	64.6	9.9	18.7
Region IV:				
Graham	3,959	64.8	12.3	20.4
Greenlee	5,178	60.0	11.0	21.3
Cochise	20,594	65.0	10.6	19.4
Santa Cruz	10,792	61.6	11.6	20.0
Total: Region IV	40,523	63.4	11.1	19.9
State Total:	333,349	66.7	9.3	19.5

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 25. Mobility Characteristics; State Total, Urban, Rural Nonfarm, Rural Farm Residence; Arizona, 1965-1970.

Residence In 1965[a]	State Total	Urban	Rural Nonfarm	Rural Farm
Total Population 5 Yrs. Old or Over	1,612,437	1,285,453	286,134	40,850
Number In Same House[b]	666,717	528,931	115,449	22,337
Percent In Same House[c]	41.3	41.1	40.3	54.7
Percent In Different House In U.S.[c]	49.8	49.8	51.0	38.8
Percent In Different House In Same County	48.6	49.3	44.4	59.3
Percent In Different County	51.4	50.7	55.6	40.7
Percent In Different County In Same State	18.0	15.2	28.0	35.0
Percent In Different State	82.0	84.8	72.0	65.0

[a]Residence on April 1, 1965 was the usual place of residence five years before enumeration. Residence in 1965 was used in conjunction with residence in 1970 to determine the extent of residential mobility of the population.

[b]"Same house" includes all persons five years old or over who did not move during the five years as well as those who had moved but by 1970 had returned to their 1965 residence.

[c]"Different house in the U.S." includes persons who, on April 1, 1965, lived in the U.S. in a different house from the one they occupied on April 1, 1970. These persons were subdivided into three groups according to their 1965 residence: "different houe, same county," "different county, same state," and "different state." The second and third groups comprise the population classified as "migrants."

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

to 49 percent for urban residents. And 35 percent of those that moved to a different county moved to a different county in the same state compared to 18 percent for the state.

The urban and rural nonfarm groups seemed to be about equally mobile. About 50 percent of those in each group changed houses between 1965 and 1970.

Spanish-Americans

A smaller proportion of Spanish-Americans changed houses (42.2 percent) between 1965 and 1970 than was true of the state's population in general (49.8 percent) (Tables 25 and 26). There were three other important differences between the mobility of the Spanish-Americans and the total population. First, the incidence of Spanish-Americans who moved to a different house in the same county was considerably greater (69 percent compared to 48.6 percent) than for the total population. This was approximately the case for all segments of the Spanish-American population. Secondly, the percent of Spanish-Americans who moved to a different county in the same state was considerably greater than for the total population (37.0 percent for Spanish-Americans compared to 18.0 percent for the total population). Finally, all segments of the Spanish-American population--urban, rural, nonfarm, and rural farm--exhibited about the same degree of mobility. Between 42 and 46 percent of the people in each of these groups changed houses between 1965 and 1970.

Indians

Specific data is not available on the mobility of Arizona's Indians but it is believed due to strong tribal ties and customs that

Table 26. Spanish-American Mobility Characteristics; State Total, Urban, Rural Nonfarm, Rural Farm Residence; Arizona, 1965-1970.

Residence In 1965[a]	State Total	Urban	Rural Nonfarm	Rural Farm
Total Population 5 Yrs. Old or Over	290,586	235,694	47,700	7,192
Number In the Same House[b]	144,758	118,418	22,901	3,439
Percent In the Same House	49.8	50.2	48.0	47.8
Percent In Different House In U.S.[c]	42.2	42.0	42.8	45.8
Percent In Different House In Same County	69.0	70.1	62.9	76.6
Percent In Different County	31.0	29.9	37.1	23.4
Percent In Different County In Same State	37.0	35.0	42.5	58.2
Percent In Different State	63.0	65.0	57.5	41.8

[a]Residence on April 1, 1965 was the usual place of residence five years before enumeration. Residence in 1965 was used in conjunction with residence in 1970 to determine the extent of residential mobility of the population.

[b]"Same house" includes all persons five years old or over who did not move during the five years as well as those who had moved but by 1970 had returned to their 1965 residence.

[c]"Different house in the U.S." includes persons who, on April 1, 1965, lived in the U.S. in a different house from the one they occupied on April 1, 1970. These persons were subdivided into three groups according to their 1965 residence: "different house, same county," "different county, same state," and "different state." The second and third groups comprise the population classified as "migrants."

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

off-reservation mobility is not great. Mobility within the reservations, especially the larger ones like Navajo, was believed to be extensive.[7]

Minority Cultural Characteristics

Spanish-Americans

Although Tweeten suggests that the younger generation of Spanish-Americans is accommodating to a culture more consistent with economic progress, and hard data on these cultural characteristics is lacking, some social studies[8] do indicate that the present culture of Spanish-Americans is a cause of poverty. These characteristics are summarized in Table 27. In summary, this information indicates that their culture causes them to be less competitive and more concerned about the present than planning for the future.

Spanish-Americans also tend to have larger than average families (Tables 28 and 29) and to have relatives other than the head, wife, or children, living with the family. As a consequence, the per capita income of each family is lower.

For Arizona, the mean family size of Spanish-American poor was 5.05 members compared to 4.28 members for the total state poor population (Table 28). Apache, Navajo, and Coconino Counties were three of the four counties with greater mean size of poor families for their

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7. Employment Security Commission of Arizona, Manpower Services, 1970.

8. Tweeten States that, "There is considerable evidence that the younger generation (Spanish-American) is accommodating to a culture and way of life morenearly consistent with economic progress." Tweeten, Foundations, p. 368.

Table 27. Comparison of Cultural Value Systems; Modern American Industrial vs. Indian and Spanish-American.

Modern Industrial Values	Indian and Spanish-American Values
1. Accumulates wealth or things for better present or future life.	1. Gives things away--timeliness and grace of giving are important factors.
2. Saves and plans for rewards in the future.	2. Does not save. As resources are available, they are used, shared or given away. Resources saved only for provision of pleasure in the immediate future.
3. Lives in the future. Gives up immediate pleasures for a better future.	3. Present oriented--today is all important; enjoy today.
4. Competitive--tries for maximum achievement, engages in individual competition in work, etc.	4. Non-competitive--generally workers will gear themselves to the lowest producer in the group. "Team" or "clan"-type spirit prevails.
5. Aggressive--is a problem-solver; takes positive action to correct weakness or to get what is needed to improve the situation.	5. Withdraws from unwelcome or unpleasant situations and does not push to correct or alleviate conditions.
6. Impatient--feels an urgency to take action to improve conditions or better life status.	6. Patient--passive attitude; submissive to nature.
7. Accepts majority rule--generally accepts that the will of the majority must be recognized.	7. Generally accepts only unanimous rule; (e.g., an 80 percent majority probably would not influence the other 20 percent to accept the will of the majority.)

Source: Employment Security Commission of Arizona, Manpower Services to Arizona Indians, 1970, Research and Information Series No. OPR-2-71, June 1971.

Table 28. Mean Family Size of the Poor; Total Population and Spanish-American; State and County; Arizona, 1970.

Counties	Spanish-American Poor Mean Family Size	Total Poor Population Mean Family Size
Apache	5.62	5.73 (+)[a]
Cochise	4.86	3.96
Coconino	4.19	5.06 (+)[a]
Gila	4.93	4.51
Graham	4.83	4.59
Greenlee	4.40	3.87
Maricopa	5.12	4.04
Mohave	3.68	3.78 (+)[a]
Navajo	5.36	5.60 (+)[a]
Pima	4.82	3.91
Pinal	5.55	4.75
Santa Cruz	5.27	5.03
Yavapai	4.43	3.36
Yuma	5.33	4.07
State Total	5.05	4.28

[a](+) represents those counties with larger mean family size for the total population than the corresponding Spanish-American mean family size.

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 29. Mean Ethnic Family Size; State, Urban, Rural Nonfarm, Rural Farm Residence; Arizona, 1970.

	State Total Mean Family Size	Urban Total Mean Family Size	Rural Nonfarm Total Mean Family Size	Rural Farm Total Mean Family Size
Spanish-American	5.05	4.98	5.22	5.83
White	3.89	3.90	3.84	4.16
Total State	4.28	4.01	4.77	5.22

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

total population than for the family size of the Spanish-American poor. This was likely due to the large Indian population of these counties and their tendency to have large families.

The Spanish-American family size also varied considerably from the white population of the state for all places of residence; urban, rural nonfarm, and rural farm (see Table 28).

Indians

One of the major factors which reduces the Indian's ability to advance, as rapidly as the remainder of our society, is cultural background. Research conducted by the Employment Security Commission of Arizona suggests that tribal cultural patterns are an important factor acting as a barrier to the employment of Indians. Growing up as a member of a tribe, an Indian learns to speak and think in a particular Indian dialect and acquires culturally prescribed behavior patterns that are not only different but in many instances diametrically opposed to those behavior patterns that are taught and encouraged in the dominant American culture. Many of the Indian's basic behavioral patterns actually prevent him from competing successfully for jobs with the white man in the white man's labor market. Some of these behavior patterns are as follows.[9]

1. "Many Indians tend not to think in terms of abstract goals such as prestige and personal advancement. They tend to think in concrete terms and usually have no interest in accumulating personal assets beyond their everyday needs--food, shelter, and clothing."

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9. Employment Security Commission of Arizona, Manpower Services, 1969, pp. 10-13.

2. "In his culture, the Indian has no tradition of employment, i.e., one person working for another on a compensated basis. The majority traditionally have lived on a day-to-day basis and possess only rudimentary hunting, pastoral, or agricultural skills. When they were moved onto reservations, for many years they held the status of wards of the U.S. Government and were not encouraged to acquire job skills. Living on isolated reservations, the Indian had no alternative but to follow the ways of his ancestors. Indian children who learn the attitudes, values, customs, and behavioral patterns of their parents are not oriented to the world of work as are the children of the rest of our society."

3. "Many Indians do not conceive of time the way the white man does. They have only a vague orientation of time and consequently find it difficult to adjust to the white man's rigid time schedules."

4. "Many Indians have no motivation to accumulate money because assets customarily must be shared with relatives."

5. "The white man's standards of etiquette and interaction are quite different than those of the Indian; for example, some Indians consider it impolite to look at people--they consequently avoid eye to eye contact; white people will volunteer information, the Indian has to be asked specific questions; the Indian rarely gives positive or negative responses--his verbal responses often seem superficial. These differences in etiquette, not to mention differences in holidays, religion, and family structure, cause many problems and misunderstandings between the Indian and the white man."

Of course, these statements of the behavior patterns must be qualified. They are generalizations of the American Indian, and, of course, there are many individual cases that vary greatly.

A summary of the cultural differences between Spanish-American and Indian cultures and that of the dominant Anglo-American culture is given in Table 27.

Rural Medical Services

State, Regional, and County Aggregates

The physician/population ratio for the state was 1:872 in 1970 and 1:1,135 in 1960[10] and the ratio varied considerably for counties and regions in both 1960 and 1970. Navajo and Graham Counties had the smallest physician/population ratio for 1970 with 1:3,963 and 1:2,072, respectively, and in 1960 Navajo and Apache Counties had the smallest ratios with 1:4,749 and 1:4,348. The largest ratios in 1970 were in Maricopa and Pima Counties with 1:771 and 1:741, respectively. In 1960, these same two counties again had the largest ratios with 1:1,045 and 1:846 (Table 30).

Region III, which had a large Indian population, had the smallest physician/population ratio in both 1960 and 1970 with one physician to 2,616 patients in 1960 and one to 2,322 in 1970. This was considerably different from the state levels of 1:876 in 1970 and 1:1,135 in 1960 (Table 30). In Region IV, the physician/population ratio actually

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10. Information on the number of doctors in each county was obtained from the Board of Medical Examiners of the State of Arizona's Medical Directory, 1960 and 1970.

Table 30. Population, Physicians, and Physician/Population Ratio; State, Region and County; Arizona, 1960 and 1970.

Region and County	1970 Population	Number of Physicians	Physician/ Population Ratio	1960 Population	Number of Physicians	Physician/ Population Ratio
Region I:						
Pima	351,667	487	1:722	265,660	314	1:846
Maricopa	968,487	1,255	1:771	663,510	635	1:1,045
Yuma	60,827	38	1:1,601	46,235	32	1:1,445
Pinal	68,579	41	1:1,673	62,673	26	1:2,411
Total: Region I	1,449,560	1,821	1: 796	1,038,078	1,007	1:1,031
Region II:						
Mohave	25,857	13	1:1,989	7,736	4	1:1,934
Coconino	48,326	46	1:1,051	41,857	26	1:1,610
Yavapai	36,837	37	1:996	28,912	23	1:1,257
Total: Region II	111,020	96	1:1,156	78,505	53	1:1,481
Region III:						
Navajo	47,559	12	1:3,963	37,994	8	1:4,749
Apache	32,304	16	1:2,019	30,438	7	1:4,348
Gila	29,253	19	1:1,540	25,745	21	1:1,226
Total: Region III	109,118	47	1:2,322	94,177	36	1:2,616
Region IV:						
Graham	16,578	8	1:2,072	14,045	7	1:2,006
Greenlee	10,330	5	1:2,066	11,509	7	1:1,644
Cochise	61,910	34	1:1,821	55,039	28	1:1,966
Santa Cruz	13,966	12	1:1,104	10,808	9	1:1,201
Total: Region IV	102,784	59	1:1,742	91,401	51	1:1,792
State Total	1,772,482	2,023	1:876	1,302,161	1,147	1:1,135

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4 and Board of Medical Examiners of the State of Arizona's Medical Directors, 1960 and 1970.

declined slightly from 1:1,792 in 1960 to 1:1,742 in 1970. Region I, which is urban in structure, had the greatest improvement from 1:1,031 in 1960 to 1:796 in 1970 (decrease in number of people per doctor of 33.9 percent). This can be compared to the state level decrease in the number of people served per doctor of 22.8 percent.

The distribution of hospitals and hospital beds per capita also varied considerably among regions and counties in 1970 (Table 31). For example, Yavapai County had a bed/population ratio of 1/69 compared to Mohave County with a ratio of 1/488 (see Figure 4).

Spanish-Americans

Specific data was not available on causes of poor health among the Spanish-Americans but from the material in this research, it can be pointed out that Region IV has the greatest proportion of Spanish-American families (34.6 percent, Table 4) and also has the second smallest physician/population ratio of any region (Table 30). Deaths caused by influenza, pneumonia, and cerebrovascular in Region IV were greater than the average for the state (see Table 16).

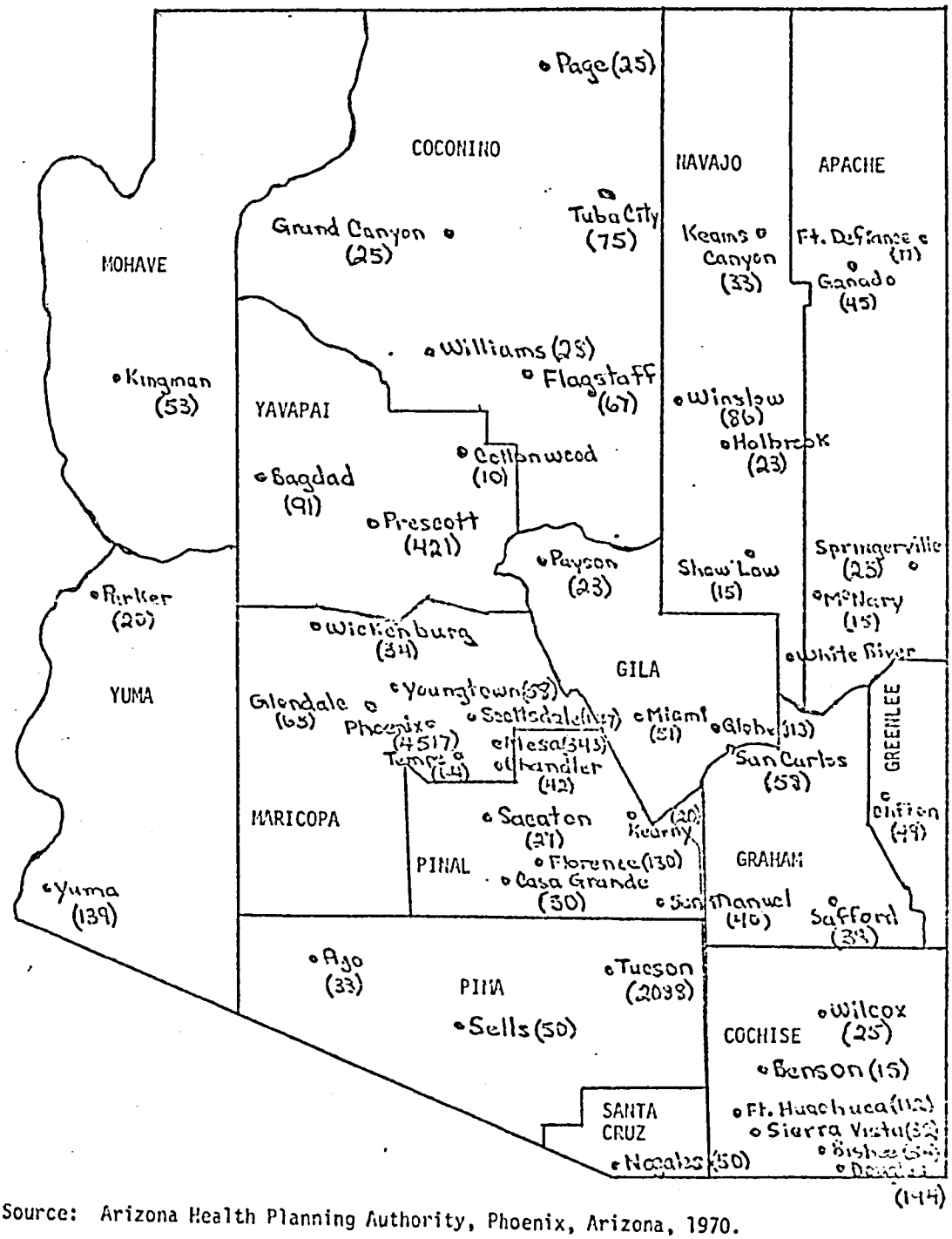
Indians

The predominately Indian Region III had a physician/population ratio substantially lower than that of the state. The 1970 ratio in Region III was 1:2,322, compared to the state average of 1:876. Perhaps the relatively small number of physicians in the region contributed to its having the highest rates of death from malignant neoplasms (cancer), cerebrovascular causes (stroke), and influenza and pneumonia (Table 16). The hospital bed/population ratio, however, was comparable to the state ratio--1/168 versus 1/179 (Table 31).

Table 31. Hospitals, Hospital Beds, and Hospital Bed/Population Ratio; State, Region and County; Arizona, 1970.

Region and County	Population	Hospitals	Number of Beds	Bed/Population Ratio
Region I:				
Pima	351,667	14	2,176	1:162
Maricopa	968,487	29	5,252	1:184
Yuma	60,827	3	159	1:382
Pinal	68,579	5	289	1:237
Total: Region I	1,449,560	51	7,876	1:184
Region II:				
Mohave	25,857	1	53	1:488
Coconino	48,326	5	220	1:220
Yavapai	36,837	4	532	1:69
Total: Region II	111,020	10	805	1:138
Region III:				
Navajo	47,559	6	209	1:228
Apache	32,304	4	195	1:166
Gila	29,255	4	247	1:118
Total: Region III	109,118	14	651	1:168
Region IV:				
Graham	16,578	1	38	1:436
Greenlee	10,330	1	49	1:211
Cochise	61,910	7	432	1:143
Santa Cruz	13,966	1	50	1:279
Total: Region IV	102,784	10	569	1:181
State Total	1,772,482	85	9,901	1:179

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4 and The Arizona Health Planning Authority, Phoenix, Arizona, 1970.



Source: Arizona Health Planning Authority, Phoenix, Arizona, 1970.

(Parentheses show number of beds per hospital.)

Figure 4. Arizona Hospitals and Beds Per Hospital

The 1969 Profiles of Phoenix Area Indians[11] described many of Arizona's reservation Indians as needing general medical care, maternal and child care, diabetes detection and follow-up, nutrition and sanitary facilities, mental health programs, accident prevention and rehabilitation, and all phases of health education. Poor health status was also influenced by problems of sanitation which was primarily related to inadequate housing and nutritional diseases. Indian health problems were further complicated by excessive drinking, large families, low incomes, and in many cases, extreme isolation from medical care.[12]

Causes of Farm Poverty

Although farm poverty is a very small part of all poverty in Arizona, some 30.4 percent of all farm families were classified as being poor in 1970 (Table 2). To understand the causes of these low incomes in Arizona, the various components of the profit equation (total revenue-total costs) are analyzed.

Total revenue equals product price times quantity, or the price times yield times acreage; and total cost equals the price of inputs times the quantity of inputs used. In Arizona, the low-production farms (those producing $20,000 or less) produce primarily cotton, alfalfa, sorghum, wheat and barley. Thus, changes in the price, yield and

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11. U.S. Department of Interior, 1969 Profiles of Arizona Indians, pp. 33 and 55.

12. Information on the number of doctors in each county was obtained from the Board of Medical Examiners of the State of Arizona's Medical Directory, 1960 and 1970.

acreage, plus the cost of inputs for these products will effect the net income of low income farmers.

The relative price of each of these crops (price received by Arizona farmers divided by the prices paid [U.S.] by farmers for their inputs) is shown in Table 32. For the period 1962 through 1970, the relative price of cotton and wheat trended downward and ceterus paribus diminished the income of low-production farmers producing cotton and wheat. The relative price of alfalfa varied up and down by as much as 25 percent--and led to income instability. The relative prices of barley and sorghum did not change greatly during the nine-year period, though the relative price of barley trended downward somewhat.

The downward trend in the price of cotton and wheat and the unstable price of alfalfa were, of course, due to changing supply and demand conditions for these crops in the U.S. and even the world but these will not be dealt with here.

The returns to farm size also influences the net income of farmers. Several empirical studies have indicated that increasing returns to farm size in the U.S. have been substantial. One reflection of these increased returns to farm size in Arizona are per acre costs of producing the same yield as farm size varied. These are shown in Table 33. As illustrated, the per acre cost of small farms was substantially greater than that of the large farm, and hence, ceterus paribus the net incomes would have to be lower.

Table 32. Prices Received[a] and the Ratio of Prices Received to Prices Paid for Selected Arizona Crops, 1962-1970.

Year	Index of Prices Paid By Farmers (1967=100)	Cotton (Lint)		Wheat		Barley		Alfalfa Hay[b]		Grain Sorghum	
		Cents/lb.	Price Ratio[c]	$/Bu.	Price Ratio[c]	$/Bu.	Price Ratio[c]	$/T	Price Ratio[c]	$/Bu.	Price Ratio[c]
1962	94	32.63	.3471	2.11	.0224	1.22	.0130	26.20	.2787	1.16	.0123
1963	95	33.19	.3494	1.96	.0206	1.25	.0132	30.90	.3253	1.22	.0128
1964	94	29.86	.3177	1.57	.0167	1.15	.0122	25.40	.2702	1.26	.0134
1965	96	29.29	.3051	1.56	.0163	1.21	.0126	25.00	.2604	1.23	.0128
1966	99	22.22	.2244	1.62	.0164	1.21	.0122	26.70	.2697	1.19	.0120
1967	100	29.84	.2984	1.52	.0152	1.17	.0117	30.80	.3080	1.17	.0117
1968	102	23.56	.2310	1.32	.0129	1.10	.0108	24.20	.2373	1.14	.0112
1969	106	22.44	.2117	1.48	.0140	1.23	.0116	28.20	.2660	1.32	.0125
1970	110	24.20	.2200	1.40	.0127	1.20	.0109	31.10	.2827	1.38	.0125

[a]Prices received are Arizona prices.

[b]Since Arizona yield/acre was considerably greater than the U.S. average alfalfa yield/acre and since most of Arizona production is used for local (state) consumption yield per acre for Arizona was used instead of U.S. yield per acre.

[c]The price ratio column is the price received by Arizona farmers divided by the index for prices paid by farmers (U.S.) for all commodities bought for use in production.

Source: Arizona Crop and Livestock Reporting Service, Arizona Agricultural Statistics, 1971, Phoenix, Arizona, March 1971 and United States Department of Agriculture, Agricultural Statistics 1971, U.S. Government Printing Office, Washington, 1971, pp. 479, 481.

Table 33. Total Operating Costs Per Acre for Selected Arizona Crops by Size of Farm; Region I; Arizona, 1967.

County and Crop	Size of Farm			
Pima and Pinal	0-220A	221-520A	521-960A	960A+
Cotton	$138.23	$121.62	$115.34	$113.46
Alfalfa	73.71	41.58	41.58	40.46
Wheat	33.67	32.99	33.10	32.91
Barley	34.04	32.86	32.97	32.16
Sorghum	42.10	39.71	39.69	40.61
Maricopa	0-160A	161-540A	541-1200A	1200A+
Cotton	$233.41	$236.82	$217.31	$213.71
Alfalfa	81.48	67.48	77.91	53.82
Wheat	54.86	56.90	54.26	52.17
Barley	53.48	55.03	52.77	50.10
Sorghum	63.29	66.78	63.81	60.13
Yuma	0-200A	201-480A	481-1000A	1000A+
Cotton	$281.92	$215.43	$213.45	$197.74
Alfalfa	127.70	89.71	86.55	77.98
Wheat	50.24	52.60	50.51	46.01
Barley	54.33	48.85	46.80	40.79
Sorghum	63.81	58.65	52.40	47.08

Source: Harold M. Stults, Supplement to Ph.D. Dissertation, "Predicting Farmer Response To A Falling Water Table: An Arizona Case Study," Department of Agricultural Economics, University of Arizona, August, 1967.

In a more general sense, the reason for the existence of low-production, low-income farms was the inability of the farmer himself to change occupations. This immobility of Arizona farm people was demonstrated in the previous section on migration.

CHAPTER V

TEST OF THE HYPOTHESES: A SUMMARY OF THE DATA

Hypotheses related to each component and cause of poverty are stated and tested in this chapter. The hypotheses were suggested by the literature review presented in Chapter II and data bearing on each hypothesis was presented in Chapters III and IV. In this chapter, the data are summarized and put in perspective by stating and analyzing one hypothesis for each component and each cause of rural poverty in Arizona.

The first section concerns hypotheses related to components and the second section to causes of rural poverty in Arizona.

Hypotheses Related to the Components of Arizona's Rural Poverty

Hypothesis #1

The amount and degree of rural poverty is greater than urban poverty, has changed over time, and differs among counties, regions, and ethnic groups.

In 1970, the number of rural poor was less than the number of urban poor (20,180 families compared to 48,888 families) but on a percentage basis, rural areas had a higher proportion of poor. In 1970, 23.5 percent of the rural families were poor, while 13.9 percent of the urban families were poor.

Over time, the number of rural poor families in Arizona declined from 23,943 families in 1960 to 20,180 families in 1970. The proportion of rural families who were poor also decreased between these two time periods. In 1960, 33.4 percent were in the poverty classification and by 1970, the rate had declined to 23.4 percent.

On a county basis, there was considerable variance in the proportion of rural families in poverty. In 1970, this ranged from 43.5 percent in Apache County to 11.0 percent in Greenlee County. The coefficient of variation of the proportion of families in the poverty category was 64.78 percent.[1]

By regions, the proportion of rural people in poverty also varied. The highest proportion was in Region III (a rural region) with 36.6 percent, and the lowest was in Region IV (also a rural region) with 18.0 percent.

The two most important ethnic groups in Arizona, Spanish-Americans and Indians, had a considerably higher proportion of their families in poverty than exhibited by all families. In 1970, some 21.1 percent of all Spanish-American families were in the poverty class. Data were not available to establish a percent of Indian families below the poverty threshold but for seven of the eleven reservations for which data were available, the average family income was less than $4,000. (The average income for the state as a whole was $10,501 in 1970.)

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1. The measure which expresses variation relative to magnitude is the relative variation. The most widely used measure of relative variation, called the coefficient of variation, divides the standard deviation by the mean. See Audrey Haber and Richard P. Runyon, General Statistics, (Reading, Massachusetts: Addison-Wesley Publishing Company, 1969), pp. 102-104.

A large proportion of rural Spanish-American and Indian families were poor in 1970. Also, the poor of these minority groups comprised a large proportion of all rural poor. Approximately 15 percent of all rural poor were Spanish-Americans and approximately 50 percent of the rural poor were Indians.

Hypothesis #2

The number of low-production farms has increased since 1959 and varies among counties and regions.

The number of low-production farms was less in 1969 (2,287 farms compared to 2,480) than in 1959, but on a percentage basis, the two years were about the same. In 1969, 38.8 percent of all farms had sales of farm produce less than $20,000, while in 1959, 34.6 percent of all farms were low-production farms.

On a county basis, there was considerable variance in the proportion of farms classified as low-production. In 1969, this ranged from 19.4 percent in Pinal County to 54.8 percent in Santa Cruz County. The coefficient of variation of the proportion of low-production farms in the state is 20.65 percent.

By regions, the proportion of low-production farms also varied. In 1969, the highest proportion was in Region II with 45.4 percent and the lowest was in Region I with 34.4 percent (Table 8).

Hypothesis #3

The amount and degree of rural unemployment is greater than urban unemployment, has changed over time, and differs among counties, regions, and ethnic groups.

The number of rural unemployed was less than the number of urban unemployed (5,153 persons compared to 21,190 urban persons) but on a percentage basis rural laborers had a higher rate of unemployment. In 1970, 4.9 percent of the rural labor force was unemployed, compared to 3.8 percent of urban labor forces.

Over time, the number of rural unemployed increased from 4,880 persons in 1960 to 5,153 in 1970, while the number of urban unemployed increased from 18,289 to 21,190 persons. The proportion of both rural and urban persons unemployed decreased between these two time periods. In 1960, 5.4 percent of the rural labor force was unemployed and by 1970, the rate had dropped to 4.9 percent. For the urban labor force, the rate decreased from 5.0 percent to 3.8 percent.

On a county basis, there was substantial variance in the unemployment rate of the rural labor force. In 1970, the unemployment rate ranged from 8.7 percent in Apache County to 2.5 percent in Santa Cruz County. The coefficient of variation of the proportion of the rural labor force unemployed was 3.87 percent.

By regions, the proportion of rural unemployment also varied. The highest unemployment rate was in Region III with 7.4 percent, and the lowest was in Region IV with 3.5 percent.

The Spanish-Americans and Indians had considerably higher levels of their labor forces unemployed than for the total labor force. In 1970, 5.0 percent of the Spanish-Americans and 35.8 percent of the Indian labor forces were unemployed compared to 4.0 percent of the total labor force. The Spanish-American labor force comprised a fairly large proportion of the state's rural unemployed. In 1970, 17.0 percent

of the unemployed rural labor force were Spanish-Americans. Specific census data is not yet available on the portion of the unemployed rural labor force which is Indian, but that which is available is in conflict with data from the 1969 Profiles of Arizona Indians. The later source indicates 19,300 Indians were unemployed in 1970, an amount considerably larger than the total rural unemployed (5,306) as given in the census.

Hypothesis #4

Rural housing conditions are poorer than urban housing conditions, have changed over time, and differ among counties, regions, and ethnic groups.

The total number of rural households lacking some or all plumbing facilities was more than those of the urban sector (9,940 rural households compared to 7,477 urban households) and on a percent basis, the rural areas had a much higher proportion of households lacking some or all plumbing facilities. In 1970, 14.5 percent of all rural households lacked some or all plumbing facilities compared to 1.9 percent of the urban households.

In 1960, the total number of rural households lacking some or all plumbing facilities was 9,275 or 9.0 percent of all rural households. In 1970, the only housing data available at the time of this research were for those households with incomes below the poverty level. For this group, 9,940 housing units lacked some or all plumbing facilities or 14.5 percent of all households with incomes below the poverty level.

On a county basis, there was considerable variance in the proportion of housing units occupied by those with incomes below the poverty level lacking some or all plumbing facilities. In 1970, this ranged from

73.6 percent for Apache County to 8.1 percent for Maricopa. The coefficient of variation of the proportion of housing units lacking some or all plumbing facilities was 78.58 percent.

By regions, the proportion of housing units occupied by those with incomes below the poverty level also varied. The highest proportion was in Region III with 57.9 percent, and the lowest was in Region I with 10 percent.

For the Spanish-American poor, the proportion of housing units lacking some or all plumbing facilities was less than the total poor of the state. Only 18.2 percent of the Spanish-American poor had housing units lacking some or all plumbing facilities, compared with 24.6 percent of all the housing units occupied by poor families.

The Indians, on the other hand, even though accurate statistics are not available, had very sub-standard housing. As stated in the 1969 Profiles of Phoenix Area Indians, the Indian housing conditions were sub-standard at best. The housing units were small with limited privacy, running water, or electricity.[2]

Hypothesis #5

Rural health conditions are poorer than urban health conditions, have changed over time, and differ among counties, regions, and ethnic groups.

The incidence of death from the state's five leading death-causing diseases was not significantly greater in the rural areas of the state

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2. Bureau of Indian Affairs, 1969 Profiles of Phoenix Area Indians, Phoenix Area Office, Phoenix, Arizona.

than the urban region. However, the causes of death did vary by region. Region III, which is primarily rural, had a much lower incidence of death from heart diseases and a much higher incidence of deaths from influenza and pneumonia than the state as a whole.

Over time, the number of deaths by the three leading death-causing diseases increased significantly. In 1956, there were 3,624 deaths from these diseases, and by 1968, these had increased to 6,767.

Region III, which is primarily Indian, had a much higher incidence of death from influenza and pneumonia than the rest of the state, but the incidence of heart disease was much lower in that region.

Hypotheses Related to the Causes of Arizona's Rural Poverty

Hypothesis #1

The level of rural educational attainment is less than urban attainment, has changed over time, and differs among counties, regions, and ethnic groups.

The number of rural residents 25 years old or over who had no formal schooling was nearly equal to those of the nonrural population in 1970 (11,013 rural persons and 11,713 nonrural). But on a percentage basis, the rural segment had a much higher proportion of persons with no schooling. In 1970, 6.0 percent of the rural population had no school, compared to 1.6 percent of the nonrural. Of rural people 25 years old and over, 32.4 percent had eight years or less of formal education, compared to 22.9 percent for the nonrural segment.

Over time, the number of rural people 25 years and over with no schooling decreased from 15,655 in 1960 to 11,013 in 1970. Those with

eight or fewer years of schooling decreased from 63,006 to 59,471. The proportion of rural residents with no schooling and eight years or less also decreased between the two time periods. In 1960, 10.1 percent had no schooling and 47.1 percent had eight years or less compared to 6.0 and 32.4 percent, respectively in 1970.

On a county basis, there was also a wide variation in the proportion of rural people 25 years and over with no schooling and those with eight years or less. In 1970, the percent of those with no schooling ranged from 27.2 percent in Apache County to .4 percent in Mohave County. Those with eight years or less ranged from 52.4 percent in Apache County to 18.8 percent in Pima County. The coefficient of variation of the proportion of persons 25 years old and over with no schooling and those with eight years or less was 124.75 percent and 27.07 percent, respectively.

By regions, the rural educational attainment also varied. The highest proportion of those with no schooling was in Region III with 16.5 percent and the lowest was in Region IV (the most urban region) with 2.3 percent. As for those with eight years or less, Region III again had the highest rate at 43.7 percent and Region II, the lowest at 26.4 percent.

The rural Spanish-Americans had a much larger proportion of their population 25 years old or over with no schooling and with eight years or less than the white population. In 1970, 9.6 percent of the Spanish-Americans had no schooling and 55.8 percent had eight years or less compared to 1.8 percent and 25.7 percent, respectively for the white population.

Data on educational attainment of Arizona Indians were not available to tabulate comparisons but it is estimated that 10 percent

of all U.S. Indians over age 14 have had no schooling and nearly 60 percent have less than an eighth grade education.[3]

Hypothesis #2

The tendency of rural nonfarm residents to migrate is less than for any other segment of the population and varies among ethnic groups.

Between 1965 and 1970, the tendency of rural nonfarm residents to migrate was slightly greater than any other segment of the population. During that time, 59.7 percent of the rural nonfarm residents changed houses compared to 58.7, 58.9, and 45.3 percent for the state as a whole, urban and rural farm segments, respectively. Furthermore, nearly 56 percent moved to a different county compared to 50.7 and 40.7 percent for the urban and rural farm segments, respectively.

Rural nonfarm Spanish-Americans tended to be less mobile than the state rural nonfarm residents with 48.0 percent living in the same house compared to 40.3 for the state. A much larger proportion of those Spanish-Americans who did move remained in the same county (62.9 percent) than the total rural nonfarm population (44.4 percent). And a greater proportion of the Spanish-Americans who moved to a different county moved to a different county in the same state (42.5 percent) than the total rural nonfarm population (28.0 percent).

There was no data available on the mobility of the rural nonfarm Indian population but it was believed that strong tribal ties and customs kept off-reservation mobility low. On the other hand, mobility within the reservations, especially the larger ones, was thought to be extensive.

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3. U.S. Congress, House, The American Indian.

Hypothesis #3

The mobility of farm families is less than other segments of the population and varies among counties, regions, and ethnic groups.

The farm population was the most immobile of any segment of the population. Nearly 55 percent of the farm population was in the same house in 1970 as in 1965. This was considerably higher than the state rate of 41.3 percent. And almost 60 percent of those farm people who did move, moved to another house in the same county.

The number of low-production farms in Arizona was only 10 percent less in 1969 than in 1959, thus suggesting that migration out of low-production farming in general was not occurring. There were 2,197 low-production farms in 1969 and 2,481 in 1959.

Even though the number of farm families increased between 1960 and 1970, the total farm population declined by 7.0 percent (from 49,421 farm residents in 1960 to 45,958 in 1970). This is explained by a decrease in mean family size for farm residents from 4.56 persons in 1960 to 4.16 in 1970. The decreasing family size may be rationalized by farm youth leaving the relatively large number of low income, low-production farms in the state in search of better opportunities.

The data indicate that migration from farms varied significantly among both regions and counties. For example, between 1959 and 1969, the number of low-production farms decreased by about 19 percent in Region IV, compared to a decrease of approximately 2 percent in Region II.

Data pertaining to the migration of Spanish-American and Indian farmers was not available.

Hypothesis #4

The age of rural residents is greater than that of urban residents, has changed over time, and varies among counties, regions, and ethnic groups.

The median age of rural residents was less than that of urban residents in 1970 (25.5 years for rural and 26.5 years for urban).

Over time the median age increased for the state's rural population but declined in the urban sector. The rural median age increased from 22.9 in 1960 to 25.5 years in 1970 and the urban median age decreased from 26.8 years to 26.5 in 1970.

On a county basis in 1970, there was considerable variance in the median age of rural residents. The median age ranged from 36.8 years in Yavapai County to 17.9 in Apache County. The coefficient of variance of the median age for the county's rural populations was 21.2 percent.

By regions, the rural median age and proportion of rural residents over 55 years of age also varied. The highest median age and the highest proportion of residents over 55 years was in Region II with a median age of 30.4 years and 21.9 percent of the population over 55. Region III (large Indian population) had the lowest proportions for youngest population with a median age of 20.0 years and only 11.8 percent of its rural residents over 55 years of age.

Hypothesis #5

Cultural characteristics related to economic productivity of Arizona's minority ethnic groups are more restricting than those of the Anglo culture.

As indicated in Chapter IV, cultural characteristics of the Indians and Spanish-Americans appear to differ from the Anglo culture and these characteristics likely effect their standard of living negatively. This is especially true for the Indians as the Spanish-Americans have to a large extent assimilated into the Anglo culture.

Hypothesis #6

Rural health services are poorer than urban health services, have changed over time, and differ among counties, regions, and ethnic groups.

There were no health service data specifically available for the rural segment of the population but the services of Regions II, III, and IV, which were primarily rural, varied considerably from those of the predominately urban population of Region I. The 1969 physician/population ratios for Region II, III, and IV were 1:1,156, 1:2,322, and 1:1,742, respectively, compared to 1:796 for Region I.

Even though services were poor in the rural regions in 1970, they did improve since 1960. In 1960, the rural regions had physician population ratios of 1:1,481, 1:2,616, and 1:1,792 for Regions II, III, and IV, respectively, compared to 1:1,156, 1:2,322, and 1:1,742, respectively, for 1970. The state ratio improved from 1:1,135 in 1960 to 1:876 in 1970.

On a county basis, there was substantial variance in the physician/population ratio. In 1969, the ratio varied from 1:2,072 in Graham County to 1:722 in Pima County. The coefficient of variation of the proportion of people served by each physician was 153.96 percent.

Specific data were also not available for the health services to the minority ethnic groups in the state but Region III, with its

predominate Indian population, had the smallest physician population ratio (1:2,322) and Region IV with its large Spanish-American population, had a ratio of 1:1,742 compared to the state with 1:876.

Hypothesis #7

Farm poverty has been caused by a relative decline in farm product prices, the inability of small farmers to realize important returns to farm size, immobility of farm people, and the inability of Federal farm programs to cope with the farm poverty program.

Between 1962 and 1970, the price of farm crops relative to the prices paid by farmers declined for two of the five principle crops grown on low-production farms. The price ratio for cotton trended downward from a high of .35 in 1962 to a low of .21 in 1969, and the price ratio of wheat fell from a high of .022 in 1962 to a low of .013 in 1970. The relative price of alfalfa varied considerably, and led to income instability, ceterus paribus, for those low production farmers producing this crop. The relative price of barley and sorghum did not change greatly during the period.

Data indicate that the returns to farm size in Arizona are substantial. For example, in 1967, the per acre cost of producing cotton in Yuma County was estimated to decrease from $282 for a farm of 0-220 acres to $198 for a farm with 960 or more acres. Low-production farms are simply not large enough to take advantage of these important returns to farm size.

One of the most important reasons for the high proportion of low income farmers compared to all farmers is the low level of mobility

out of farming. This conclusion is drawn from the information given in a previous hypothesis.

While statistics show how continued technical transformation and policy implications of American agriculture have aided the commercial farmers, there is also evidence that the small farms are not receiving equal assistance. Although data specifically for Arizona is limited, information concerning the impact of farm programs on low-production farms for the U.S. is enlightening. This information indicates that small farms receive a relatively small share of government payments. In the U.S., 86.6 percent (in Arizona, 62.0 percent) of all farms were Class III or smaller ($20,000 annual sales or less) and these farms received only 33.6 percent of all federal farm payments.[4] The revenue did not greatly effect their relative economic positions.

A particular example for Arizona was the distribution of benefits from the 1970 Upland Cotton Program. In the 1970 program, 237 small Arizona farms[5] or only 12.7 percent of all participating farms, took

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4. Iowa State, Benefits and Burdens, p. 53.

5. Small farms were defined as those with an allotment of not more than 10.0 acres, or on which the projected production was not more than 3,600 pounds from which no acreage was released. The special provisions for small farms in the 1970 Upland Cotton Program were such that small farms could plant their full allotment and in addition to the price support payment, could earn a small farm payment of 11.95 cents a pound on the farm projected yield on 35 percent of the allotment. This was in contrast to other participating farms who were eligible for a price support payment of 16.8 cents a pound on a quantity of cotton determined by multiplying the farm domestic allotment (65 percent of the farm allotment) by the farm projected yield. U.S. Department of Agricultural, 1970 Upland Cotton Program Summary, Agricultural Stabilization and Conservation Service, (Washington, D.C.: U.S. Government Printing Office, December, 1970), p. 4. (See Chapter II for further discussion of federal farm programs.)

part in its program. These 237 farms received a total of $201,218 in price support payments or 4.7 percent of all Arizona payments under this program. On the average, the payment was only $849 per small farm.

CHAPTER VI

POLICY IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Policy Implications and Relevance of Current Programs Concerning the Components of Rural Poverty

The data analyzed in this study, along with information from other empirical studies discussed in the literature review of Chapter II, are used to draw out policy implications for those concerned with rural poverty in Arizona. Also, this section presents data on the present programs now being funded in Arizona to help alleviate the rural poverty problem. A "rough" evaluation of the adequacy of these programs is then made.

Significance of Rural Poverty

Rural poverty is a significant problem in Arizona and deserves the attention of state, regional, and local planners and decision makers. In 1970, 20,247 rural families were poor. These constituted 23.5 percent of all rural families and 29.2 percent of all the poor families in the state. The incidence of poverty was much greater in rural areas than urban areas with 1 in 4 rural families being poor compared to 1 in 7 in nonrural areas. This implication is reinforced by data on housing conditions which suggest that rural housing is relatively poorer than urban housing.

The Office of Economic Opportunity in Arizona was the primary organization designed specifically to deal with poverty in the state.

In fact, the main purpose of this office was to coordinate a large number of public and private institutions in the state (mainly through CAA's--Community Action Agencies) in finding and applying means to deal with poverty. For the calendar year ending 1971, the Arizona OEO spent $48,533,278 toward this purpose.[1] Of this total, approximately $20 million were authorized to rural CAA's. Since one-third of the state's poor live in rural Arizona, the allocation of OEO funds is somewhat commensurate with the relative size of the problem.

In addition to the OEO funds, nearly $42 million[2] were spent through various other programs to assist the state's disadvantaged. Specific OEO and non-OEO programs will be presented as they relate to each of the remaining implications.

Significance of Farm Poverty

The rural poverty problem in Arizona is essentially a nonfarm problem and programs designed to alleviate rural poverty should focus on the rural nonfarm population. A large percentage--30.4 percent--of the state's farm families were poor but they constituted only 4.6 percent of all the state's poor families and only 15.5 percent of all rural poor families. Thus it is appropriate that most programs are designed to assist all rural poor. In 1971, only approximately $1.5 million was authorized by the USDA specifically for farm operating loans.[3]

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1. The ratio of federal funds to nonfederal OEO funds was approximately 1 to 8. Arizona State Economic Opportunity Office, Summary of OEO Grants for Calendar Year Ending 1971, (Phoenix: 1971).

2. Office of Economic Opportunity, Federal Outlays in Arizona, (Washington, D.C.: U.S. Government Printing Office, 1971).

3. Ibid.

Rural Unemployment

Programs to decrease unemployment of rural people deserve emphasis. In both 1960 and 1970, levels of unemployment in rural areas were higher than in urban areas and were higher than "normally accepted levels." In 1960, 5.7 percent of the rural labor force was unemployed, and in 1970, 4.9 percent were unemployed.

There is a strong effort being made to improve the education and skill levels in the state which should assist in decreasing unemployment. Some of the related programs are: USDA and HEW Manpower Development and Training Activities ($4,262,876 - 1971) and Adult Basic Education ($3,922,524).[4]

Rural Minority Groups

The problems of Arizona's rural minority groups deserve special attention.

In 1970, over half of all the rural poor were Spanish-Americans and Indians. Data from the 1969 Profiles of Arizona Indians indicates that approximately 50 percent were Indians and 15 percent were Spanish-Americans. Furthermore, a high proportion of the total rural unemployed were Indians and Spanish-Americans. In 1970, 17 percent of the rural unemployed were Spanish-American according to the Census. The 1969 Profiles of Arizona Indians indicates that 35.8 percent of the reservation labor forces were unemployed in 1969. Health and housing conditions and education also tended to be poorer for these groups.

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4. Ibid.

Arizona Rural Effort, Inc., which was designed to assist the rural disadvantaged of Cochise, Gila, Graham, Greenlee, and Yuma Counties (these counties had 24 percent or greater proportions of Spanish-Americans), spent $1,464,893 in 1969 toward that goal. Other OEO programs which served counties with high rural Spanish-American concentrations were: Greenlee County Committee for Economic Opportunity ($65,000); Pinal County Community Action Program ($719,000); Cochise County United Recovery Enterprise, Inc. ($237,000); Gila County Community Action Agency ($135,000); Yuma County Economic Opportunity Council, Inc. ($154,000); and the Graham County Committee for Economic Opportunity, Inc. ($100,000). Santa Cruz County, with 77.3 percent of its population being Spanish-American, received assistance through the Committee for Economic Opportunity, Inc. which spent $3,700,000 to alleviate poverty in Pima and Santa Cruz Counties in 1969.[5]

Problems of unemployment among the Indian population are especially acute, and deserve special policy considerations. On the average, some 36 percent of Arizona's Indian labor force was unemployed.

In 1969, there were eleven CAA's that dealt with the Indian Reservations in Arizona. These received nearly $15,000,000 in federal and nonfederal funds. Over $10 million of this amount was authorized to the Office of Navajo Economic Opportunity which serves the Navajo Indian Reservation, the largest and poorest reservation in the state. The

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5. Arizona State Economic Opportunity Office, Summary of OEO Grants for the Calendar Year Ending 1971.

funds were allocated to the main CAA programs: Head Start, Adult Basic Education, and Neighborhood Youth Corps.[6]

Special health programs designed to alleviate influenza and pneumonia on some Indian Reservations (and localized areas of heavy Spanish-American concentration--namely Graham, Pinal, and Gila Counties) seem to be warranted. Region III, with its predominately Indian population, had a much higher incidence of death from influenza and pneumonia (15.3 percent) than the state as a whole (6.3 percent).

The $15 million of CAA funds was supplemented by $28 million non-OEO funds to improve the Indian health conditions and services.[7]

Policy Implications and Relevance of Current Programs Concerning the Causes of Rural Poverty

Rural Education

Educational levels of Arizona's rural population are relatively low, and programs designed to alleviate rural poverty should focus on improving education. Low educational attainment has been viewed as one of the major causes of rural poverty and many studies point out that income levels vary inversely with the level of education. Griliches estimated that for every dollar invested in elementary education, graduates would generate a return of $1.41.[8]

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6. Ibid.

7. Office of Economic Opportunity, Federal Outlays in Arizona and Arizona State Economic Opportunity Office, Summary of OEO Grants for the Calendar Year Ending 1971.

8. Griliches, "Notes on the Role of Education in Production Functions and Growth Accounting."

In Arizona, over 32 percent of the state's rural population 25 years old or over had eight years schooling or less and 6 percent had no schooling compared to 23 and 1.6 percent, respectively, for the non-rural population. Thus, strong programs to increase the educational level of those in rural poverty could yield substantial returns.

Specific educational programs which may have merit are adult basic educational courses with emphasis on a diploma or G.E.D. (General Equivalency Diploma) and vocational or skill development assistance for those above the school age, more and better quality instructors in current rural primary and secondary school systems, and pre-school guidance and preparation.

Current CAA programs like Head Start, Neighbor-Youth Corps, and Adult Basic Education are designed to aid the pre-school, school age, and post-high school age groups and if the same degree of funding is maintained over time, they will surely meet some of the needs. These three programs received nearly $20 million in 1971 and 85 percent was allocated to rural areas.[9]

Minority Education

Educational levels of Arizona's rural minority groups are extremely low, and programs designed to improve the living standards of these groups should focus on educational improvement. Over 7 percent of the Spanish-Americans 25 years old and over had no schooling

9. Office of Economic Opportunity, Federal Outlays in Arizona and Arizona State Economic Opportunity Office, Summary of OEO Grants for the Calendar Year Ending 1971.

and 50 percent had eight years or less. Specific data were not available on the Indians but Region III (the poorest region in 1970) with its large Indian population had 16.5 percent with no school and 41.3 percent with less than eight years. Current CAA programs mentioned above are also serving the rural minority groups.

Age of the Rural Population

Although data are incomplete, it is likely that a relatively high portion of rural poor are elderly. If this is the case and policy makers are concerned about the standard of living of the rural poor, then emphasis on direct subsidy programs to the elderly may be warranted. Studies[10] indicate that age is a determinant of income and that after some age, around 55, people's productivity declines. Because the costs of retraining these older people are likely to be relatively high and their subsequent earning stream relatively short, direct subsidies (income, housing, health, etc.) may be the most economical solution to alleviating this problem.

In 1970, approximately 18 percent of the rural and urban populations were over 55 years old. But since many elderly people are attracted to Arizona's urban areas for retirement, there may be a larger portion of rural than urban poor who are elderly.

In 1971, expenditures of over $9 million went to Old Age Assistance. This program (rural and urban assistance) was designed to develop

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10. Clawson, Policy Directions, p. 45. Also see U.S. Department of Commerce, Current Population Reports.

new employment and effective referral to and utilization of existing health, welfare, employment, housing, education, etc.[11]

Rural Migration

Mobility rates of Arizona's rural counties are not commensurate with the relatively high rural unemployment and poverty rates found in these counties. Thus programs to increase outmigration are warranted. Previous research indicates that the annual income differentials associated with movement from rural areas to small urban areas and from rural areas to large urban areas were $475 and $850, respectively.[12] Since the rural population declined in only two of Arizona's fourteen counties between 1960 and 1970, rural poverty programs to speed outmigration appear appropriate.

As of 1971, there were no programs designed specifically to increase rural outmigration though educational programs may facilitate mobility.

Rural Farm Migration

The low mobility rates of Arizona's rural farm population are likely an important cause of the much higher incidence of poverty within that group. Policy makers who are concerned about the standard of living of the rural farm people should emphasize means of improving their mobility.

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11. Office of Economic Opportunity, Federal Outlays in Arizona.

12. This same research indicates the time distribution of these earnings. Migration from rural areas to small cities and large cities was virtually zero for the first five years, then $500 and $1,400 per year for the next 30 years. Richard F. Wertheimer II, The Monetary Rewards of Migration Within the U.S., (Washington, D.C.: The Urban Institute, March 1970), pp. 38 and 44.

At least one study suggests rather high returns to off-farm migration. For example, it was found that heads of families who grew up on farms but moved to an urban area earned an average of $1,519 a year more than those who remained in a rural area.[13]

A lack of off-farm mobility is suggested by the increase in farm families which occurred between 1960 and 1960 (10,421 to 10,482) and the percent of the farm population living in the same house in 1970 as in 1965. Nearly 55 percent of Arizona's farm population (compared to 41.3 percent for the state) was in the same house in 1970 as 1965.

There are several types of programs which might increase rural farm mobility. These include monetary assistance for moving costs, general education, skills development, job placement, and opportunities for improved housing at the alternative residence.

Several of the current (1971) OEO programs should facilitate mobility. These include Assistance to Migrants ($901,862 - 1971); Adult Basic Education ($3,922,524); USDA and HEW Manpower Development and Training Activities ($262,876); and Vocational Rehabilitation Service-Basic Support ($5,037,536).[14]

Minority Cultural Characteristics

Cultural characteristics of Arizona's Indians and Spanish-Americans inhibit their economic advancement, and specific programs to alter certain of these characteristics will likely increase their standard of living.

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13. John B. Lansing and James N. Morgan, "The Effect of Geographical Mobility on Income," Journal of Human Resources, II, No. 4, (Fall 1967), pp. 449-460.

14. Office of Economic Opportunity, Federal Outlays in Arizona.

Large family size and language barriers are two traits which limit per capita income and earning capacity. The mean family size for the Spanish-American was 5.05 compared to 3.80 for white families. Indian data was not available but Apache and Navajo Counties had the state's largest family sizes at 5.73 and 5.60, respectively.

Current programs are designed to change these conditions. In 1971, $3,338,111 was authorized for family planning and child health improvement and the Bilingual Education Program received $966,214.[15]

Rural Medical Services and Facilities

Rural medical services are much poorer than those of urban areas and a more efficient rural health service program may increase productivity and improve standards of living of rural poor. Studies point out that lack of medical personnel may cause poor standards of living in rural areas and they have a direct influence on the productiveness of rural poor.[16] In Arizona, the physician/population ratio was much lower in rural areas than in urban areas. Thus, programs to effectively improve this ratio appear justified.

Current programs seem to be providing some assistance, especially to the Indians. HEW authorized over $28 million to Indian Health Services and Facilities in fiscal year 1971 for Arizona. Non-Indian programs were: Staffing of Community Health Centers ($1,593,770); Health Manpower Institution Support ($753,868); and Health Manpower

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15. Ibid.

16. U.S. Department of Agriculture, The Economic and Social Condition of Rural America in the 1970's, p. 78.

Student Assistance ($217,164). Also, the Arizona Health Planning Authority has recently been established (1968) to suggest a more efficient means of providing health services to all Arizonans.[17]

Suggestions For Future Research

Government interest (at least verbal) in alleviating poverty in rural Arizona is high and the importance of rural poverty as a problem has been established. This final section presents broad areas for future research into the economics of alleviating rural poverty in Arizona which will be useful to government decision makers.

1. Research on the economics of towns and cities as producing units: The federal government is placing much emphasis on revitalizing rural America in an attempt to move people away from the problems of large metropolitan areas. In Arizona, one of the favorite projects of state planners and extension groups is to help the individual rural town plan its development. The research reported in this thesis establishes that it is these nonfarm rural who constitute the major portion of rural poverty, and so at first glance such development efforts seem warranted. Yet, in an empirical sense, we know very little about the factors contributing to the development of a town or city. More empirical information is necessary to determine the effects of changes in various kinds and levels of education, numbers of people, amounts of capital, transportation, and communications, etc. on town vitality.

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17. Arizona Health Planning Authority, (Phoenix, Arizona, June 5, 1972).

2. Research on the economics of providing social overhead capital to rural residents: As seen, the rural poor have even poorer health services and education than the urban poor. We also know that many rural towns have deficient water and sewer systems, solid waste disposal facilities, recreational facilities, etc. Knowing the costs and benefits of providing these to the rural community is extremely important, but they are largely unknown. Included in this research should be a study of the economics of consolidated use by several communities of these types of services.

3. Research into the economics of migration: In spite of the relatively high incidence of rural poverty, the rural counties have not lost population during the last ten years (except Greenlee County) as might be expected. Furthermore, current government policy at the national, state, and local level is frequently geared to keeping people in their present rural community. We need a better understanding of the costs and benefits to the poor--and to society in general--of migration from the rural community. An economic evaluation of specific programs to aid migration, such as general education and skill training, investments in the unemployment service, improved information media, and relocation subsidies, should be included in this research.

4. Specific research in each of the above areas for the Spanish-Americans and Indians: Poverty problems of the minority groups are more acute than for the rural poor in general. The minority groups--especially the Indians--exhibit cultural characteristics which distinguish their poverty setting from other rural poor. In spite of this, and popular

interest in helping minorities, empirical information is limited. For example, it is not even known how many rural Spanish-Americans are poor.

APPENDIX I

DEFINITIONS

Rural: The Bureau of the Census[1] defines the rural population to include all persons living in the open country or in towns of less than 2,500 people. It further subdivides the rural population into rural farm or rural nonfarm residents. This classification is more in terms of residence than of occupational association or of economic dependence on agriculture and is the definition used in this thesis.

Farm-Nonfarm: The method of determining farm-nonfarm residence in the 1970 census is the same as that used in the 1960 census and in the "Current Population Surveys" since 1960, but differs from that used in earlier surveys and censuses. According to the current definition, the rural farm population consists of all persons living in rural territory on places of less than 10 acres yielding agricultural products which sold for $250 or more in the previous year, or on places of 10 acres or more yielding agricultural products which sold for $50 or more in the previous year. Rural persons in institutions, motels, tourist camps, and those living in rented places where no land is used for farming are not classified as being part of the farm population. The nonfarm population comprises all those people who are classified as rural but do not live on farms as just defined.

Urban: The urban population comprises all persons living in urbanized areas and in places of 2,500 or more outside of urbanized

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1. U.S. Department of Commerce, Bureau of the Census, 1970 Arizona Census of Population, General, Social and Economic Characteristics, PC(1)-C4, (Washington, D.C.: U.S. Government Printing Office, 1970), p. VIII.

areas. The concept of urbanized areas was adopted by the Bureau of the Census in 1950 to provide a better separation of urban and rural population near the larger cities. An urbanized area contains at least one city of 50,000 population (or twin central cities with a combined population of at least 50,000) and may be thought of as divided into the central city, or cities, and the remainder of the area which has come to be called the urban fringe. As of 1970, there were five Arizona cities with 50,000 or more residents: Phoenix, Tucson, Scottsdale, Tempe, and Mesa. Of these, Phoenix, Scottsdale, Tempe, and Mesa are all within what is termed the greater Phoenix area. Due to the geographical organization of the State, four cities or urbanized areas service the major portion of the State. These four cities are Phoenix, Tucson, Flagstaff, and Yuma. The rest of the State is primarily rural in nature and devoted to the mineral and agricultural industries.

Poverty: The poverty level in 1960 was set at an income level of $3,000 for this study. The actual poverty threshold in 1960 was $3,037 for a family of four which was computed by deflating the 1970 poverty threshold of $3,944 for a family of four by the appropriate consumer price index for 1960. The poverty threshold varies in relationship to family size, sex of head of household and farm-nonfarm residence. For 1970, the threshold varies from $1,576 for an unrelated female individual 65 years of age or over to $6,486 for a family of seven or more persons with a male head. Poverty thresholds in Table 2 and Table 3 are set at $3,000 and $4,000 for 1960 and 1970, respectively, because they closely approximate the average poverty threshold established

by the Federal Government, and because of the data breakdown of income given in the census. The census specifies the number of people in each of several thousand dollar income categories; under $1,000; $1,000-$1,999; $2,000-$2,999; etc. (also see Table 1).

APPENDIX II

THE RURAL POVERTY SETTING

National Perspective

Most antipoverty efforts, until recently, have been channeled toward urban poverty. In fact, few programs had a major impact on rural America until the passage of the Economic Opportunity Act of 1964, by which Congress declared it to be the policy to obliterate all U.S. poverty. President Johnson, by his creation of the National Advisory Commission on Rural Poverty, acknowledged the fact the rural poverty was important enough to require immediate and special attention. The Nixon Task Force on Rural Development represents another federal thrust indicating the national importance of rural development.

Table 3 shows the number of persons in poverty in both rural and urban areas of the U.S. in March 1965.[1] There was proportionately more poverty among rural residents than among urban residents. On the average, one in eight residents in our metropolitan areas was poor, compared with one of fifteen in the suburbs and one in four in rural areas. About 30 percent of the total U.S. population lives in rural areas, but 40 percent of the nation's poor live there. Three out of four of the rural poor live in small towns and villages rather than on farms, and of the 14 million rural poor, 11 million are white. Even with this high number of poor whites, proportionately more Negroes are poor. Three out of five rural nonwhite families are poor, and 90 percent of them are concentrated in the nation's poorest counties. Low income whites are more widely scattered.

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1. President's National Advisory Commission on Rural Poverty, The People Left Behind, p. 3.

Arizona Perspective

Arizona's total population increase of 36.1 percent in the ten-year interval between 1960 and 1970 was great enough to rank Arizona as the nation's third fastest growing state. Florida and Nevada were the only states with faster rates of growth. Table 1 gives the state and county populations for 1960 and 1970, and the percentage of the state's total population residing in each county for those years. As can be seen, approximately 75 percent of the state's total population is located in Pima and Maricopa Counties.

A breakdown of age and race for 1960 and 1970 is given in Tables 2, 3, and 4. The population 45 years old and over made up a larger portion of the state's total population in 1970 (28.4%) than in 1960 (24.6%). This is probably due to the attractiveness of Arizona's climate for those seeking retirement living.

The state is becoming less rural. In 1960, 25.5 percent of the state's 1,302,161 residents were rural. Of the total population, 21.7 percent were rural nonfarm and 3.8 percent were rural farm. In 1970, 20.5 percent of the state's 1,772,482 residents were rural, with 17.9 percent rural nonfarm and 2.6 percent rural farm.[2]

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2. U.S. Department of Commerce, 1960 and 1970 Arizona Census of Population.

Table 34. Persons in Poverty by Urban and Rural Residence; March 1965[a].

Item	Persons at all Inc. Lev.		Poor Persons		Percent Poor
	Number (Millions)	Percent Distribution	Number (Millions)	Percent Distribution	
United States	189.9	100.0	33.7	100.0	17.7
Total Rural	55.3	29.1	13.8	40.9	25.0
Farm	13.3	7.0	3.9	11.6	29.3
Nonfarm	42.0	22.1	9.9	29.4	23.6
Total Urban	134.6	70.9	19.9	59.1	14.8
Small Cities	27.1	14.3	6.4	19.0	23.6
Metropolitan Areas	107.5	56.6	13.5	40.1	12.6
Central Cities	58.6	30.8	10.2	30.3	17.4
Suburbs	48.9	25.8	3.3	4.8	6.7

[a]Income data relate to 1964. Poverty statistics presented here are preliminary estimates based on the Social Security Administration poverty lines for urban and rural nonfarm. However, the Commission calculated that farm families need about 85 percent as much income as comparable families in urban areas. The Social Security Administration poverty line used 70 percent as farm-nonfarm ratio. An updating of this table will not be possible until final release of the 1970 U.S. Census of Population.

Source: President's National Advisory Commission on Rural Poverty, The People Left Behind, p. 3.

Table 35. Population of Arizona Counties and Percent of Total Population in Each; 1960-1970.

County	1960 Census	Percent of 1960 Total	1970 Census	Percent of 1970 Total	Change 1960-1970
State Total	1,302,161	100.0	1,772,482	100.0	36.1
Apache	30,438	2.3	32,304	1.8	6.1
Cochise	55,039	4.2	61,910	3.5	12.5
Coconino	41,857	3.2	48,326	2.7	15.5
Gila	25,745	2.0	29,255	1.7	13.6
Graham	14,045	1.1	16,578	0.9	18.0
Greenlee	11,509	0.9	10,330	0.6	-10.2
Maricopa[a]	663,510	51.0	968,487	54.6	46.0
Mohave	7,736	0.6	25,857	1.5	234.2
Navajo	37,994	2.9	47,559	2.7	25.2
Pima[a]	265,660	20.4	351,667	19.8	32.4
Pinal	62,673	4.8	68,579	3.9	9.4
Santa Cruz	10,808	0.8	13,966	0.8	29.4
Yavapai	28,912	2.2	36,837	2.1	27.4
Yuma	46,235	3.6	60,827	3.4	31.6

[a]Standard Metropolitan Statistical Area, Bureau of the Census, 1960 and 1970.

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 36. Demographics of Arizona; 1960 and 1970.

	1960	Percent	1970	Percent	Percent Change
Total Population	1,302,161	100.0	1,772,482	100.0	+ 36.1
Race					
White	1,169,517	89.8	1,604,948	90.5	+ 37.2
Negro	43,403	3.3	53,344	3.0	+ 22.9
Indian	83,387	6.4	95,812	5.4	+ 14.9
Other Races	5,854	.4	16,796	.9	+186.9
Unallocated	--	.1	1,582	.09	--
Age					
Under 5	166,966	12.8	158,675	9.0	- 5.0
5 to 14	285,830	22.0	378,856	21.4	+ 32.5
15 to 24	186,789	14.3	317,923	17.9	+ 70.2
25 to 44	342,907	26.3	412,166	23.3	+ 20.2
45 to 64	229,444	17.6	341,806	19.3	+ 49.0
65 and Over	90,225	6.9	161,474	9.1	+ 79.0

Source: 1970 Arizona Census of Population and Housing, Bureau of Indian Affairs, Phoenix Area Office, Statistics Division, Phoenix, Arizona.

APPENDIX III

SUPPLEMENTARY TABLES

Table 37. Families With Annual Incomes Below the Poverty Level[a]; Arizona, 1960 and 1970.

Income Levels	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	State Total
							1970								
All Families	6,058	14,865	10,333	7,247	3,607	2,698	285,575	7,270	9,738	87,856	15,254	3,032	10,071	14,794	438,389
Under $1,000	1,124	532	575	217	162	28	5,067	196	1,004	2,132	582	79	363	340	12,401
$1,000-$1,999	574	547	500	308	194	62	6,331	215	672	2,837	697	134	480	611	14,212
$2,000-$2,999	511	747	529	402	235	70	9,416	417	854	4,147	975	169	775	815	20,062
$3,000-$3,999	424	834	460	435	228	109	11,264	420	623	4,824	966	252	731	917	22,487
No. of Families Below Poverty Level	2,633	2,710	2,064	1,362	819	269	32,078	1,248	3,153	13,922	3,220	634	2,349	2,683	69,162
Percent of All Families Below Poverty Level	43.5	18.2	20.0	18.8	22.7	10.0	13.1	17.2	32.4	15.8	21.1	20.9	23.3	18.1	15.8
							1960								
All Families	5,409	13,103	9,331	6,187	3,181	2,736	162,697	2,008	7,789	65,347	13,536	2,384	7,542	10,785	312,045
Under $1,000	1,624	755	1,199	393	220	55	7,453	88	1,776	2,686	983	129	396	568	18,325
$1,000-$1,999	582	952	578	487	348	179	10,727	211	726	3,925	1,468	219	655	705	21,762
$2,000-$2,999	599	1,168	571	553	387	114	12,862	197	519	5,451	1,741	378	801	907	26,258
$3,000-$3,999	563	1,430	846	512	396	263	14,815	240	699	6,680	1,830	282	647	1,256	30,649
No. of Families Below Poverty Level	2,805	2,875	2,348	1,433	955	348	51,042	496	3,021	12,072	4,192	726	1,852	2,180	66,345
Percent of All Families Below Poverty Level	51.9	21.9	25.2	23.2	30.0	12.7	19.1	24.7	38.8	18.5	31.0	30.5	24.6	20.2	21.3

[a]Poverty thresholds in this table are set at $3,000 and $,000 for 1960 and 1970, respectively because they closely approximate the average poverty threshold established by the Federal Government, and because of the data breakdown of income given in the census. The census specifies the number of people (by state, county, and other breakdown in each of several thousand dollars income categories: under $1,000; $1,000-$1,999; $2,000-$2,999, etc.).

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 38. Rural Families With Annual Incomes Below the Poverty Level[a]; Arizona, 1960 and 1970.

Income Levels	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	State Total
							1970								
All Rural Families	6,058	4,858	4,792	4,136	2,286	1,451	15,580	5,445	6,648	13,572	7,740	1,266	5,858	5,288	86,158
Under $1,000	1,124	190	464	97	126	20	512	169	958	461	336	24	230	177	4,888
$1,000-$1,999	574	233	365	212	150	29	645	166	553	395	443	33	290	277	4,365
$2,000-$2,999	511	297	299	231	120	56	888	371	723	554	539	44	432	365	5,430
$3,000-$3,999	424	288	234	252	112	80	1,094	355	502	703	617	88	368	456	5,573
No. of Rural Families Below Poverty Level	2,633	1,008	1,362	792	508	185	3,139	1,061	2,736	2,113	1,935	189	1,320	1,275	20,256
Percent Of All Rural Below Poverty Level	43.5	20.7	24.2	19.1	22.2	12.7	13.9	19.5	41.2	15.4	25.0	14.9	22.5	24.1	22.3
							1960								
All Rural Families	5,409	6,985	3,437	3,185	1,973	1,776	19,562	839	4,792	7,442	7,252	808	4,273	4,032	71,765
Under $1,000	1,624	406	1,027	257	150	46	1,530	47	1,671	501	621	43	288	352	8,573
$1,000-$1,999	582	523	326	258	255	122	1,988	112	568	604	808	73	370	367	6,976
$2,000-$2,999	599	642	258	327	282	82	2,675	103	383	580	1,194	113	480	390	8,108
$3,000-$3,999	563	780	290	286	266	168	2,705	131	387	630	1,140	109	509	581	8,545
No. of Rural Families Below Poverty Level	2,805	1,571	1,611	842	687	250	6,193	262	2,642	1,685	2,623	229	1,138	1,119	23,657
Percent of All Rural Below Poverty Level	51.9	22.5	46.9	26.4	34.8	14.1	31.7	31.2	55.1	22.6	36.2	28.3	26.6	27.8	33.0

[a]Poverty thresholds in this table are set at $3,000 and $4,000 for 1960 and 1970, respectively because they closely approximate the average poverty threshold established by the Federal Government and because of the data breakdown of income given in the census. The census specifies the number of people (by state, county, and other breakdown in each of several thousand dollars income categories: under $1,000; $1,000-$1,999; $2,000-$2,999,etc.).

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 39. Rural Nonfarm Families With Annual Incomes Below the Poverty Level[a]; Arizona, 1960 and 1970.

Income Levels	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	State Total
							1970								
All Rural Non-Farm Families	5,353	4,234	4,208	3,663	1,827	1,362	13,991	5,258	5,685	12,598	6,479	1,101	5,371	4,541	75,676
Under $1,000	957	162	330	85	95	20	462	164	674	424	261	15	201	148	3,988
$1,000-$1,999	469	223	288	205	86	24	532	151	426	336	317	24	275	261	3,617
$2,000-$2,999	417	245	267	222	103	40	766	366	553	508	412	39	395	323	4,656
$3,000-$3,999	361	255	205	221	101	75	904	355	429	629	515	84	363	402	4,899
No. of Rural Non-Farm Families Below Poverty Level	2,204	885	1,090	733	385	159	2,634	1,036	2,082	1,897	1,505	162	1,234	1,134	17,160
Percent of All Rural Nonfarm Below Poverty Level	41.1	20.9	25.9	20.0	21.1	11.7	19.0	19.7	36.6	15.1	23.2	14.7	23.0	25.0	22.7
							1960								
All Rural Non-Farm Families	4,533	6,327	2,737	--	1,558	1,645	16,166	--	4,236	6,785	5,743	617	3,806	3,279	57,432
Under $1,000	1,205	310	653	--	132	42	1,233	--	1,325	423	459	39	247	284	6,352
$1,000-$1,999	466	451	165	--	217	105	1,643	--	540	514	586	65	341	305	5,398
$2,000-$2,999	481	563	215	--	214	73	2,098	--	361	498	867	83	411	316	6,180
$3,000-$3,999	488	684	255	--	231	163	2,124	--	351	561	870	86	413	486	6,712
No. of Rural Non-Farm Families Below Poverty Level	2,152	1,324	1,033	(882)	563	220	4,974	(245)	2,226	1,435	1,912	187	999	905	17,903
Percent of All Rural Nonfarm Below Poverty Level	47.5	20.9	37.7	(26.0)	36.1	13.4	30.8	(31.0)	52.5	21.1	33.3	30.3	26.2	27.6	31.2

[a]Poverty thresholds in this table are set at $3,000 and $4,000 for 1960 and 1970, respectively because they closely approximate the average poverty threshold established by the Federal Government, and because of the data breakdown of income given in the census. The census specifies the number of people (by state, county, and other breakdowns in each of several thousand dollars income categories: under $1,000; $1,000-$1,999; $2,000-$2,999, etc).

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 40. Rural Farm Families With Annual Incomes Below the Poverty Level[a]; Arizona, 1960 and 1970.

Income Levels	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	State Total
							1970								
All Rural Farm Families	700	624	584	473	459	89	2,589	187	953	1,154	1,261	165	487	747	10,482
Under $1,000	167	28	134	12	31	--	60	5	284	37	75	9	29	29	900
$1,000-$1,999	105	10	77	7	64	5	113	15	127	59	126	9	15	16	748
$2,000-$2,999	94	52	32	9	17	16	122	5	170	46	127	5	37	42	774
$3,000-$3,999	63	33	29	31	11	5	100	--	73	74	102	4	5	54	674
No. of Rural Farm Families Below Poverty Level	429	123	272	59	123	26	485	25	654	216	430	27	86	141	3,085
Percent of All Rural Farm Families Below Poverty Level	61.3	19.7	46.6	12.5	26.8	29.2	18.7	13.4	67.9	18.7	34.1	16.4	17.7	18.9	29.4
							1960								
All Rural Farm Families	876	658	700	--	415	131	3,369	--	556	657	1,509	191	467	753	10,309
Under $1,000	419	95	374	--	18	4	297	--	346	78	162	4	41	78	1,917
$1,000-$1,999	116	72	161	--	38	17	345	--	48	90	222	8	29	62	1,208
$2,000-$2,999	118	79	43	--	68	9	577	--	21	82	327	30	69	74	1,497
$3,000-$3,999	75	96	35	--	35	5	581	--	36	69	270	23	96	95	1,416
No. of Rural Farm Families Below Poverty Level	653	247	578	--	124	30	1,219	--	415	250	711	42	139	214	4,622
Percent of All Rural Farm Families Below Poverty Level	74.5	37.5	82.6	--	29.9	22.9	35.9	--	74.6	38.1	47.1	22.0	29.8	28.4	44.8

[a]Poverty thresholds in this table are set at $3,000 and $4,000 for 1960 and 1970, respectively because they closely approximate the average poverty threshold established by the Federal Government, and because of the data breakdown of income given in the census. The census specifies the number of people (by state, county, and other breakdowns in each of several thousand dollars income categories: under $1,000; $1,000-$1,999; $2,000-$2,999,etc.).

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 41. Farm Families as a Percent of All Families; State, County, and Region; Arizona, 1960 and 1970.

Region and County	1970			1960			Percent Change In Farm Families Between 1960 & 1970
	Total No. of Families	Total No. of Farm Families	Farm Families as a Percent of All Families	Total No. of Families	Total No. of Farm Families	Farm Families as a Percent of All Families	
Region I:							
Pima	87,856	1,154	1.3	65,347	657	1.0	+75.6
Maricopa	245,575	2,589	1.1	162,697	3,396	2.1	-23.8
Yuma	14,784	747	5.1	10,786	753	7.0	- 8.0
Pinal	15,254	1,261	8.3	13,536	1,509	11.1	-16.4
Total: Region I	363,469	5,751	1.6	252,366	6,315	2.5	- 8.9
Region II:							
Mohave	7,270	187	2.6	2,008	--	--	--
Coconino	10,330	584	5.7	9,331	700	7.5	-16.6
Yavapai	10,071	487	4.8	7,542	467	6.2	+ 4.3
Total: Region II[a]	27,674	1,258	4.5	18,881			
	(20,401)	(1,081)	(5.3)	(16,873)	(1,167)	(6.9)	(- 7.4)
Region III:							
Navajo	9,738	963	9.9	7,789	556	7.1	+73.2
Apache	6,058	700	11.6	5,409	876	16.2	-20.1
Gila	7,247	473	6.5	6,187	--	--	--
Total: Region III[b]	23,043	2,163	9.3	19,385			
	(15,796)	(1,663)	(10.5)	(13,198)	(1,432)	(10.9)	(+16.1)
Region IV:							
Graham	3,607	459	12.7	3,181	415	13.0	+10.6
Greenlee	2,698	89	3.3	2,736	131	4.8	-32.1
Cochise	14,866	624	4.2	13,103	658	5.0	- 5.2
Santa Cruz	3,032	165	5.4	2,384	191	8.0	-13.6
Total: Region IV	24,203	1,337	5.5	21,404	1,395	6.5	- 4.2
State Total:	438,389	10,482	2.4	312,036	10,421	3.3	+ .6
Total State Population	1,772,184	45,958	2.6	1,302,161	49,421	3.8	- 7.0

Table 41.-Continued.

[a]Parentheses depict totals for Region II excluding Mohave County for which 1960 farm family data was not available.

[b]Parentheses depict totals for Region III excluding Gila County for which 1960 farm family data was not available.

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 42. Arizona Farms and Land in Farms; 1959 and 1969.

All Arizona Farms	1969	1959
All Farms -- Number	5,890	7,233
Land in Farms -- Acres	38,202,667	40,203,386
Average Size of Farms -- Acres	6,486.0	5,558.3
Value of Land and Buildings -- Dollars	2,663,700,887	(NA)
Average Per Farm -- Dollars	452,241	172,818
Average Per Acre -- Dollars	69.72	31.09

Source: 1959 and 1969 Arizona Census of Agriculture, U.S. Department of Commerce, Bureau of the Census.

Table 43. Size and Number of Farms; Arizona, 1964 and 1969.

Arizona Farms	1969			1964		
	Number	Percent	Acres in Farms	Number	Percent	Acres in Farms
All Farms	5,890	100.0	38,202,667	6,477	100.0	40,559,500
Farms With:						
1-9 Acres	926	15.7	3,193	974	15.0	3,543
10-49 Acres	1,226	20.8	28,408	1,312	20.3	29,897
50-69 Acres	221	3.8	12,715	221	3.4	12,950
70-99 Acres	233	4.0	18,928	337	5.2	27,392
100-139 Acres	245	4.2	28,487	262	4.0	30,592
140-179 Acres	309	5.2	48,524	332	5.1	52,297
180-219 Acres	109	1.9	21,507	160	2.5	31,756
220-259 Acres	111	1.9	26,565	174	2.7	41,411
260-499 Acres	563	9.6	206,105	669	10.3	243,015
500-999 Acres	604	10.3	423,698	642	9.9	455,085
1000-1999 Acres	443	7.5	622,477	418	6.5	594,125
2000 Acres and Over	897	15.2	36,762,060	976	15.1	39,037,500

Source: 1964 and 1969 Arizona Census of Agriculture, U.S. Department of Commerce, Bureau of the Census.

Table 44. Number and Class of Farms by County; Arizona, 1969 and 1959.

Economic Class of Farm	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	State Total
							1969								
Class I	28	128	36	9	89	10	639	21	11	74	263	18	42	225	1,593
Class II	17	80	3	14	32	16	162	18	17	31	67	20	42	96	615
Class III	23	112	16	15	33	18	140	15	13	38	29	13	40	77	582
Class IV	31	74	19	17	36	14	174	40	26	30	28	26	54	80	649
Class V	32	109	20	20	21	18	271	25	39	65	32	19	50	92	813
Class VI[a]	13	32	12	9	19	4	73	2	7	15	7	11	27	12	243
Part-Time[b]	74	143	49	28	31	23	346	32	85	63	49	18	97	66	1,105
Part-Retirement[c]	10	34	7	5	7	6	71	4	10	13	13	1	19	8	208
Abnormal[d]	9	1	7	6	8	-	12	6	9	14	6	-	2	2	82
Total	237	713	169	123	276	109	1,888	163	218	343	494	126	374	658	5,890
Total Below $20,000	183	414	123	94	147	83	1,075	118	181	224	158	88	287	335	3,510
Percent of Total Excluding Abnormal	77.2	58.1	72.8	76.4	53.3	76.1	56.9	72.4	83.0	65.3	32.0	69.8	76.7	50.9	59.6
Part-time Percent of Total Farms	31.0	20.0	29.0	23.0	11.0	21.0	18.0	20.0	39.0	13.0	10.0	14.0	26.0	10.0	19.0
							1959								
Class I	14	76	9	5	69	5	722	10	16	101	325	29	42	186	1,609
Class II	17	114	10	16	90	13	411	13	19	56	75	16	23	111	984
Class III	28	138	15	39	61	14	271	21	27	40	48	31	56	131	920
Class IV	26	99	32	10	32	21	173	27	23	27	38	8	58	82	550
Class V	46	70	4	14	28	15	227	9	40	44	31	8	60	61	657
Class VI[a]	4	25	15	6	20	10	69	2	1	23	35	1	26	10	247
Part-Time[b]	43	251	88	45	80	21	470	44	68	121	101	13	143	145	1,633
Part-Retirement[c]	1	50	5	16	10	7	146	7	21	10	22	16	52	31	394
Abnormal[d]	9	1	3	4	5	-	1	4	18	2	4	-	1	21	73
Total	188	824	181	155	395	106	2,490	137	233	424	679	122	461	778	7,173
Total Below $20,000	104	332	66	69	141	60	740	59	91	134	152	48	200	284	2,480
Percent of Total Excluding Abnormal	57.5	40.3	37.1	44.5	36.2	56.6	29.7	44.4	42.3	31.8	22.5	39.3	43.5	37.5	34.6
Part-time Percent of Total Farms	22.9	30.5	48.6	29.0	20.3	19.8	18.9	32.1	29.2	28.5	14.9	10.7	31.0	18.6	22.8

[a]Class VI farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who did not work off the farm 100 days or more in the census year.

[b]Part-time farms have a value of farm products sold of $50 to $2,499 and a farm operator under 65 years of age who worked off the farm 100 days or more in the census year.

[c]Part-retirement farms have a value of farm products sold of $50 to $2,499 and an operator 65 years old or over.

[d]Abnormal farms include institutional farms, experimental and research farms, and Indian reservations. Institutional farms include those operated by hospitals, penitentiaries, schools, grazing associations, government agencies, etc.

Source: 1969 and 1959 Arizona Census of Agriculture, U.S. Department of Commerce, Bureau of the Census.

Table 45. Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

Educational Characteristics	Nonrural Population		Rural Population	
	1960	1970	1960	1970
STATE TOTAL[a]				
Persons 25 and Over	506,099	732,185	155,003	183,552
No School Yrs. Completed	10,655	11,614	15,707	11,103
Percent With No School	2.1	1.6	10.1	6.0
Persons With 1-4 Yrs.	24,748	23,876	15,162	9,140
Percent With < 4 Yrs.	7.0	4.8	19.9	11.0
Persons With 5-8 Yrs.	126,119	132,486	42,140	39,314
Percent With < 8 Yrs.	31.9	22.9	47.1	32.4
Persons With 9-12 Yrs.	233,695	360,810	57,844	85,501
Percent With < 12 Yrs.	78.1	72.2	84.4	79.0
Persons With > 12 Yrs.	110,882	203,399	24,150	38,684
Percent With > 12 Yrs.	21.9	27.8	15.6	21.1
APACHE COUNTY[b]				
Persons 25 and Over	-	-	11,200	12,506
No School Yrs. Completed	-	-	4,396	3,398
Percent With No School	-	-	39.3	27.2
Persons With 1-4 Yrs.	-	-	1,201	897
Percent With < 4 Yrs.	-	-	50.0	34.3
Persons With 5-8 Yrs.	-	-	2,083	2,262
Percent With < 8 Yrs.	-	-	68.6	52.4
Persons With 9-12 Yrs.	-	-	2,347	4,058
Percent With < 12 Yrs.	-	-	89.5	84.9
Persons With > 12 Yrs.	-	-	1,173	1,891
Percent With > 12 Yrs.	-	-	10.5	15.1
COCHISE COUNTY				
Persons 25 and Over	12,600	19,489	14,534	10,556
No School Yrs. Completed	288	475	350	214
Percent With No School	2.3	2.4	2.4	2.0
Persons With 1-4 Yrs.	974	1,052	899	481
Percent With < 4 Yrs.	10.0	7.8	8.6	6.6
Persons With 5-8 Yrs.	3,774	4,081	3,473	2,335
Percent With < 8 Yrs.	40.0	28.8	32.5	28.7
Persons with 9-12 Yrs.	5,503	9,503	7,095	5,125
Percent with < 12 Yrs.	83.6	77.9	81.3	77.4
Persons With > 12 Yrs.	2,061	4,453	2,717	2,326
Percent With > 12 Yrs.	16.4	22.8	18.7	22.0

Table 45. Continued Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

Educational Characteristics	Nonrural Population		Rural Population	
	1960	1970	1960	1970
COCONINO COUNTY				
Persons 25 and Over	11,653	10,318	6,867	9,896
No School Yrs. Completed	231	155	1,856	1,632
Percent With No School	2.0	1.5	27.0	16.5
Persons With 1-4 Yrs.	479	314	483	471
Percent With < 4 Yrs.	6.1	4.5	34.1	21.3
Persons With 5-8 Yrs.	2,699	1,423	1,368	1,463
Percent With < 8 Yrs.	29.3	18.3	54.2	36.0
Persons With 9-12 Yrs.	5,618	4,445	2,260	4,054
Percent With < 12 Yrs.	77.5	61.4	87.2	77.0
Persons With > 12 Yrs.	2,644	3,981	882	2,276
Percent With > 12 Yrs.	22.7	38.6	12.8	23.0
GILA COUNTY				
Persons 25 and Over	6,427	6,504	6,555	8,669
No School Yrs. Completed	242	149	231	182
Percent With No School	3.8	2.3	3.5	2.1
Persons With 1-4 Yrs.	512	377	476	264
Percent With < 4 Yrs.	11.7	8.1	10.8	5.1
Persons With 5-8 Yrs.	1,991	1,472	2,095	2,157
Percent With < 8 Yrs.	42.7	30.7	42.7	30.0
Persons With 9-12 Yrs.	2,836	3,427	2,915	4,730
Percent With < 12 Yrs.	86.8	83.4	87.2	84.6
Persons With > 12 Yrs.	846	1,079	838	1,336
Percent With > 12 Yrs.	13.6	16.6	12.8	15.4
GRAHAM COUNTY				
Persons 25 and Over	2,395	2,824	4,034	4,880
No School Yrs. Completed	55	37	176	194
Percent With No School	2.3	1.3	4.4	4.0
Persons With 1-4 Yrs.	129	115	318	295
Percent With < 4 Yrs.	7.7	5.4	12.2	10.0
Persons With 5-8 Yrs.	588	721	1,390	1,223
Percent With < 8 Yrs.	32.2	30.9	46.7	35.1
Persons With 9-12 Yrs.	964	1,246	1,510	2,158
Percent With < 12 Yrs.	72.5	75.0	84.1	79.3
Persons With > 12 Yrs.	659	705	640	1,010
Percent With > 12 Yrs.	27.5	25.0	15.9	20.7

Table 45. Continued Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

Educational Characteristics	Nonrural Population		Rural Population	
	1960	1970	1960	1970
GREENLEE COUNTY				
Persons 25 and Over	2,032	2,542	3,484	2,753
No School Yrs. Completed	78	39	126	27
Percent With No School	3.8	1.5	3.6	1.0
Persons With 1-4 Yrs.	201	161	270	147
Percent With < 4 Yrs.	13.7	7.9	11.4	6.3
Persons With 5-8 Yrs.	581	538	1,125	686
Percent With < 8 Yrs.	42.3	29.0	43.7	31.2
Persons With 9-12 Yrs.	926	1,454	1,591	1,482
Percent With < 12 Yrs.	87.9	86.2	89.3	85.1
Persons With > 12 Yrs.	246	350	372	411
Percent With > 12 Yrs.	12.1	13.8	10.7	14.9
MARICOPA COUNTY				
Persons 25 and Over	302,502	476,176	43,608	34,643
No School Yrs. Completed	6,097	7,413	3,264	916
Percent With No School	2.0	1.6	8.5	2.6
Persons With 1-4 Yrs.	13,413	13,779	51,139	1,606
Percent With < 4 Yrs.	6.4	4.6	19.3	8.3
Persons With 5-8 Yrs.	75,071	83,468	12,588	8,561
Percent With < 8 Yrs.	31.3	22.0	48.1	32.0
Persons With 9-12 Yrs.	139,725	235,588	15,670	17,196
Percent With < 12 Yrs.	77.5	71.5	84.1	81.6
Persons With > 12 Yrs.	68,196	135,928	6,947	6,364
Percent With > 12 Yrs.	22.5	28.5	15.9	18.4
MOHAVE COUNTY				
Persons 25 and Over	2,456	3,933	1,836	11,219
No School Yrs. Completed	69	45	61	40
Percent With No School	2.8	1.1	3.3	.4
Persons With 1-4 Yrs.	120	83	45	155
Percent With < 4 Yrs.	7.7	3.3	5.8	1.7
Persons With 5-8 Yrs.	643	644	485	2,012
Percent With < 8 Yrs.	33.9	19.6	32.2	19.7
Persons With 9-12 Yrs.	1,164	2,247	951	6,988
Percent With < 12 Yrs.	81.3	76.8	84.0	82.0
Persons With > 12 Yrs.	460	914	294	2,024
Percent With > 12 Yrs.	18.7	23.2	16.0	18.0

Table 45. Continued Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

Educational Characteristics	Nonrural Population		Rural Population	
	1960	1970	1960	1970
NAVAJO COUNTY				
Persons 25 and Over	6,012	6,370	9,391	13,806
No School Yrs. Completed	183	192	2,718	2,189
Percent With No School	3.0	3.0	28.9	15.9
Persons With 1-4 Yrs.	322	304	723	886
Percent With < 4 Yrs.	8.4	7.8	36.6	22.3
Persons With 5-8 Yrs.	1,409	1,262	2,115	3,040
Percent With < 8 Yrs.	31.8	27.6	59.2	44.3
Persons With 9-12 Yrs.	3,009	3,314	3,009	5,818
Percent With < 12 Yrs.	81.9	79.6	91.2	86.4
Persons With > 12 Yrs.	1,090	1,298	826	1,873
Percent With > 12 Yrs.	18.1	20.4	8.8	13.6
PIMA COUNTY				
Persons 25 and Over	122,188	156,379	16,192	29,564
No School Yrs. Completed	2,155	1,986	722	824
Percent With No School	1.8	1.3	4.5	2.8
Persons With 1-4 Yrs.	5,619	5,044	1,029	948
Percent With < 4 Yrs.	6.4	4.5	10.8	6.0
Persons With 5-8 Yrs.	28,547	27,350	3,402	3,772
Percent With < 8 Yrs.	29.7	22.0	31.8	18.8
Persons With 9-12 Yrs.	60,110	77,257	4,236	13,102
Percent With < 12 Yrs.	79.8	71.4	72.9	63.1
Persons With > 12 Yrs.	28,180	44,742	4,380	10,918
Percent With > 12 Yrs.	18.2	28.6	27.1	36.9
PINAL COUNTY				
Persons 25 and Over	12,752	15,231	16,262	17,669
No School Yrs. Completed	726	593	846	804
Percent With No School	5.7	3.9	5.2	4.6
Persons With 1-4 Yrs.	1,418	1,133	2,447	1,480
Percent With < 4 Yrs.	16.8	11.3	20.2	12.9
Persons With 5-8 Yrs.	3,943	3,766	5,907	5,181
Percent With < 8 Yrs.	47.7	36.1	56.6	42.2
Persons With 9-12 Yrs.	4,736	6,871	5,401	8,004
Percent With < 12 Yrs.	84.9	81.2	89.8	87.5
Persons With > 12 Yrs.	1,938	2,844	1,661	2,224
Percent With > 12 Yrs.	15.2	18.7	10.2	12.6

Table 45. Continued Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

Educational Characteristics	Nonrural Population		Rural Population	
	1960	1970	1960	1970
SANTA CRUZ COUNTY				
Persons 25 and Over	3,607	4,075	1,841	2,888
No School Yrs. Completed	133	128	45	48
Percent With No School	3.7	3.1	2.4	1.7
Persons With 1-4 Yrs.	465	534	134	172
Percent With < 4 Yrs.	16.6	16.2	9.7	7.6
Persons With 5-8 Yrs.	1,159	1,536	536	636
Percent With < 8 Yrs.	48.7	53.9	38.8	29.6
Persons With 9-12 Yrs.	1,259	1,348	660	1,123
Percent With < 12 Yrs.	83.6	87.0	74.7	68.5
Persons With > 12 Yrs.	591	567	466	909
Percent With > 12 Yrs.	16.4	13.9	25.3	31.5
YAVAPAI COUNTY				
Persons 25 and Over	7,938	9,835	9,198	13,015
No School Yrs. Completed	136	123	151	78
Percent With No School	1.7	1.3	1.6	.6
Persons With 1-4 Yrs.	378	262	483	374
Percent With < 4 Yrs.	6.5	3.9	6.9	3.5
Persons With 5-8 Yrs.	2,248	2,312	2,809	2,783
Percent With < 8 Yrs.	34.8	27.4	37.4	24.9
Persons With 9-12 Yrs.	3,557	4,784	4,141	6,631
Percent With < 12 Yrs.	79.6	76.1	82.5	75.8
Persons With > 12 Yrs.	1,619	2,354	1,614	3,149
Percent With > 12 Yrs.	20.4	23.9	17.5	24.2
YUMA COUNTY				
Persons 25 and Over	13,536	18,509	10,001	11,488
No School Yrs. Completed	262	279	765	467
Percent With No School	1.9	1.5	7.6	4.1
Persons With 1-4 Yrs.	718	831	1,515	889
Percent With < 4 Yrs.	7.2	6.0	22.8	11.8
Persons With 5-8 Yrs.	3,493	3,889	2,746	3,127
Percent With < 8 Yrs.	33.0	27.0	50.3	39.0
Persons With 9-12 Yrs.	6,711	7,326	3,635	5,032
Percent With < 12 Yrs.	82.6	77.4	86.6	82.8
Persons With > 12 Yrs.	2,352	4,148	1,340	1,973
Percent With > 12 Yrs.	17.4	22.4	13.4	17.2

Table 45. Continued Educational Characteristics of Persons 25 Years Old and Over by Residence, State, and County; Arizona, 1960 and 1970.

[a]The median school years completed for the nonrural population was 11.8 and 12.4 for 1960 and 1970, respectively, compared to 9.5 and 12.3 for the rural population in 1960 and 1970, respectively.

[b]Total population is rural.

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 46. Median School Years Completed for Persons 25 Years Old and Over; State and County; Arizona, 1960 and 1970.

County	Median School Year Completed Persons 25 Years Old or Over		Percent Change
	1960	1970	
Apache	5.0	8.7	3.7
Cochise	11.2	12.2	1.0
Coconino	10.9	12.3	1.4
Gila	9.9	11.5	1.6
Graham	10.4	11.6	1.2
Greenlee	9.9	11.7	1.8
Maricopa	11.6	12.3	.7
Mohave	11.0	12.2	1.2
Navajo	9.2	10.7	1.5
Pima	12.1	12.4	.3
Pinal	8.8	10.7	1.9
Santa Cruz	9.9	10.5	.6
Yavapai	11.0	12.2	1.2
Yuma	10.4	12.0	1.6
State Total	11.3	12.3	1.0

Source: 1960 and 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 47. School Dropout Rates for 19 Year Old Youths in Arizona Compared to the U.S. and Selected Other States; 1960.

Type of Area	Percent of 19 Year Old Youths Who Had Dropped Out of School[a]				
	Arizona	U.S.	Nebraska[b]	S. Carolina[c]	Calif.
Urban	35.0	29.0	16.1	39.8	28.2
Rural Nonfarm	52.6	42.3	25.4	50.3	38.7
Rural Farm	76.4	41.6	15.2	63.9	34.2
Total	40.5	32.9	17.8	47.9	30.0

[a]Dropouts were defined as those 19 years old with less than 12 years of school completed and not enrolled in school, plus those enrolled who were retarded two or more years and not in the fourth year of high school.

[b]State with lowest dropout rate.

[c]State with highest dropout rate

Source: USDA, Economic Research Service, 1960 School Dropout Rates Among Farm and Nonfarm Youth; Agri. Econ. Report No. 42; Washington, D.C., September, 1963, pp. 21-24.

Table 48. Educational Attainment of Spanish-Americans 25 Years Old and Over by County; Arizona, 1970.

Educational Attainment	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa
Persons 25 Yrs. Old and Over	921	8,362	2,743	3,491	1,691	2,360	53,894
No School Yrs. Completed	52	594	130	127	166	22	5,022
Percent With No School	5.6	7.1	4.8	3.6	9.8	.9	9.3
Number With 1-4 Yrs.	118	1,122	245	311	211	218	6,802
Percent With 4 Yrs. or Less	18.5	20.5	13.7	12.5	22.3	10.2	21.9
Number With 5-8 Yrs.	262	2,788	649	909	523	723	16,561
Percent With 8 Yrs. or Less	46.4	53.9	37.5	38.6	59.1	40.8	52.7
Number With 9-12 Yrs.	342	3,135	1,282	1,854	480	1,255	18,658
Percent With 12 Yrs. or Less	84.0	91.4	84.3	91.7	87.5	94.0	87.3
Number With > 12 Yrs.	147	723	428	290	211	142	6,851
Percent With > 12 Yrs.	16.0	8.6	15.7	8.3	12.5	6.0	12.7

Educational Attainment	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma
Persons 25 Yrs. Old and Over	752	2,104	35,102	9,575	4,700	2,057	6,279
No School Yrs. Completed	28	128	1,669	894	164	86	488
Percent With No School	3.7	6.1	4.8	9.3	3.5	4.2	7.8
Number With 1-4 Yrs.	14	213	3,702	1,456	518	219	1,165
Percent With 4 Yrs. or Less	5.6	16.2	15.3	24.5	16.6	14.8	26.3
Number With 5-8 Yrs.	179	568	10,641	3,380	1,819	544	1,965
Percent With 8 Yrs. or Less	29.4	43.2	45.6	59.8	55.3	41.3	26.3
Number With 9-12 Yrs.	367	991	15,298	3,288	1,497	915	2,044
Percent With 12 Yrs. or Less	78.2	90.3	89.2	94.2	87.2	85.8	90.2
Number With > 12 Yrs.	164	204	3,792	557	602	293	617
Percent With > 12 Yrs.	21.8	9.7	10.8	5.8	12.8	14.2	9.8

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 49. Educational Attainment of Spanish-Americans, 25 Years Old and Over by Place of Residence; Arizona, 1970.

Educational Attainment	State	Urban	Rural	Rural Nonfarm	Rural Farm
Persons 25 Yrs. and Over	134,022	108,379	25,643	22,226	3,417
No School Yrs. Completed	9,570	7,096	2,474	2,055	419
Percent With No School	7.1	6.5	9.6	9.2	12.3
Number With 1-4 Yrs.	16,414	12,575	3,839	3,213	626
Percent With 4 Yrs. or Less	19.3	18.2	24.6	23.7	30.6
Number With 5-8 Yrs.	41,611	33,610	8,001	6,628	1,373
Percent With 8 Yrs. or Less	48.9	49.2	55.8	53.5	70.8
Number With 9-12 Yrs.	51,406	42,648	8,758	7,982	776
Percent With 12 Yrs. or Less	88.7	88.5	90.0	89.4	93.5
Number With > 12 Yrs.	15,021	12,450	2,571	2,348	223
Percent With > 12 Yrs.	11.2	11.5	10.0	10.6	6.5

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 50. Age Characteristics of the Rural Nonfarm Population; County and Region; Arizona, 1970.

County and Region	Rural Nonfarm Population	Percent Less Than 29 Years	Percent Over 55 Years	Median Age
Region I:				
Pima	47,730	41.0	22.1	31.5
Maricopa	53,088	51.1	22.3	29.0
Yuma	19,956	56.7	17.7	24.7
Pinal	29,279	54.3	18.0	26.3
Total: Region I	150,053	49.3	20.9	28.7
Region II:				
Mohave	17,727	58.9	24.7	34.2
Coconino	19,213	61.4	12.8	21.5
Yavapai	19,232	43.6	30.0	36.9
Total: Region II	56,172	54.5	22.4	30.8
Region III:				
Navajo	29,300	65.5	9.8	18.6
Apache	28,693	65.9	9.7	17.6
Gila	14,734	53.7	18.9	26.8
Total: Region III	72,727	63.3	11.6	19.9
Region IV:				
Graham	8,971	61.8	14.2	21.1
Greenlee	4,902	54.6	12.8	26.6
Cochise	19,607	58.6	16.8	24.9
Santa Cruz	4,429	48.5	19.6	31.3
Total: Region IV	37,909	57.7	16.0	25.0
State Total	316,861	54.4	18.4	26.6

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

Table 51. Age Characteristics of the Rural Farm Population; County and Region; Arizona, 1970.

County and Region	Rural Farm Population	Percent Less Than 29 Years	Percent Over 55 Years	Median Age
Region I:				
Pima	4,037	42.7	23.3	36.7
Maricopa	10,826	53.8	20.1	26.9
Yuma	2,900	49.2	19.8	30.7
Pinal	6,103	62.8	10.4	19.4
Total: Region I	23,866	53.7	18.1	27.1
Region II:				
Mohave	794	48.5	22.4	30.8
Coconino	2,996	65.1	10.1	18.4
Yavapai	1,731	43.6	26.2	36.2
Total: Region II	5,521	56.0	16.9	25.8
Region III:				
Navajo	5,573	68.2	10.5	16.7
Apache	3,605	61.7	14.9	20.5
Gila	1,752	49.2	18.6	30.0
Total: Region III	10,930	63.0	13.2	20.1
Region IV:				
Graham	2,274	61.3	16.0	17.8
Greenlee	341	47.8	29.0	32.9
Cochise	2,415	46.3	22.4	33.8
Santa Cruz	611	42.1	28.5	41.6
Total: Region IV	5,641	52.0	20.9	28.1
State Total	45,958	56.0	17.1	25.4

Source: 1970 Arizona Census of Population, General Social and Economic Characteristics, PC(1)-C4.

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