AN ABSTRACT OF THE THESIS OF

Pamela Niemeyer Olson for the degree of Doctor of Philosophy in Family Resource Management presented on August 1, 1983

Title: Money and Nonmoney Incomes of Elderly Families and Individuals: Analysis and Distribution

Abstract approved: Redacted for Privacy
Geraldine I. Olson

Resource distribution and adequacy, of elderly individuals and families, was measured by determining an annual dollar value of money and nonmoney economic resources. The nonmoney economic resources were identified as fringe benfits, household production, durable assets, interfamily grants, and community provided goods and services. The data were collected by interviewing 75 residents, 70 years or older, in Bernalillo County (Albuquerque), New Mexico, during 1980.

The Gini Coefficient changed from .344 (money income) to .186 with all incomes. When household production and community provided goods and services were omitted, due to the method of valuation (based on prior research), the Gini Coefficient was .616, indicating greater inequality.

An analysis of variance was computed to determine if differences ($p \leq .05$) existed between dollar amounts of the nonmoney resources available to families categorized into four different levels of living. There was no difference in the dollar amount

of fringe benefits or interfamily grants. The dollar amount of durable assets among elderly families was significant ($p \leq .05$).

The Cochran Q test was used to determine whether changes took place in the number of families below poverty as nonmoney resources were included. The poverty line was adjusted with the inclusion of each resource. Based on money income, 15 families were defined as in poverty. With all nonmoney resources in the measure, no family was defined as in poverty; the change was significant ($p \leq .05$). When household production and community provided goods and services were omitted, nine families remained in poverty. Six families were no longer defined as in poverty after interfamily grants were included. The change was significant ($p \leq .05$).

Multiple regression models were developed. The predictor variables in the money income model were: number of sources of money income and whether the participant's primary occupation had been management/professional (explaining 24 percent of the variation). No selected predictor variables met the criterion for explaining fringe benefits. Homeownership and number of cars were included in the model explaining durable assets (explaining 54 percent of the variation). Number of events and whether there were children, were included in the model for interfamily grants (explaining 25 percent of the variation).

Money and Nonmoney Incomes of Elderly Families and Individuals: Analysis and Distribution

by

Pamela Niemeyer Olson

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Doctor of Philosophy

Completed August 1, 1983

Commencement June 1984

APPROVED:

Redacted for Privacy

Associate Professor of Family Resource Management
in charge of major

Redacted for Privacy

Head of Department of Family Resource Management

Redacted for Privacy

Dean of Graduate School

Date thesis is presented August 1, 1983

Typed by Sandra Warren for Pamela N. Olson

ACKNOWLEDGMENTS

I would especially like to thank Dr. Geraldine Olson, not only for her contributions and suggestions in the development of this paper, but for her total unwaivering support throughout my graduate education. The standards she has established for herself are ones which all students should strive to achieve.

I, also, would like to extend my sincere gratitude to my graduate committee. They believed in and allowed for individual differences. I appreciated all advice and suggestions from: Drs. Marjorie Woodburn, Sylvia Lee, Starr McMullen, Arlene Holyoak, and Alice Morrow.

I must also acknowledge Drs. Mary Smith and Joel Jones who provided the motivation for this year.

And, of course, my family. Without the support from Steve for providing that nonmoney resource, household production, it would not have been possible this year for "mommy to get smart".

My thanks to all of you.

TABLE OF CONTENTS

Chapter

ONE INTRODUCTION 1

Research Problem..... 4
Objectives of the Study..... 4
Research Hypotheses..... 5
Limitations..... 6
Definitions..... 7

TWO REVIEW OF THE LITERATURE 9

Economic Resources..... 9
Money Income..... 10
Nonmoney Incomes..... 11
Fringe benefits..... 11
Household production..... 11
Durable assets..... 12
Interfamily grants..... 13
Community provided goods and services..... 14
Poverty Measures..... 16
Absolute Poverty..... 17
Booth..... 17
Rowntree..... 17
The Council of Economic Advisers.... 18
Social Security Administration..... 19
Relative Poverty..... 20
Keyserling..... 21
Fuch..... 21
Ornatti..... 21
Bureau of Labor Statistics..... 22
Income Distribution Studies..... 23
Historical Studies..... 23
Studies Including Government Transfers.. 26
Smeeding..... 26
Congressional Budget Office..... 26
Watts and Skidmore..... 26
Studies Including Asset Earnings..... 27
Steiner and Dorfman..... 27
Weisbrod and Hansen..... 27
Other Well-Being Studies Including Expanded Measures of Resources..... 27
Morgan..... 27
Sirageldin..... 28
Taussig..... 28
Baerwaldt and Morgan..... 28
Moon..... 29
Valuing Nonmoney Economic Resources..... 30
Cash-equivalent..... 30
Market value..... 31

Chapter

THREE METHODOLOGY 33

Population of the Study..... 33
Data Coverting Instrument..... 34
Procedure..... 35
Method of Analysis..... 36
Response Variables..... 36
Hypothesis One..... 37
Hypothesis Two..... 38
Regression Models..... 39
Dollar Calculations of Economic Resources... 40
Money..... 40
Nonmoney..... 41
Fringe benefits..... 41
Household production..... 41
Durable assets..... 42
Interfamily grants..... 42
Community provided goods and services..... 43

FOUR FINDINGS 46

Sample Description..... 46
Selected Sample Characteristics..... 46
Age..... 46
Living arrangement..... 47
Dollar income..... 47
Other family members..... 49
Socioeconomic status..... 49
Ethnic..... 49
Comparison to Bernalillo County..... 49
Description of Variables Included in the Regression Models..... 51
Predictor Variables for Regression Model 1: Money Income..... 51
Primary and current occupation..... 52
Education level..... 52
Sources of money income..... 54
Predictor Variables for Regression Model 2: Fringe Benefits..... 55
Predictor Variables for Regression Model 3: Durable Assets..... 56
Homeownership..... 56
Number of cars..... 56
Predictor Variables for Regression Model 4: Interfamily Grants..... 57
Child related variables..... 57
Residence variables..... 59
Health..... 59
Events..... 61
Description of Economic Resources..... 62

Chapter

FOUR
- Money 63
- Nonmoney 63
  - Fringe benefits 63
  - Household production 66
  - Durable assets 66
  - Interfamily grants 67
  - Community provided goods ans services 68
- Income Distribution Changes 68

Results and Discussion of Hypothesis Testing 75
- Hypothesis 1 75
  - Among Groups 75
    - Fringe benefits 75
    - Household production 75
    - Durable assets 78
    - Interfamily grants 78
    - Community provided goods and services 81
  - Within Groups 81
    - Social minimum 81
    - Lower living 81
    - Prevailing family 83
    - Social abundance 83
- Hypothesis 2 84
- Results and Discussion of Regression Models. 86
  - Regression Model 1: Income 86
  - Regression Model 2: Fringe Benefits 90
  - Regression Model 3: Durable Assets 90
  - Regression Model 4: Interfamily Grants. 92

FIVE SUMMARY AND IMPLICATIONS 97
- Summary of Findings 98
- Implications 101
- Need for Further Study 103

REFERENCE NOTE 105

REFERENCES 106

APPENDIX A Introductory Letter 112

APPENDIX B Research Instrument 114

APPENDIX C Money Income 139

APPENDIX D Results of Wage Survey 141

APPENDIX E Dollar Value of Household Production 143

APPENDIX F Durable Assets..... 145

APPENDIX G Rental Prices for Service Grants... 148

APPENDIX H Dollar Value of Community Provided Goods and Services..... 150

APPENDIX I Formulas for Money and Nonmoney Incomes..... 152

LIST OF FIGURES

Figure		Page
1.	GINI COEFFICIENTS AND LORENZ CURVES FOR MONEY AND NONMONEY ECONOMIC RESOURCES.	65
2.	CHANGES IN DISTRIBUTION OF ECONOMIC RESOURCES AS NONMONEY ECONOMIC RESOURCES ARE INCLUDED IN A TOTAL INCOME MEASURE.	70
3.	CHANGES IN DISTRIBUTION OF ECONOMIC RESOURCES AS NONMONEY ECONOMIC RESOURCES ARE INCLUDED IN A TOTAL INCOME MEASURE, WITH HOUSEHOLD PRODUCTION AND COMMUNITY PROVIDED GOODS AND SERVICES DELETED.	73

LIST OF TABLES

Table		Page
1.	Mean age and living arrangements of participants.	47
2.	Mean income of sample participants by sex and living arrangements.	48
3.	Socioeconomic status of participants by sex and living arrangements.	50
4.	Ethnic background of sample participants and residents of Bernalillo County, New Mexico	51
5.	Primary and current occupations of participants and spouses.	53
6.	Educational level of participants and spouses.	54
7.	Sources of money income.	55
8.	Number of children of participants.	58
9.	Distance scores of participants: combined number of children and distance from parents	59
10.	Length of time (in years) participants have lived in New Mexico, in Albuquerque, and in current residence.	60
11.	Level of health as reported by the participant.	61
12.	Annual events reported by participants.	62
13.	Summary of distribution statistics of individual economic resources.	64
14.	Percentage changes in Gini Coefficients as economic resources are included in a total income measure.	69
15.	Summary of distribution statistics of money plus nonmoney incomes.	71
16.	Summary of distribution statistics of money plus nonmoney incomes with household production and community provided goods and services deleted.	74
17.	Levels of living as defined by money income.	76

Table		Page
18.	ANOVA of income received from fringe benefits by elderly families at different levels of living.	77
19.	ANOVA of income received from durable assets by elderly families at different levels of living.	79
20.	ANOVA of income received from interfamily grants by elderly families at different levels of living.	80
21.	Mean dollar incomes received from money and nonmoney economic resources by elderly families at four levels of living.	82
22.	Changes in number of elderly families below the poverty level as nonmoney economic resources are included in the total measure.	85
23.	Changes in number of elderly families below the poverty level as nonmoney economic resources are included in the total measure (household production and community provided goods and services are not included).	87
24.	Results of testing the selected predictor variables in regression model 1: money income.	88
25.	Analysis of variance for regression model 1: money income.	89
26.	Results of testing the selected predictor variables in regression model 3: durable assets.	91
27.	Analysis of variance for regression model 3: durable assets.	93
28.	Results of testing the selected predictor variables in regression model 4: interfamily grants.	94
29.	Analysis of variance for regression model 4: interfamily grants.	95

Money and Nonmoney Incomes of Elderly Families and Individuals: Analysis and Distribution

CHAPTER ONE

INTRODUCTION

The elderly population of this country is increasing and receiving more attention than in the past, primarily due to the extended life span (Hauser, 1976) and a decrease in money income (Schulz, 1980) that is frequently associated with retirement. Measured poverty is higher among the elderly than any other age group in the United States (Moon, 1977). Traditionally only money incomes have been used as a basis for counting the number of families and individuals in poverty.

Nonmoney economic resources need to be taken into consideration when attempting to measure total family economic well-being. Studies recalculating the incidence of poverty, using nonmoney resources, suggest that the number of families in poverty declines as nonmoney incomes are included (Smeeding, 1977; United States Congress, Congressional Budget Office, 1977; Watts and Skidmore, 1977). This is especially true of families headed by elderly individuals (Perlman, 1976).

The importance of the nonmoney resources has been substantiated in the literature. However, no previous

research has taken into account the total dollar value of all economic resources, money and nonmoney, and adjusted the poverty line for the additional types of income. Studies of the distribution of economic welfare have been infrequent and incomplete. In general, research in this area has been concentrated on measuring only one additional component, primarily government transfers, of economic welfare. It has been recommended that a more comprehensive measure of economic well-being replace the current poverty measures (Moon, 1977; Sirageldin, 1969). The first step would be a more complete measurement of economic resources available to families.

Traditionally, economic resources as defined by home economists have included money income as well as fringe benefits, household production, durable assets, and community provided goods and services (Kyrk, 1953). Recent attention to interfamily grants has led researchers to include the transfer of resources between households as an additional nonmoney economic resource of families (Bivens, 1976; Scholl, 1978). The perfect mix, or ratio, of economic resources is unknown. However, in-kind income, consisting of goods and/or services available to families without expenditure or below market value, does "free up" money resources and increase families' economic well-being (Scholl, 1978).

In order for a family to improve its economic

position, it must acquire more resources, usually money income. This option, due to the earning restrictions on Social Security and some retirement policies, as well as persistent inflation, a general decline in health and the inability to reenter the labor force due to lack of marketable skills and possible discrimination (Schulz, 1980), is not as readily available to the elderly population as to other family types. Therefore, elderly families may have to increase their economic position through other, less traditional economic resources.

The purpose of this study is to arrive at estimates of elderly families' total real income which, through a review of the literature, have been shown to be relevant to total economic well-being. In order to arrive at a meaningful figure, annual dollar values have been assigned to each category of nonmoney resources. The sum of all money and nonmoney incomes equals the total real income.

Further understanding of the resources available to elderly families and individuals could be beneficial in the following ways. (1) This type of measurement could allow for more realistic comparisons of family economic well-being among family types. (2) It could allow for better comparisons over time between families and communities, and internationally. (3) This study could aid in the realistic identification of alternative resources

to elderly families, thereby assisting persons in the area of home management and family economics who attempt to aid families in the identification of resources in order to meet family goals. (4) It might also lead to more realistic measures of poverty and a refocus of social programs and public resources.

Research Problem

The basic goal of this study is to identify and assign an annual dollar value to nonmoney economic resources of elderly families and individuals. By developing a measure of total economic well-being, an analysis of the distribution of these incomes can be completed. Selected variables will be assessed for usefulness in predicting the availability of resources to elderly families.

Objectives of the Study

1. to identify levels and sources of nonmoney resources received by elderly families, consistent with the review of the literature

2. to assign an annual dollar value to the nonmoney economic resources

3. to estimate total family economic well-being in relation to various demographic characteristics

Research Hypotheses

The following null hypotheses for this study are:

H1: There is no difference in the dollar amount of nonmoney economic resources among elderly families at different money income levels as defined in the American Budget Standards. (Household production and community provided goods and services will not be included in this analysis due to the method by which the dollar value was assigned.)

H2: There is no difference in the number of elderly families in poverty, as defined in this study, when non-money resources are included in total economic figures.

Four regression models also were developed. These were constructed based upon previous research.

The first regression model estimates the relationship of money income received by the elderly individual to the predictor variables: participant's primary occupation, participant's current occupation, participant's education, spouse's primary occupation, spouse's current occupation, spouse's education, and number of sources of money income.

The second model estimates the relationship of annual dollar value of fringe benefits reported by the elderly individual to the predictor variables: participant's primary occupation, participant's current occupation, participant's education, type of employment, spouse's

primary occupation, spouse's current occupation, spouse's education, and money income.

The third model estimates the relationship of annual dollar value of durable assets received by the elderly individual to the predictor variables: homeownership and number of cars.

The fourth model estimates the relationship of annual dollar value of interfamily grants received by the elderly individual to the predictor variables: whether or not there are children, number of children, distance children live from recipient, number of major events occurring over the past year, length of time in the state of New Mexico, length of time in Albuquerque, length of time in present home, health, participant's education, participant's primary occupation, participant's current occupation, spouse's education, spouse's primary occupation, and spouse's current occupation.

Due to the method by which the dollar values were assigned to household production and community provided goods and services, there was no need to develop a model explaining their composition.

Limitations

1. The findings of this study are applicable only to elderly families and individuals residing in Bernalillo County, New Mexico, and similar populations.

2. The results are only estimates of families' total economic well-being.

3. There is no way to determine if those elderly families and individuals who refused to participate in this study are different from those who did.

Definitions

American Family Budget Standards: (Watts, 1980) recommended four levels of living for the Family Budget Program; 1) Prevailing Family, 2) Social Minimum, 3) Lower Living, and 4) Social Abundance categories

Community provided goods and services: goods and services provided by governments, federal and state, free of charge or at little direct cost to the consumer

Durable assets: household items valued over $50, including homeownership and cars

Elderly (or elderly family): being 70 or more years old

Fringe benefits: goods and services provided by the employer free of charge or at little direct cost to the employee, prior to and/or after retirement

Household production: time spent in the production of goods and services by and for members of the household

Interfamily grants: the transfer of money, goods, and/or services from one family to another without a reciprocal arrangement

Levels of income: four levels as defined by the American Family Budget Standards Committee (Watts, 1980)

Lower Living: defined as two-thirds of the prevailing family budget

Money: income received in the form of money from employment, pensions, government programs, investments or sources other than families.

Nonmoney incomes: economic resources to include community provided goods and services, durable assets, fringe benefits, household production, and interfamily grants

Poverty level: defined for this study as equal to the social minimum standard

Prevailing Family Standard: equal to median family income

Social Abundance Standard: defined as a level 50 percent higher than the prevailing family standard

Social Minimum Standard: is computed as half of the prevailing family standard

CHAPTER TWO

REVIEW OF THE LITERATURE

Measuring family economic well-being is a central concept in this study. The numerous economic definitions of poverty contain one common element; poverty is a condition of having insufficient resources to maintain an acceptable standard of living (Perlman, 1976). There is dispute, however, over what constitutes an acceptable standard of living. This issue is addressed as well as income distribution and valuing of nonmoney incomes.

Economic Resources

Family economic well-being is equated with the availability of resources or funds to carry out successfully those activities expected or required by society. Current money income is often the only measurement used for a measure of well-being.

A fully comprehensive measure of total income must include all economic resources, money and nonmoney, that are available to families. The specific components of a total income measure are: (1) money, (2) fringe benefits, (3) household production, (4) durable assets, (5) inter-family grants, and (6) community provided goods and services. Each component will be discussed separately.

Money Income

Money income provides the basis for economic well-being in our society (Moon, 1977), therefore the inclusion of money income in the measurement requires no lengthy justification. In 1968 (Bixby, 1970), for persons over 65, earned income constituted 30 percent of current income. By 1976 (Grad and Foster, 1979), money income from earnings had decreased to 23 percent. However, this type of money income was important to elderly families' levels of living.

Social Security was the most common source (39 percent) of money income to the elderly population. Earnings (23 percent) and asset income (18 percent) were also sources of money income to a large number of elderly families (Grad and Foster, 1979). However, the various income sources are distributed unevenly among the subgroups of the elderly. Earnings go almost entirely to the non-retired while asset income goes mostly to a few, high income elderly (Perlman, 1976).

In 1976 the median dollar income of elderly families and individuals was $8000 compared with $15000 for all families (Current Population Reports, 1976). In 1977, of the 22 million individuals age 65 and over, 3.2 million or 14 percent were classified by the federal government as poor. This is above the 12 percent poverty rate for all families (United States Senate, 1977).

However, the money income is an inadequate measure of

total family economic well-being since it fails to capture all of the families' resources. Another weakness of money income as the only measure of poverty is that it tends to lead to an overstatement of the economic inferiority of the elderly (Perlman, 1976) relative to other family types.

Nonmoney Incomes

Nonmoney incomes, as defined by home economists (Kyrk, 1953), are fringe benefits, durable assets, household production, interfamily grants (Scholl, 1978; Bivens, 1976) and community provided goods and services.

Fringe benefits. Fringe benefits increase a worker's take home pay by one-third on the average (Fringe Benefits, 1977). Employee fringe benefits average 35.4 percent of the payroll in business and industry according to a U.S. Chamber of Commerce Survey (1977). This amounts to an average of $3984 per employee annually. While the retired population may not be recipients of as many fringe benefits, e.g., medical insurance, as the rest of the population, they continue to play an important role is the economic well-being of elderly families. Existence of fringe benefits may also distort money income comparisons among family types.

Household production. The economic function of the household has been recognized as early as 1934 by

Reid.

> Household production consists of those unpaid activities which are carried on, by and for the members which activities might be replaced by market goods, or paid services, if circumstances such as income, market conditions, and personal inclinations permit the service being delegated to someone outside the household group (1934, p.11).

This distinguishes household production from the other types of production in the home and from the marketplace production activities. Economists began to recognize the importance of economic aspects of household production with the development of human capital theory by Schultz (1961) and Becker (1965).

Durable assets. Sirageldin (1969) and Weisbrod and Hansen (1968) demonstrated the importance of this nonmoney resource to elderly families by the inclusion of consumer durables in earlier studies. The presence of large asset holdings by the elderly population should be considered when measuring economic resources. When these are earning assets, the measurement problem is less serious, and they are more easily included in a total money income. However, most often the assets are in homeownership, which yields implicit, e.g., free rent, but not explicit measured income (Perlman, 1976).

In a 1968 survey of the demographics and economic characteristics of the aged, it is reported that 77 percent of all families and single persons over the age of 65 were buying or owned their own home, compared with 63

percent for all families (Murray, 1971). Four-fifths of these elderly owned their home outright. Weisbrod and Hansen (1968) combined wealth (assets) and earnings into current purchasing power by calculating the annuity value of the assets over the expected lifetime of the holder. The annual value was added to income to determine an adjusted income, or annual purchasing power.

The adjusted income was used to correct poverty count for all family types. The corrected rating led to a reduction in poverty for the elderly at all income levels due to their greater net worth (Weisbrod and Hansen, 1968). Schulz (1980) cautions, however, that the nonliquid nature of most of the assets must be a consideration in the interpretation of the results (Schulz, 1980).

Weisbrod and Hansen (1968) have conducted the most extensive research to date on including net worth in a measure of economic welfare. They asserted that the level of assets owned by an individual or family enhances his/their economic position. Weisbrod and Hansen maintained their approach would improve upon the money income measure, but did not assume it to be ideal or a complete indicator.

Interfamily grants. Recently, researchers have become interested in the degree to which families are participants in a grants economy (Boulding, 1972; Bivens,

1976; Baerwaldt and Morgan, 1978; Scholl, 1978). Help from families and friends has been recognized as an important resource, both economically and socially for elderly families (Scholl, 1978; Cicirelli, 1980). When one family, or household, transfers a resource to another, family economic well-being is changed. Earlier researchers (Morgan, 1978; Moon, 1977; Taussig, 1973) have included "residing with relatives" as nonmoney income in measures of well-being. However, this is only one of many grants transferred to and from families.

Earlier research had focused on the transfer of resources from parents to their recently married children (Warren and Clark, 1963). Little attention has been given to the resources directed towards elderly families. Hill (1970) reported that in an extended family situation children and grandparents were recipients of grants. Another study (O'Brien and Wagner, 1980) suggested that the notion of independent living is a myth. The authors stated that everyone, and especially the elderly, is dependent on others for continual survival, socially and economically. Cicirelli (1980) reported that "kin help" (interfamily grants) was the single kind of help preferred by the elderly. The study did not address the question of the extent to which services desired by the elderly were actually available.

Community provided goods and services. Another

important component of economic welfare is the contribution of government (Moon, 1977). Earlier studies (Smeeding, 1977; Watts and Skidmore, 1977) have included cash and selected inkind transfer payments. However, these transfers alone may not reflect the total influence of fiscal policy on the welfare of aged families (Moon, 1977).

The difficulty of assigning a dollar value to community resources has been expressed by previous researchers (Olson, 1965). Individuals', families', and society's level of living is increased due to goods and services provided by the public sector. Because there is no perfect, or even good, substitute for many government produced resources, for example public education, there is difficulty in determining an economic value of these resources to families.

Between 1965 and 1974, expenditures of government cash transfers to families rose from $35 billion to $103 billion (Skolnick and Dales, 1976). The cash transfers substantially reduced inequality and raised incomes for several demographic groups, primarily the aged. Among individuals 65 and over for both men and women, transfers doubled incomes while reducing inequality by about 45 percent. It was concluded that government transfers dramatically reduced inequality for several population subgroups (Danziger and Plotnick, 1977).

The 1966 Survey of Economic Opportunity (Joint Economic Committee, 1973) and the Michigan Panel Study of Income Dynamics (Survey Research Center, 1972) included nonmoney economic resources provided through government transfers in determining the components of economic welfare. Medicare, Medicaid, public housing, and food stamps were defined as nonmoney resources. The median welfare level when nonmoney resources were included increased by 11 percent between 1966 and 1971.

Studies by the Congressional Budget Office, (1977) Watts and Skidmore (1977), and Smeeding (1977) all identified significant declines in the number of poor when additional adjustments were made to current money incomes. Adjustments, in all cases, were the inclusion of the cash equivalents of inkind government transfers, primarily Medicare and Medicaid. No adjustment of the poverty line was made.

Poverty Measures

> Measurement of poverty is not simple, either conceptually or in practice. By the poor we mean those who are not now maintaining a decent standard of living - those whose basic needs exceed their means to satisfy them (Economic Report of the President, 1964 p. 57).

Defining the poor in specific terms to acquire a count is not an easy task. The problem of defining poverty within our society or any other is a question of where to draw the line of minimum essentials for meaningful

participation. Some have argued that this cannot be done effectively, and that anywhere the line is drawn is purely a subjective matter. This claim was made by Reid (1964) before the House Subcommittee hearings on the Economic Opportunity Act. She implied that poverty is a relative term and that its definition is dependent upon the person using it. No measurement is value-free (Orshansky, 1969). Poverty measures, both absolute and relative, are discussed here.

Absolute Poverty

Absolute poverty is defined as not having some of the essentials required to participate in one's culture (Hamilton, 1968). The following section reviews the measurements of absolute poverty.

Booth. Booth (1891) attempted to define poverty in terms of crowding. He defined poverty as two or more persons living in one room measuring 1000 cubic feet. He attempted to correlate crowding and earnings, but did so only with partial success.

Rowntree. In the classic study of poverty in York (1910) Rowntree defined poverty as having income "insufficient to obtain the minimum necessaries for the maintenance of merely physical efficiency" (p. 86). Rowntree attempted to establish a minimum budget of items that would be needed to meet those needs. This was a

step toward the budget process approach used today.

The Council of Economic Advisers. In its 1964 Annual Report, the Council of Economic Advisers addressed the difficulty in counting persons in poverty by the budget method:

> No measure of poverty as simple as the one used would be suitable for determining eligibility for particular benefits or participation in programs. Nevertheless, it provides a valid benchmark for assessing the dimension of the task of eliminating poverty, setting the broad goals of policy, and measuring our past and future progress toward their achievement (1964, p. 57).

The Council of Economic Advisers (1964) defined those in poverty as "the number of families who do not have the resources to provide minimum satisfaction of their own particular needs" (p. 57). They also stated that, "By the standards of contemporary American society most of the population of the world is poor; and most Americans were poor a century ago" (p. 57).

The council (1964) adopted an adjusted low-cost budget prepared by the Social Security Administration. The budget was prepared for a nonfarm family of four. The budget was drawn in specifics; so many potatoes, loaves of bread, coffee, haircuts, and kilowatts of electricity over a period of time. The budgets were not drawn in terms of money, but in terms of goods and services. Presumably the families unable to purchase the minimum budget represent the families in poverty. The defined

poverty line, for a family of four, was established at $3000 before taxes in 1962 prices.

Social Security Administration. The most well-known measure of poverty is the Poverty Index or Poverty Line (Orshansky, 1969). It is a measure of purchasing power adequacy or the upper limit of inadequacy. The Social Security Administration constructed indexes by the simplest technique (Perlman, 1976). Using the Department of Agriculture "economy diet plan", consisting of foods described as applicable for "temporary or emergency use", the Social Security Administration multiplied the cost of the food plan by three to arrive at a total consumption figure. Past research has demonstrated that low-income families spend approximately one-third of their total income on food (Orshansky, 1969).

When the original poverty levels were first computed for 1963, they were based on the United State Department of Agriculture (USDA) 1961 Economy Food Plan and the 1955 Survey of Food Consumption. The 1955 Survey of Food Consumption provided an estimate of the proportion of after-tax money income that the average family spent for food. The reciprocal of this ratio, determined from the 1955 survey at about 3, was multiplied by the Economy Food Plan to derive the original poverty thresholds.

The Social Security Administration did succeed in describing a poverty standard accommodating many variables

such as family composition (Orshansky, 1965) and it is indexed to the price of food. However, it does not reflect changes in the nation's overall level or living i.e., how other families in the United States live, nor does this measure account for cultural or geographic differences.

Relative Poverty

Galbraith (1958) defined poverty as follows: "people are poverty striken, when their incomes, even if adequate for survival, fall markedly behind that of the community" (p. 325). Parsons and Smeltser (1956) observed that class and prestige symbolism are a major area of role involvement for the consumption unit. Therefore, consumption locates the family in the social stratification system. Families can be thought of as selecting "target standard packages" which they regard as appropriate for the kinds of persons they conceive themselves to be. The contents of the package will vary depending upon the status or hoped for status of the individual family involved (Rainwater, 1973).

Rainwater (1973) also stated that poverty can only exist in a materialistic society. It is through the consumption of goods and services that members achieve and act out membership in the society. People integrate their desparate experiences into different levels of living.

Riesman and Rosebourough (1960) refer to "conceptions of consumption" appropriate to given levels of living as "the standard package" for each level. The following sections review some measurements of relative poverty.

Keyserling. Keyserling (1964), formerly chairman of the Council of Economic Advisers under President Truman, defined a two-level definition of poverty. Keyserling accepted the poverty line of $3000, but insisted that there was another category of people who live in between being provided for adequately and being counted as in poverty. They were people who lacked sufficient income to purchase what is viewed as the American standard of living.

The modest, but adequate budget was set at $5000 ($2500 for a single individual) in 1962. Families below that sum, he argued, were sufficiently below the income essential to purchase most needs and were classified as in deprivation (Keyserling, 1962).

Fuch. Fuch (1967) suggested that the poverty line be established at half the median family income. This measurement accounted for the changes in the level of living experienced by all members of society.

Ornatti. In describing the concept of relative poverty, Ornatti (1967) constructed a "poverty band" which consisted of three thresholds.

The minimum subsistence line would be the level at

which a household would be eligible for public assistance. The middle line or "minimum adequacy" is the level where a household would pay on a graduated basis for nonmonetary welfare services. The upper line marked the limit for public assistance (Ornatti, 1967).

The significance of Ornatti's band is that the threshold levels increase over time, reflecting the growth in purchasing power of the average household. The income society considers the barest minimum would rise with this type of measurement.

Bureau of Labor Statistics. The Bureau of Labor Statistics in 1978 contracted with the Wisconsin Institute for Research in Poverty to recommend revisions in the Family Budget Program (Watts, 1980). The committee, made up of people with a wide range of experience in methods of developing budget standards and uses of the standards, recommended that four American Family Budget Standards be developed in place of the three currently used budgets. The four levels would be 1) Prevailing Family Standard, 2) Social Minimum Standard, 3) Lower Living Standard, and 4) Social Abundance Standard. These levels and measurements reflect relative status of well-being.

The Prevailing Family Standard was set at the median expenditure level. The other three levels were determined in fixed proportions to this budget. The Lower Living Standard was set at two-thirds of the Prevailing

Standard. The Social Minimum was set at one half of the Prevailing Standard and, in the committee's judgement, families at this level would lie in a zone in which issues of deprivation are appropriate matters of social concern. The Social Abundance Standard was set at 50 percent higher than the Prevailing Family Standard.

Income Distribution Studies

There are many ways to describe the economic position of elderly individuals and families in today's society. Some indicate that the elderly are economically disadvantaged; others would suggest that, as a group, the elderly are no more disadvantaged than the rest of the population (Johnson and Williamson, 1980). It can be misleading to consider statistics describing poverty rates for the elderly as a whole, as the rates vary considerably from one family type to another.

A review of the literature related to the economic status of the elderly follows. The discussion includes measures of dollar income as well as more complete measures developed in recent years which are directed towards the elderly.

Historical Studies

In Colonial America there were strong norms concerning the responsibility of children to their elderly

parents. The majority of Americans lived on the farm at the end of the eighteenth century. An elderly individual typically could expect to be adequately cared for by family members in his/her old age under those circumstances. However, the same was not true for the elderly who did not have children who could provide care for them. By modern standards society's treatment was often callous and indifferent (Johnson and Williamson, 1980).

By the middle of the twentieth century the nation had transformed from a predominantly rural agricultural society to a predominantly urban and suburban industrial society (Johnson and Williamson, 1980). Substantial economic growth and increase in levels of living took place (Johnson and Williamson, 1980). But, this increase was not shared equally by all segments of the population. The economic position of the elderly relative to others was declining (Pechman, Aaron, and Taussig, 1968).

Life expectancy was increasing while family size was on the decline. As a result, a higher proportion of elderly parents were becoming economically dependent on fewer children for a longer period of time. The nature of work was also changing. On the farm it was possible to reduce one's work gradually over a period of years. But there was little demand for an elderly factory worker due to obsolescence of marketable skills, and few were eligible for pensions (Johnson and Williamson, 1980).

The first effort to study the economic status of the elderly was conducted in Massachusetts in 1910. The investigators found that nearly 25 percent of all the elderly were "public paupers" (Fischer, 1977). In the following years, 1910 to 1940, conditions did not improve.

Perhaps the most extensive policy designed to address the economic needs of the elderly population was the Social Security Act of 1935. The Social Security program contributes more to the economic well-being of the elderly than do all other federal, state, and local income programs (Johnson and Williamson, 1980). The act provided for old-age retirement as well as unemployment compensation and categorical aid under state welfare systems. As originally established, Social Security provided for a limited number of benefits and covered less than half of those then in the work force. In subsequent years it has been amended repeatedly to extend benefits to other needs and coverage of the work force (Perlman, 1976).

The first Social Security old-age pensions were paid in 1940. The average Social Security pension to a retired worker was $271 per year in 1940 ($1,172 in 1977 dollars). By 1977, the average amount paid had increased to $2,916. The ratio of the Social Security pension benefits to average family income serves as a measure of purchasing power provided by this pension. The ratio was relatively constant at 14% between 1950 and 1970, but

substantially increased to 18% during the early 1970's, reflection an improvement in the relative importance of Social Security pensions (Johnson and Williamson, 1980).

In 1977 there were 3.2 million aged (14.1 percent of all aged) with money income below the poverty level. This is a sharp decline from 30 percent of the elderly judged to be in poverty in 1959 and 25 percent in 1968 (U.S. Bureau of the Census, 1978). These statistics were based on money income only.

Studies Including Government Transfers

Smeeding. Smeeding (1972) identified significant declines in the number of poor when adjustments were made to current money incomes. Smeeding reported that the percent of elderly families below the poverty level changed from 23.6 to 6.2 when nonmoney resources were included. The additional resources were inkind government transfers, primarily Medicare and Medicaid.

Congressional Budget Office. There was a decline of elderly families judged to be in poverty from 16.7 percent to 6.1 percent when government transfers were included as income in a Congressional Budget Office Study (1977). Medicare, Medicaid, public housing, and food stamps were defined as nonmoney resources. However, most elderly families still reported money income below $6,000.

Watts and Skidmore. Watts and Skidmore (1977)

reported a decline in the number of elderly families in poverty from 13.5 percent to 6.2 percent after adjustments were made for inkind income. The inclusion of selected government transfers did lead to a decrease in the number of families classified as in poverty.

Studies Including Asset Earnings

Steiner and Dorfman. A 1957 study (Steiner and Dorfman, 1957) reported that elderly families often were dissaving. The inclusion of assets (savings) in an expanded income measure resulted in a reduction in poverty.

Weisbrod and Hansen. Weisbrod and Hansen (1968) combined wealth (assets) and earnings into current purchasing power by calculating the annuity value of the assets over the expected life time of the holder. The annual value was added to money income in determining the annual purchasing power of the family. The corrected rating led to a reduction in poverty for the elderly at all money income levels (Weisbrod and Hansen, 1968).

Other Well-Being Studies Including Expanded Measures of Resources

Morgan. The family well-being model, developed by the University of Michigan Survey Research Center, (Morgan, 1978) accounted for money income as well as money needs. It included a measure for household production and leisure.

This model also considered the differences in family composition. The Morgan model failed to incorporate the accumulation of wealth or assets nor was the contribution of fringe benefits recognized (Olson, 1978).

Sirageldin. Sirageldin (1969) concluded that the inclusion of leisure, nonmarket productive activity (household production, school, and volunteer) as well as income received from durables moved families' total incomes towards equality. Families having money income under $1,000 increased their income by $2,023 (284 percent) through nonmarket activity while families receiving over $15,000 money income realized an increase of $3,141 (13 percent).

Taussig. Taussig (1973) measured additional nonmoney resources in a final measure of well-being. Household production, net worth, residing with relatives and leisure were included. The Gini coefficient, a statistical measure of distribution, was computed at .437 when only money was measured and at .376 after the nonmarket goods and services were included. The Gini coefficient is a measure of income concentration which ranges from 0 to 1, with the smaller index numbers reflecting greater income equality among household units.

Baerwaldt and Morgan. Baerwaldt and Morgan (1973) indicated in a report resulting from a University of Michigan Survey Research Center study that interfamily transfers do little to alter income distribution in this

country. The Gini coefficient of inequality is reported at .426 for total money income, but when transfer income is excluded, the coefficient rose to .672. It was concluded that time and money resources redistributed between families was an irregular form of transfer income. However, the researchers did not conclude that it was unimportant either emotionally or economically.

Baerwaldt and Morgan also included household production as having an economic value to the family. They found, in contrast to interfamily transfers, a substantial amount of intrafamily transfers. Their measure of economic well-being also included government transfers (Baerwaldt and Morgan, 1973).

Moon. The measure of yearly economic status of elderly individuals as calculated by Moon (1977) in a 1977 study included earned income, intrafamily transfers, government cash transfers and estimated government inkind transfers. Moon concluded that when nonmoney economic by either 6.9 percent or 8 percent depending upon which poverty measure is used, that of the Social Security Administration or the Bureau of Labor Statistics. The Gini coefficient went from .458 to .398 when specific nonmoney resources were included. While Moon's study was the most comprehensive measure of elderly economic status it ignored many nonmoney resources.

Valuing Nonmoney Economic Resources

Transfers-in-kind can be valued in three ways: (1) at the cost to the provider; (2) at market value; or (3) estimated cash-equivalent value to the recipient. Of the three methods, provider cost is the least recommended. Market values and cash-equivalent values are most often used. Depending upon the primary purpose, both are defensible (Paglin, 1980).

Cash-Equivalent

The traditional economic approach to in-kind transfers taken by Clarkson (1975), Smeeding (1977), and Moon and Smolensky (1978) has followed the utility cash-equivalent method. The cash-equivalent value "is the amount of cash that would make the recipient just as well off as the in-kind transfer" (Smeeding, 1982, p.vi). This method was also used by Scholl (1978) in valuing interfamily grants. This method does not provide for comparison between families or individuals or for an accurate picture of total dollar transfers taking place outside of the market economy (Cooper and Katz, 1977). Also, the cash-equivalent has often been calculated from budget data, which are based on market prices. The cash-equivalents are sensitive to the specification of the utility function. However, it has been assumed that the same utility function was uniformly applicable to all persons

(Paglin, 1980). In practice, the "cash equivalent" method is sometimes or usually derived in a way which seriously distorts the dollar value of the good or service being considered (Cooper and Katz, 1977).

Market Value

Market values are straight forward and objective. The market value ... "is equal to the purchase price in the private market of the goods received by the recipient" (Smeeding, 1982, p. vi). A self selection of participants in a particular program suggests that they place a higher value on the benefits than the non-participants in the same income class. Thus, the market value method provides for comparability between income groups as well as between types of incomes.

A study comparing the results of using different valuation techniques was conducted by Smeeding (1982). Using elderly families as the basis on comparison, he concluded that there was a greater reduction in the number of elderly counted below the poverty line using the market value approach than using the cash equivalent approach. The poverty rate in 1979 dropped from 14.7 percent to 4.5 percent and 7.0 percent respectively. In-kind government transfers (food, housing, and medical care) were included in the total income figure. No adjustment for the poverty line was made. The market-value method

has been used by Clark and Warren (1963), Sirageldin (1969), Walker and Gauger (1970), Congressional Budget Office researchers (1977) and Paglin (1980).

The market values lead to a closer approximation of the dollar required for income equivalence, therefore allowing for more accurate comparisons. And, since utility is an individual measure reflecting only individual preferences, a cash equivalent would vary from family to family and from individual to individual within the same household. This measure would distort any adjustments families would make through the selection process of inkind goods or services available. Therefore, a high ratio of inkind dollars to money income would indicate a real invasion into freedom of choice and dollar return to family and perhaps society.

CHAPTER THREE

METHODOLOGY

This study was designed to measure differences in resource distribution and number of elderly families above an adjusted poverty line when additional economic resources are added to the families' money income. The basic goal of the study was to arrive at the best possible estimate of families' total real income by estimating components of real inputs which are neglected in the conventional national income accounts and earlier family welfare studies. An attempt was made to determine the annual dollar value of all economic resources acquired by elderly families and individuals and the contribution of each resource to total economic well-being.

Population of the Study

The population of the study consisted of individuals and families headed by individuals over 70 years of age residing in Bernalillo County (Albuquerque), New Mexico. The sample was drawn through the use of the 1980 Bernalillo County Voters Registration. The name of the first person having a birthdate listed on or prior to 1910 was selected from pages ending in 10, 25, 35, 50, 60, 75, 85, and 00 through the four books compiled by the County Clerk. Sixty-three percent of the eligible voters in

Bernalillo County were registered to vote in 1980 (Bernalillo County Clerk 1983, Bureau of the Census, 1983). These names were cross checked with the current Albuquerque Telephone Directory to obtain the most current phone number and to assure that the individual was still residing in the Albuquerque area. Names were randomly selected from this list by use of a random number chart.

Data Collecting Instrument

An interview schedule was developed in order to collect the necessary data. The data used in this research were collected, in part through an American Home Economics Association Foundation grant project entitled "Interfamily Grants to Elderly Families and Individuals." The questionnaire was developed based on earlier research (Clark and Warren, 1963; Scholl, 1978). The interview schedule was divided into five sections: 1) demographic information of the household and extended family, 2) grants received in the form of goods, 3) grants received in the form of services, 4) grants received in the form of money, and 5) data for determining the dollar value of the fringe benefits and durable assets (Appendix B).

The data collected in this study were dependent upon the ability of the respondents to remember and describe certain grants accurately and to the level of detail required. In practice, most people are able to recall

important or unusual events in their lives (Hoinville, Jowell and Associates, 1978). Usual events, unless routine, are forgotten or distorted. Interfamily grants have been associated with major events (Scholl, 1978) as well as frequent usual occurrences (Clark and Warren, 1963). Given the detail of the questionnaire, interview technique, and the nature of the data, recall data were appropriate for this study. Previous research in the area of interfamily grants (Clark and Warren, 1963; Scholl, 1978) also used annual recall with good results. Any possible bias that would exist would likely be in the direction of underreporting.

Procedure

A letter of introduction (Appendix A) was mailed, followed by a telephone call from one of the interviewers within two to three days. If the person was willing to participate, an interview time was agreed upon. Participants received $5.00 upon completion of the interview.

Three interviewers were trained individually prior to the actual surveying. The interviewers were instructed to interview the individual over 70 and, if possible, the spouse. A total of 75 families were interviewed during the year of 1980. The interview time averaged approximately 40 minutes. Following the interview the researcher reread the data collected and made followup

phone calls when information appeared to be incomplete.

The dollar values of each economic resource were then computed by the researcher using a market value approach. This information was keypunched and computer analyzed.

Method of Analysis

A discussion of the procedures used to determine the acceptance or rejection of the null hypotheses follows. The analysis of each hypothesis is discussed separately. The method for determining the annual dollar figure for the economic resources and adjustment of the poverty line, as well as the descriptive statistics for the response variables, are also included.

Response Variables

The basic statistical tool used to describe the money and nonmoney variables was the Gini coefficient. The Gini concentration, the variance, and the coefficient of the variation of the distribution of incomes, were calculated. All are measures of income dispersion. The mean, mode, median, range and standard deviation were also reported for each individual resource. The Lorenz Curve is also used for distribution analysis (Guthrie, 1966).

The order in which the economic resources were included for analysis was: 1) money, 2) fringe benefits, 3) household production, 4) durable assets, 5) interfamily

grants, and 6) community provided goods and services. Money income is the primary economic resource recognized in this country and therefore was considered first. Fringe benefits are most often tied to the source of money income, therefore were added second. Household production, durable assets, and interfamily grants were added according to their calculated means, from highest to lowest. Community provided goods and services were considered last in order to determine the additional distributional effects of government policy.

Hypothesis One

> There is no difference in the dollar amount of nonmoney economic resources among elderly families at different money income levels as defined in the American Family Budget Standards.

In order to test hypothesis one, respondents were grouped according to four levels of money income. Mean income of each group, at the four levels of living proposed by the American Family Budget Standards Committee, was used in all calculations. The mean dollar amount of money and nonmoney resources was determined for each group and the proportion of each economic resource was calculated. An F ratio, a test of difference, was computed with a level of significance set at .05 for rejection. If required, a Scheffé followed in order to determine where the differences exist (Hicks, 1973).

Hypothesis Two

> There is no difference in the number of elderly families in poverty when nonmoney resources are included in total economic figures.

The Cochran Q test, an extension of the McNemar test for two related samples, was used in determining the acceptance or rejection of hypothesis two. The Cochran Q test, designed for k related samples, provides a method of testing whether three or more matched sets of frequencies differ among themselves. This matching may be based on the same subjects under different conditions (Siegel, 1956).

There were six conditions under which each subject was tested to determine if they fell above or below the poverty line. The conditions were defined by the addition of each nonmoney economic resource to money income. The nonmoney resources were included in the same order as described in description of response variables on page 37. The level of rejection was set at a .05 level of significance.

In establishing the poverty line for testing hypothesis two, the researcher used the proposed Social Minimum Standard; i.e., one-half of the median income for the total sample at each stage of analysis served as the poverty level. The dollar level increased with the addition of each nonmoney resource.

This measure of poverty reflects a relative level of

living. The nonmoney incomes were valued at a market equivalent and therefore can not be treated as a substitute for dollar income. However, the additional income from nonmoney sources does increase a family's level of total resources. The question is whether or not and/or to what degree the nonmoney income increases an elderly family's objectively measured level of living relative to other elderly families in this study.

Regression Models

Four regression models were used to estimate the relationships between the annual dollar amount of money income, fringe benefits, durable assets, and interfamily grants with the predictor variables (Nie et.al., 1975). If the probability of the calculated F ratio was less than .05 it was concluded that some or all of the predictor variables were related to the respective response variables. A stepwise method was used to determine which predictor variables would be included in the regression equation.

The first predictor variable included in each model was determined to be the one making the greatest contribution in explaining the variability in the response variable. The second predictor variable included in each equation was the one that made the greatest contribution in the regression sum of squares given that the first

predictor variable was already in the equation. The rest of the variables were similarly determined until the F ratio for one additional predictor variable was not significant at the .05 level (Nie et.al., 1975). All response variables were recomputed in base 10 log. The following predictor variables were recoded to represent indicator (or dummy variables): primary and current occupation, education level, sources of money income, type of employment, and health.

Dollar Calculations of Economic Resources

The objective of this study was to arrive at the best possible measure of family economic well-being for elderly families and individuals. In order to obtain a meaningful figure, all incomes were calculated at an annual dollar figure. The following describes the methods used in determining the annual dollar figure for each individual economic resource.

Money

Participants were asked to identify their annual dollar income from pre-selected ranges, as well as sources of that income. The median dollar amount of each range was used in all analyses. See Appendix C for income ranges and medians.

Nonmoney

The nonmoney incomes included in this study were fringe benefits, household production, interfamily grants, consumer durables, and community provided goods and services. Each is discussed separately.

Fringe benefits. Participants were asked to identify any fringe benefits they were receiving from former employers in forms other than money. An example of this would be the continuation of an insurance policy or a railway pass. Participants assigned a dollar value to the individual fringe benefit. It was assumed that the participants knew the value of the goods and services they received as fringe benefits. See page 113 of Appendix A.

Household production. In order to determine the dollar value of household production for each participating household in this study three factors were considered. These factors were: 1) the employment status of the homemaker, 2) the ages and number of the members of the household, and 3) the age of the homemaker (Sanik, 1979; Walker and Woods, 1976). The dollar value of household production was computed from data in the Walker and Woods' study (1976). The method used to determine the market cost has been used in previous studies of this nature (Sirageldin, 1969; Walker and Gauger 1973; Murphy, 1979). See Appendix D and E for further detail.

Durable assets. Given a list of consumer durables (See Appendix A, page 21), participants were asked the purchase price of each item they owned. The items included were those selected from the list used for Bureau of Labor Statistics Standard Budgets for a Retired Couple (1980) that were originally priced over fifty dollars in 1979 dollars. The annual dollar value of the durable assets contributing to the elderly families' levels of living was computed in a method used by earlier researchers (Bivens, 1983; Sirageldin, 1969; Weisbrod and Hansen, 1968). Variations in the basis for establishing the values used in the formula, e.g., expected service life or salvage value, led to differing results. For example, Weisbrod and Hansen (1968) replaced expected service life of the durable with the life expectancy of the elderly individual. Refer to Appendix F for details.

Interfamily grants. In order to determine the dollar value of the resources given to elderly families, the resources must first be identified. Earlier research had focused on the transfer of resources from parents to their married children (Clark and Warren, 1963). The lack of research available about interfamily grants made it necessary for the collection of data specific to grants to the elderly population.

Due to the large variation in goods transferred to the elderly families in this study, the market value of such goods was assigned by the participants. An

assumption was made that the recipient family knew the market value of the goods they received. An exception to this procedure was used for meals eaten in another person's home. The calculations for determining the dollar value of the meals eaten in another person's household was based on the USDA Cost of Food at Home (1979). The low cost plan was selected to avoid over-estimating the dollar value of this grant.

The category of service grants was divided into two groups: borrowed items and services provided to elderly families. To compute the dollar value for a borrowed item, a sample of prices was taken in the Albuquerque area. Using the lowest rental charge for 1979 the dollar value for each individual item was computed. Refer to Appendix G for prices used. The dollar value of a service provided was computed using the same method as described in the household production section.

The respondents of the study were asked the dollar amount of the money grants they received. The amount was recorded except when the grant was in the form of an "interest free loan." The amount of the loan was used in order to determine the interest saved. A rate of 12 percent per annum was used.

Community provided goods and services. The difficulty of assigning a dollar value to community resources has been expressed by previous researchers (Olson, 1965).

In order to determine a dollar value for community provided goods and services it was necessary to examine the redistribution of the tax dollar brought about by government through fiscal policy. Individuals', families', and society's level of living is increased due to goods and services provided through the public sector. Because there is no perfect, or even good, substitute for many government produced resources, for example public education, there was difficulty in determining a true dollar value of these resources to families.

Data from a 1970 study (Reynolds and Smolensky, 1977) discussing the progressive and regressive federal tax structure was used in order to arrive at an estimated dollar value of goods and services provided by the government. The Reynolds and Smolensky (1977) study accounted for the redistribution of income by state as well as federal government. Their study indicated there had been little change in the percentage of income a family received in the form of government services from 1961 to 1970. No adjustments were made for possible shifts in the share of income redistributed through government programs. However, incomes did increase during the period and adjustments were made to match 1978 median incomes.

Reynolds and Smolensky (1977) calculated the dollar value of government provided goods and services to families based on income categories. The percentage of

government transfers to current money income as reported by the participants was used. This figure does not include transfers from local government or non-profit agencies. Refer to Appendix H for details. The formula used for valuing money and nonmoney resources is located in Appendix I.

CHAPTER FOUR

FINDINGS

Following the sample description, this chapter includes a reporting of the results of hypothesis testing and presentation of models.

Sample Description

The sample description of this study was based on selected characteristics determined to be important to an elderly individual's economic well-being. A comparison to the elderly population in Bernalillo County, New Mexico, was made, when possible.

A total of 400 households needed to be drawn in the process of obtaining a sample size of 75 elderly persons. A sample completion rate was computed according to the following formula:

$$\text{COMPLETION RATE} = \frac{\text{NUMBER OF COMPLETED INTERVIEWS}}{\text{TOTAL - INELIGIBLE FAMILIES}} \times 100$$

"Ineligible" families were defined as those which did not meet the age requirement, had moved, or were deceased. The completion rate for this study was 19 percent.

$$19\% = \frac{75}{400-6} \times 100$$

Selected Sample Characteristics

Age. By definition, all participants had to be age 70 or older. The mean age of the participants was 74.

The range was from 70 years to 91 years. For female and male participants, the mean age was also 74 years of age. For spouses of the participants the mean age was 70 years (Table 1).

Table 1. Mean age and living arrangements of participants.

	Living Alone			Couple			Other Living Arrangements		
	Age	#	(%)	Age	#	(%)	Age	#	(%)
Female	76	22	(29)	70	40	(54)	75	4	(05)
Male	75	3	(04)	73			75	4	(05)
Couple		—	—		—	—	75*	2	(03)
		25	(33)		40	(54)		10	(13)

*Mean age of both males and females was identical.

Living arrangements. The median household size was two persons and the mean household size was 1.9 persons. The majority of participants were living as couples (40, 54 percent) (Table 1). The composition of the remainder of the households was as follows: female, living alone (22), 29 percent; male, living alone (03), 4 percent; and other arrangements (10), 13.2 percent. Other arrangements included living with a friend or relative other than a spouse.

Dollar income. Median income for all participants was $9187 compared with $7512 for all elderly over 65, in Bernalillo County (Table 2). The mean income was $11,216 compared with $11,717 for all elderly households in Bernalillo County (U.S. Bureau of the Census, 1980).

Table 2. Mean income of sample participants by sex and living arrangements.

	Living Alone				Couple		Other		Total	
	Female		Male							
Income Groups	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
0- 5,999	13	(17)	1	(01)	6	(08)	2	(03)	22	(29)
6,000-11,999	8	(11)	2	(03)	18	(24)	5	(07)	33	(44)
12,000-19,999	0	(00)	0	(00)	10	(13)	2	(02)	12	(16)
20,000-24,999	1	(01)	0	(00)	2	(03)	0	(00)	3	(04)
25,000+	0	(00)	0	(00)	4	(06)	1	(01)	5	(07)
Total	22	(29)	3	(04)	40	(54)	10	(13)	75	(100)

The mean income for elderly females living alone ($5948) was lower than for elderly males who were living alone ($7500). The mean income for couples was highest at $13,325. Participants living in another arrangement had a mean dollar income of $12,000. All dollars are reported in 1979 dollars.

Other family members. There were ten elderly participants who were living in family arrangements other than alone or with their spouse. In all cases, the extra family member(s) was a child. In one case there was a daughter and son-in-law and their two young children living with the elderly mother. In five of the situations a son was living alone with an elderly parent or parents.

Socioeconomic status. Socioeconomic Status scores were calculated using Hollingshead's "Two Factor Index of Social Position". The scores were a composite of the following factors: education and primary occupation. The male's level of education and primary occupation were used in all possible cases (Table 3).

Ethnic. The majority of the participants (81 percent) were reported as Anglo. Sixteen percent of the participants were Hispanic and three percent were classified as "other" (Table 4).

Comparison to Bernalillo County

A comparison of the elderly in this study with the

Table 3. Socioeconomic status of participants by sex and living arrangements.

Socioeconomic Status*		Living Alone				Couple		Other		Total	
		Female		Male							
		#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
1	High	1	(01)	0	(00)	3	(04)	1	(01)	5	(06)
2		3	(04)	0	(00)	9	(12)	4	(06)	16	(21)
3		13	(17)	2	(03)	14	(19)	3	(04)	32	(43)
4		3	(04)	1	(01)	9	(12)	1	(01)	14	(19)
5	Low	2	(03)	0	(00)	5	(07)	1	(01)	8	(11)

*(Hollingshead, Note 1)

elderly in Bernalillo County was conducted and the following similarities and differences were noted. The elderly in this study were like the elderly in Bernalillo County in income. The elderly in this study were different from the elderly in Bernalillo County in ethnic makeup. There was an over-representation of Anglo families compared to Hispanic families in the sample (Table 4).

Table 4. Ethnic background of sample participants and residents of Bernalillo County, New Mexico.

Ethnic Group	Sample (#)	Sample (%)	Bernalillo County* (%)
Anglo	61	(81)	(46)
Hispanic	12	(16)	(42)
Other	2	(3)	(12)
Total	75	(100)	(100)

*(U.S. Bureau of the Census, Note 2)

Description of Variables Included in the Regression Models

Predictor Variables for Regression Model 1: Money Income

The first regression model estimates the relationships of money income received by the elderly individual to the predictor variables: participant's primary occupation, participant's current occupation, participant's education, spouse's primary occupation, spouse's current occupation,

spouse's education, and number of sources of money income. Each of these is discussed below.

Primary and current occupation. The primary occupation of the participant and spouse was identified by the participant as the occupation in which they had spent the majority of their career. The current occupation was the occupation in which they were currently employed (Table 5).

The most frequent response to primary occupation of the participant was administrative/small business owners (35 percent), followed by skilled (21 percent), management/professional (17 percent), and clerical/technical (15 percent). The majority of the participants (95 percent) were currently retired. The remainder (5 percent) were classified as homemakers.

The majority of the spouses were classified as homemakers (45 percent) for their primary occupation, followed by administrative/small business owners (30 percent), and skilled (12 percent). Currently fifty-five percent of the spouses were retired and the remainder (45 percent) identified themselves as homemakers.

Education level. The most common level of education obtained by the participants in this study was post secondary (24 percent) (Table 6). This was followed by four years of college (20 percent), completed high school (17 percent), some high school (13 percent), below seventh grade (11 percent), graduate school (8 percent), and

Table 5. Primary and current occupations of participants and spouses.

Occupation Category	Participant				Spouse			
	Primary		Current		Primary		Current	
	#	(%)	#	(%)	#	(%)	#	(%)
Executive/Major Professional	2	(03)	0	(00)	0	(00)	0	(00)
Management/ Professional	13	(17)	0	(00)	2	(05)	0	(00)
Administrative/ Small Business Owners	26	(35)	0	(00)	12	(30)	0	(00)
Clerical/ Technical	11	(15)	0	(00)	3	(08)	0	(00)
Skilled	16	(21)	0	(00)	5	(12)	0	(00)
Semiskilled	2	(03)	0	(00)	0	(00)	0	(00)
Unskilled	1	(01)	0	(00)	0	(00)	0	(00)
Homemaker	4	(05)	4	(05)	18	(45)	18	(45)
Retired	0	(00)	71	(95)	0	(00)	22	(55)
Total	75	(100)	75	(100)	40	(100)	40	(100)

grades 8-9 (7 percent). Forty percent of the spouses had completed college.

Table 6. Educational level of participants and spouses.

Educational Level	Participant #	Participant (%)	Spouse #	Spouse (%)
Graduate School	6	(08)	4	(10)
4 Years College	15	(20)	12	(30)
Post Secondary	18	(24)	7	(18)
High School	13	(17)	8	(20)
Grades 10-11	10	(13)	1	(02)
Grades 8-9	5	(07)	5	(13)
Below Grade 7	8	(11)	3	(07)
Total	75	(100)	40	(100)

Sources of money income. The most frequent source of income for the participants in this study was Social Security (92 percent) followed by interest (83 percent) and dividends (43 percent) (Table 7).

The number of sources ranged from one to seven with twenty-nine percent of the families receiving income from four sources. Twenty-five percent of the families received income from two sources and twenty-four percent received income from three sources. The mean number of money income sources was three.

Table 7. Sources of money income.*

Source	Number of Families
Social Security	69
Interest	62
Dividend	32
Annuity	23
Government Pension	12
Rent	8
Other	8
Inheritance	4
Trust	3
Welfare	2
Wages	2

*Participants selected all that applied.

Predictor Variables for Regression Model 2: Fringe Benefits

The second model estimates the relationship of the dollar value of fringe benefits to the predictor variables: participant's primary occupation, participant's current occupation, participant's education, type of employment, spouse's primary occupation, spouse's current occupation, spouse's education and money income. Money income is discussed in Description of Economic Resources, page 62. All other variables are discussed under

Predictor Variables for Regression Model 1: Money Income except type of employment which follows.

Type of employment. Type of employment was divided into three categories; 1) government, 2) employed by large business, and 3) employed by or owner of small business. Twenty-one (28 percent) of the participants were employed by some level of government agency. Thirty-five percent of the participants were employed by a large business or corporation while the largest percentage (37) were employed by or owned a small business.

Predictor Variables for Regression Model 3: Durable Assets

The third model tests the relationships of income received from owning consumer durables to the predictor variables: homeownership and number of cars. The variables homeownership and number of cars are discussed in this section. A description of money income can be found in Results of Hypothesis Testing and Description of Economic Resources, page 62 .

Homeownership. Sixty (80 percent) families owned their home. The high percentage of homeowners was to be expected based on results of an earlier study (Murray, 1972) which reported 77 percent of families with head of household over 65 owned their own homes.

Number of cars. The number of cars ranged from none (19 percent) to three (3 percent). The most frequent

reporting was ownership of one car (48 percent) followed by two cars (31 percent).

Predictor Variables for Regression Model 4: Interfamily Grants

The fourth model estimates the relationships of the annual dollar value of interfamily grants received by the elderly individual to the predictor variables: whether or not there are children; number of children; distance children live from recipient; length of time in 1) New Mexico, 2) Albuquerque, and 3) present home; health; participant's education; participant's primary occupation; participant's current occupation; spouse's education, spouse's primary occupation and spouse's current occupation. The last six predictor variables used in this model have been discussed earlier and will not be discussed here (Predictor Variables for Regression Model 1: Money Income, p.51). The descriptions of the other predictor variables follow.

Child related variables. There are three variables pertaining to the children of the elderly individuals and families in this study. These are 1) whether or not there are children, 2) the number of children, and 3) the distance the children live from the recipient of the grants.

Twelve percent of the elderly individuals or families did not have children (Table 8). The number of children ranged from one to eight, with two being the most common

(25 percent). There was a total of 172 children among the 66 families who had children, with a mean of 2.6.

Table 8. Number of children of participants.

Number of Children	Family #	Family (%)
0	9	(12)
1	17	(23)
2	19	(25)
3	14	(19)
4	9	(12)
5 or more	7	(09)
Total	75	(100)

The variable distance of children from parents was computed by summing the distance each child lived from their parent using a scoring system related to mileage categories. The further a child lived from the parent or the fewer number of children, the lower the total distance score assigned (Table 9). Each child was assigned a number ranging from one to five; one indicating the child lived over 500 miles; two, 101 to 499 miles; three, 21 to 100 miles; four, 20 miles; and five, walking distance.

The distance scores ranged from zero (when there were no children) to 30 (when there was a combination of many children living close, but not in the same households as

the elderly parent. The most frequent scores ranged from one to five (47 percent).

Table 9. Distance scores of participants: combining number of children and distance from parents.

Score	Families #	(%)
0	9	(12)
01-05	35	(47)
06-15	24	(32)
over 16	7	(9)
Total	75	(100)

Residence variables. There were three residence variables designed to indicate the degree of attachment to a community. These were length of time (years) in 1) New Mexico, 2) Albuquerque, and 3) current home (Table 10).

Twelve (16 percent) of the participants in this study were native New Mexicans and 10 (13 percent) were natives of Albuquerque. The most frequent reporting of length of time in all three residental variables was the most recent, 1-9 years or since 1970. The numbers also indicate a large amount of changing of residence within the past 10 years.

Health. The majority of the participants (71 percent) reported being in good health (Table 11). Seven participants reported having some type of hearing problem, the

Table 10. Length of time (in years) participants have lived in New Mexico, in Albuquerque, and in current residence.

Number of Years in	New Mexico #	New Mexico (%)	Albuquerque #	Albuquerque (%)	Current Residence #	Current Residence (%)
1-9 (1970-1979)	19	(25)	21	(28)	44	(59)
10-19 (1960-1969)	7	(09)	8	(11)	6	(08)
20-29 (1950-1959)	15	(20)	15	(20)	17	(23)
30-39 (1940-1949)	7	(09)	10	(13)	6	(08)
40+	15	(20)	11	(15)	2	(03)
Native	12	(16)	10	(13)	—	—
Total	75	(99)	75	(100)	75	(101)*

*Errors due to rounding.

most commonly reported health problem of the sample. Needing a cane and eye problems were each reported by three participants. One participant was confined to a wheelchair.

Table 11. Level of health as reported by the participant.

Level of Health	#	(%)
Good	53	(71)
Needs Cane	3	(04)
Hearing	7	(09)
Seeing	3	(04)
Wheelchair	1	(01)
Other	8	(11)
Total	75	(100)

Events. The events included were death, retirement, moving, trip, divorce, accident, illness, bankruptcy, marriage, and hospitalization. A total of 147 events were reported by the 75 sample families, averaging approximately two events annually (Table 12). The number of events ranged from none to five, with 57 (64 percent) families reporting one or two events. Thirty-nine (52 percent) families reported having taken a trip during the past year (Table 12), the most frequent event reported. Illness and hospitalization were reported by 32 and 28

families respectively.

Table 12. Annual events reported by participants.*

Type of Event	Number of Families (n=75)
Trip	39
Illness	32
Hospitalization	28
Death	15
Accident	10
Marriage	6
Moving	6
Retirement	3
Divorce	2
Total	147

*Participants selected all that applied.

Description of Economic Resources

The hypotheses have been stated as null hypotheses for the purpose of statistical analysis. A description of the response variables will proceed the hypotheses testing.

Each economic resource is discussed separately followed by two descriptions of changes in the distribution of resources as each successive nonmoney resource was included in the total measure. Household production and community

provided goods and services were omitted from the second description because the dollar value of each resource was assigned rather than assessed for each family in the study.

Money

The median money income was $9,187.50 (Table 13) and the mean income was $11,216.66. The Gini Coefficient was .344 (1 represents total inequality in the distribution of income and 0 represents equal distribution). The money income of the elderly families in this study was more evenly distributed than was money income in previous studies; Taussig (1973) .437; Baerwaldt and Morgan (1973) .426; and Moon (1977) .458. The wealthiest five percent of the families had 21 percent of the income (Figure 1).

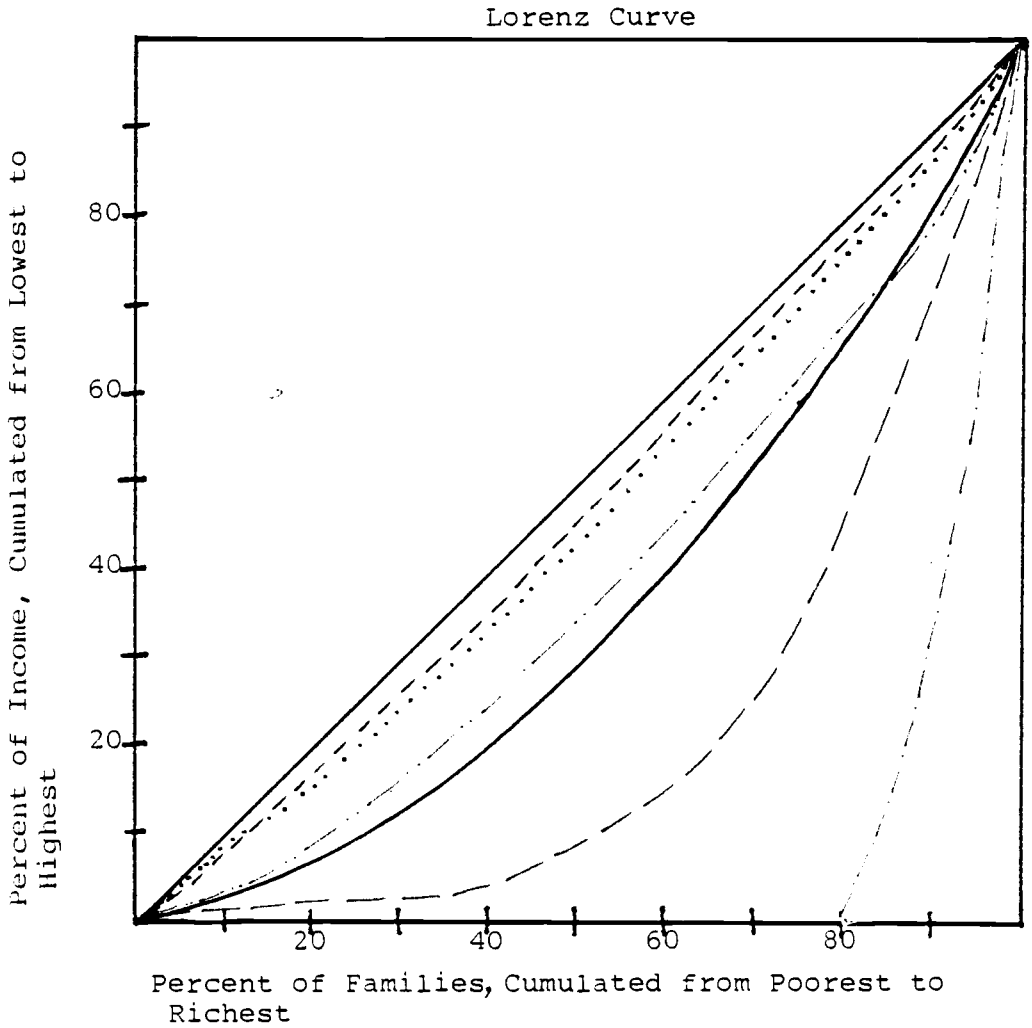
Nonmoney

Fringe benefits. The mean dollar value of fringe benefits received by the elderly participants in this study was $65.16 with a median of $1.37 (Table 13). Eighty percent of the families reported receiving no fringe benefits from previous or current employers. The most common fringe benefit reported from earlier studies was medical insurance (Fringe Benefits, 1977). This benefit, while still the most common after retirement, is replaced by Medicare for most elderly (Schulz, 1980) and would be included in the category of community provided

Table 13. Summary of distribution statistics of individual economic resources.

Economic Resource	Mean $	Median $	Range $	Standard Deviation	Variance	Coefficient of the Variation
Money	11216.66	9187.50	500-47,500	8340.84	69569611.91	74.36
Fringe Benefits	65.16	1.37	0-696	162.52	1698.84	249.49
Household Production	7483.61	8152.69	5868-12,464	1364.03	1860579.00	18.22
Durable Assets	1261.62	1111.00	1-12,210	1517.34	2302320.00	120.26
Interfamily Grants	983.02	575.00	5-5804	1190.33	1416890.27	121.03
Community Provided Goods and Services	7277.26	7261.77	4736-10783	896.34	803434.35	12.31

Figure 1. GINI COEFFICIENTS AND LORENZ CURVES FOR MONEY AND NONMONEY ECONOMIC RESOURCES



	Gini Coefficient
_____ Money	.344
_._._. Fringe Benefits	.800
_ _ _ Household Production	.096
.._.. Durable Assets	.340
_ _ Interfamily Grants	.524
..... Community Provided Goods and Services	.076

goods and services. Fifteen families (of the 20 reported receiving fringe benefits) received medical insurance.

The Gini coefficient was computed at .800 (Figure 1) with the top five percent of the families receiving 40 percent of the fringe benefits. This income component was the most unequally distributed of the individual income components tested. However, fringe benefits totaled only $4,887.00 for all the participants in this study, with only 20 percent of the families in this study reported receiving any fringe benefits. The dollar value ranged from $0 to $696.

Household production. The dollar value of household production assigned to families.in this study was not an individual household measure, but an average measure using data from a prior study for mean times spent in household production. Therefore, due to the limited variation in family composition (four) in this study, small differences among families were expected (Appendix E).

The mean dollar value of annual household production was calculated at $7483.61 and the median was $8152.69 (Table 13). Household production ranged from $5868 to $12,464.00. The Gini Coefficient was .096 (Figure 1). The five percent of the families receiving the greatest contribution to their incomes from household production received seven percent of the total.

Durable assets. The mean dollar value received from

ownership of durable assets was $1261.62 with a median of $1111.00 (Table 13). A .340 Gini Coefficient (Figure 1) was computed. The five percent of the families receiving the greatest income from their durable assets received 24 percent of the total. The total income sample families received from durable assets was $94,621.50. The dollar value of consumer durables ranged from $1 to $12,210.

Interfamily grants. The mean dollar value of interfamily grants received by elderly participants was computed at $983.02 and the median was $575.00 (Table 13). The Gini Coefficient was .524 (Figure 1) with the top five percent of the families receiving 26 percent of the grants. A total of $73,727.02 worth of grants was transferred to the elderly families in this study. The value of interfamily grants ranged from $5 to $5804.

Community provided goods and services. The dollar value for community provided goods and services was not based on the individual households in this study, but rather an earlier study (Reynolds and Smolensky, 1977). The dollar value assigned to community provided goods and services reflected the average dollar value of government provided goods and services to families at a particular income. For this reason, dollar differences between families were slight, and nonexistent for families at the same income level (Appendix H).

The mean dollar value of community provided goods and

services was $7277.26 and the median was $7261.77 (Table 13), ranging from $4736 to $10,783.00. The Gini Coefficient was .076, the most equally distributed of all resources compared in this study (Figure 1).

Income Distribution Changes

First it is important to note that the order in which the nonmoney resources are included makes a difference when assessing the distribution consequences of a particular component. Even though a reasonable ordering for the inclusion of the components has been attempted, caution should be taken in the interpretation of marginal changes in the distribution.

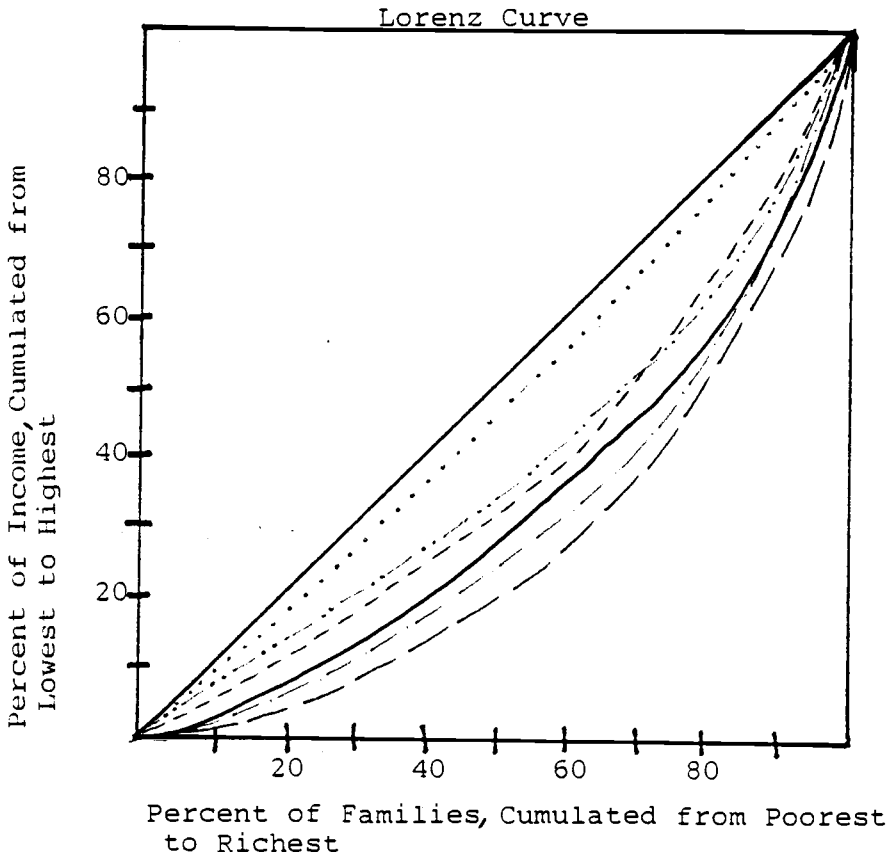
As the nonmoney economic resources were summed, income became more equally distributed except in the case of interfamily grants and to a lesser degree, durable assets. An overall change in the Gini Coefficient went from .344 (with only money income) to .186 when all incomes are included, or a 45.93 percentage change in the Gini Coefficient towards equality (Table 14).

In Figure 2 changes in the Lorenz Curve are illustrated. The data accompanying the changes are reported in Table 15. The general change toward equality is consistent with earlier findings (Moon, 1977; Danziger and Plotnick, 1977; Baerwaldt and Morgan, 1973; Taussig, 1973; Sirageldin, 1969). Most earlier studies reflect only the

Table 14. Percentage changes in Gini Coefficients as economic resources are included in a total income measure.

Economic Resources	Gini Coefficient	Percentage Changes Associated with Each Additional Resource: Fringe Benefits	Household Production	Durable Assets	Interfamily Grants	Community Provided Goods/Services
Income	.344					
Income + Fringe Benefits	.320	6.97				
Income + Fringe Benefits + Household Production	.240	30.23	25.00			
Income + Fringe Benefits + Household Production + Durable Assets	.264	23.25	17.50	-10.00		
Income + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants	.538	-56.39	-68.12	-124.16	-103.78	
Income + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants + Community Provided Goods and Services	.186	45.93	41.87	22.50	29.54	65.45

Figure 2. CHANGES IN DISTRIBUTION OF ECONOMIC RESOURCES AS NONMONEY ECONOMIC RESOURCES ARE INCLUDED IN A TOTAL INCOME MEASURE



		Gini Coefficient
———	Money	.344
.—.—.	Money + Fringe Benefits	.320
- - - -	Money + Fringe Benefits + Household Production	.240
..—..	Money + Fringe Benefits + Household Production + Durable Assets	.264
— —	Money + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants	.538
.....	Money + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants + Community Provided Goods and Services	.186

Table 15. Summary of distribution statistics of money plus nonmoney incomes.

Income	Mean $	Median $	Range $	Standard Deviation	Variance	Coefficient of the Variation
Money	11,216.66	9187.50	500-47,500	8340.84	69569611.91	74.36
Money + Fringe Benefits	11,281.82	9493.75	500-47,500	8367.88	70021465.90	74.17
Money + Fringe Benefits + Household Production	18,765.43	16697.42	8368-55669	8799.16	77425216.71	46.89
Money + Fringe Benefits + Household Production + Durable Assets	20,027.05	18212.27	8375-55975	8846.40	77809970.43	44.17
Money + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants	21,010.07	18356.00	8856-59364	8867.50	78932698.13	42.20
Money + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants + Community Provided Goods and Services	28,287.33	36455.45	15122-67667	9301.68	86521250.82	32.79

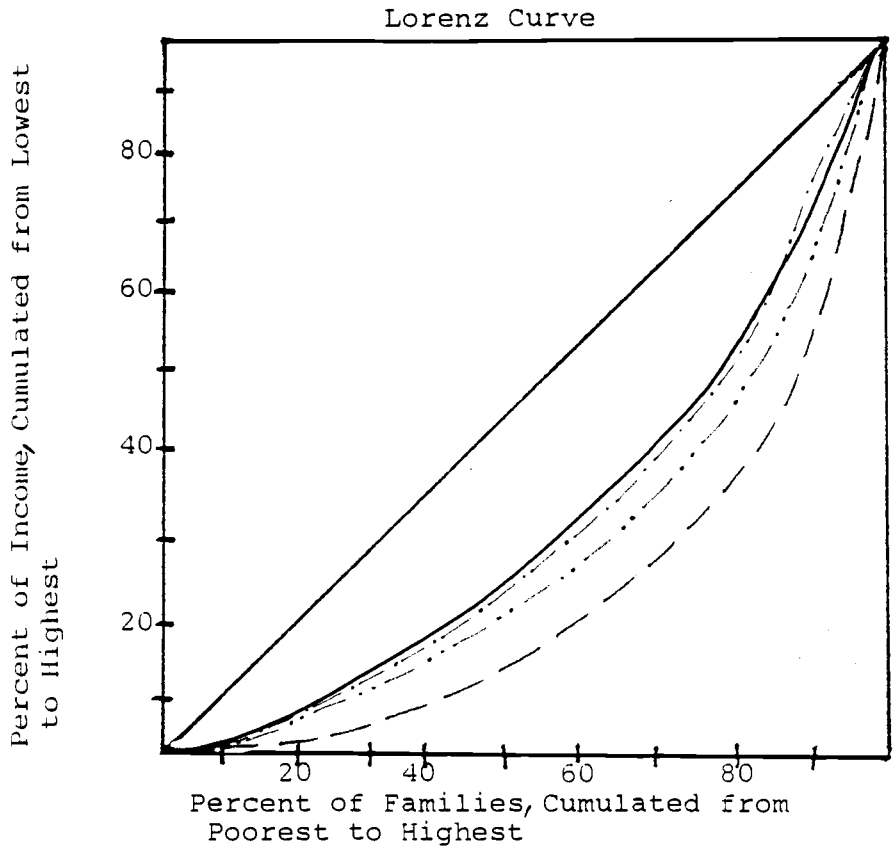
addition of selected community provided goods and services.

It can be concluded that a total income measure results in more equally distributed resources among elderly families than a money measure. However, this was not the case for interfamily grants (-103.78 percent) or durable assets (-10.00 percent). Nor was there a great deal of difference (6.97 percent) when fringe benefits were added. A change in the order the resources were added to the total would change the intermediary numbers but not the direction of equality.

As the nonmoney economic resources were summed, with household production and community provided goods and services omitted, income received from durable assets and interfamily grants tended to shift the Lorenz Curve to the right (Figure 3), an indication of greater inequality in distribution. These distribution statistics are summarized in Table 16.

The relative importance of household production and community provided goods and services to the equality of distribution of economic resources to the elderly families in this study is apparent by comparing the Gini Coefficients of the two different total income measures. When household production and community provided goods and services were not included in the total measure the Gini Coefficient was computed at .616 compared with .186 when the two incomes were included.

Figure 3. CHANGES IN DISTRIBUTION OF ECONOMIC RESOURCES AS NONMONEY ECONOMIC RESOURCES ARE INCLUDED IN A TOTAL INCOME MEASURE, HOUSEHOLD PRODUCTION AND COMMUNITY PROVIDED GOODS AND SERVICES DELETED.



		Gini Coefficient
———	Money	.344
—·—·—	Money + Fringe Benefits	.320
··—··	Money + Fringe Benefits + Durable Assets	.568
— —	Money + Fringe Benefits + Durable Assets + Interfamily Grants	.616

Table 16. Summary of distribution statistics of money plus nonmoney incomes with household production and community provided goods and services deleted.

Income	Mean $	Median $	Range $	Standard Deviation	Variance	Coefficient of the Variation
Money	11,216.66	9137.50	500-47,500	8340.84	69569611.91	74.36
Money + Fringe Benefits	11,281.82	9493.75	500-47,500	8367.88	70021465.90	74.17
Money + Fringe Benefits + Durable Assets	12,543.44	10,531.61	625-48,634	8388.46	70366345.06	66.87
Money + Fringe Benefits + Durable Assets + Interfamily Grants	13,526.46	11,394.77	656-48,715	8343.37	69612473.74	61.68

It needs to be re-emphasized that the methods used to calculate the dollar values of household production and community provided goods and services result in an average for a particular family type (based on income or size) and may not be a true measure for the individual families in this study.

Results and Discussion of Hypothesis Testing

Hypothesis 1

There is no difference in the dollar amount of non-money economic resources among elderly families at different money income levels as defined in the American Budget Standards.

The four levels of income as defined by the American Family Budget Standards Committee (Watts, 1980) are outlined in Table 17.

Among Groups

Fringe benefits. The dollar amount of fringe benefits received by the elderly families in this study was not significantly different among families at different levels of living (Table 18). The averages ranged from $18.33 to $126.34, each contributing less than one percent to the total group income (Table 21).

Household production. The analysis of variance test for difference was not conducted on the dollar value of

Table 17. Levels of living as defined by money income.

Level of Living	Definition	Range $	Mean $
Social Minimum	One-half Prevailing Family (4593.75)	0-4593.75	3366.66
Lower Living	Two-thirds Prevailing Family (6124.66)	4593.76-6124.66	7309.52
Prevailing	Median Income (9187.50)	6124.67-13,781.25	11,293.47
Social Abundance	One and One-half Prevailing Family (13781.25)	13,781.26+	23,593.75

Table 18. ANOVA of income received from fringe benefits by elderly families at different levels of living.

Source	Sum of Squares	d.f.	Variance	F*	Significance of F
Between Groups	162539.596	3	54179.865	2.145	.10
Within Groups	1793220.484	71	25256.627		
Total	1955760.080	74	26429.190		

F*= 2.145 < 8.56 with 3,71 d.f., do not reject at the .05 level of significance.

income received through household production because the measure used was computed from family composition variables and an individual measure was not made. The average and percentage contribution of each individual economic resource to total group income are included in Table 21.

Durable assets. The income received from owning durable assets sums to approximately four percent of the total group income in the four groups. There was a significant difference at a .001 level in the amount of income received from durable assets among families at the different levels of living (Table 19). A Scheffé test was conducted to determine where there was a difference. It was determined, at a .05 level for rejection, that group one (Social Minimum) received significantly less income from owning durable assets while groups three (Prevailing Family) and four (Social Abundance) received significantly greater income from ownership of durable assets.

Interfamily grants. The average dollar value of interfamily grants by the four levels of living is summarized in Table 21. Interfamily grants contributed approximately two to five percent to the family's total income. There was no difference in the dollar amount received from interfamily grants by the elderly families in this study at different levels of living (Table 20) based on the analysis of variance test. Scholl (1978) also found no significant relationship between dollar value of interfamily grants and family income, with one exception;

Table 19. ANOVA of income received from durable assets by elderly families at different levels of living.

Source	Sum of Squares	d.f.	Variance	F*	Significance of F
Between Groups	34952.962	3	11650.987	9.114	.001
Within Groups	90761.971	71	1278.338		
Total	125714.933	74	1698.850		

F*= 9.114 > 8.56 with 3,71 d.f., reject at the .05 level of significance.

Table 20. ANOVA of income received from interfamily grants by elderly families at different levels of living.

Source	Sum of Squares	d.f.	Variance	F*	Significance of F
Between Groups	468877.520	3	56292.507	.106	.95
Within Groups	.104E+09	71	.147E+07		
Total	.105E+09	74	.142E+07		

F*= .106 < 8.56 with 3,71 d.f., do not reject at the .05 level of significance.

auto care and repair.

Community provided goods and services. The average dollar value of income received from community provided goods and services by elderly families in this study contributed between 19 and 37 percent of the total income (Table 21). A test for differences was not computed due to the method of assessing this income.

Within Groups

The incomes received by elderly families from each of the economic resources within a particular level of living are not independent and therefore, an analysis of variance cannot be conducted. However, the incomes within the four groups will be discussed in relation to each other.

Social minimum. The lowest income category, Social Minimum, was the only income category of the four where money income did not contribute the greatest dollar value (Table 21). Community provided goods and services and household production contributed 74 percent ($14,113) of the total income for families in the lowest level of living category compared to 18 percent ($3366) from money income. Interfamily grants contributed five percent ($1009) while fringe benefits and durable assets contributed very little economically.

Lower living. Thirty-two percent ($7309) of the income received by elderly families in the Lower Living

Table 21. Mean dollar incomes received from money and nonmoney economic resources by elderly families at four levels of living.

Income	Social Minimum		Lower Living		Prevailing Family		Social Abundance	
	$	(%)	$	(%)	$	(%)	$	(%)
Money	3366.66	(18)	7309.52	(31)	11,293.47	(40)	23,593.75	(56)
Fringe Benefits	24.40	(00)	18.33	(00)	126.34	(00)	78.75	(00)
Household Production	7043.46	(37)	7292.42	(31)	7468.69	(26)	8168.62	(19)
Durable Assets	373.33	(02)	994.50	(04)	1202.00	(04)	1510.50	(04)
Interfamily Grants	1009.73	(05)	1079.57	(05)	876.21	(03)	984.81	(02)
Community Provided Goods and Services	7070.00	(37)	6989.14	(29)	7278.21	(26)	7835.43	(19)
Total	18,887.58	(99*)	23,683.48	(100)	28,253.92	(99*)	42,171.86	(100)
(#)	(15)		(21)		(23)		(16)	

*Errors due to rounding.

income group was in the form of money (Table 21), household production provided 32 percent ($7292), followed by community provided goods and services at 30 percent ($6939), with interfamily grants at five percent ($1079) and durable assets at four percent ($994) contributing to the remainder of the income. Income from fringe benefits contributed less than one percent to the total income.

Prevailing family. The families in the prevailing family income group received 40 percent of their income from money ($11,293) (Table 21). Household production contributed the second greatest dollar value at 26 percent ($7468) followed by community provided goods and services at 26 percent ($7287), durable assets at four percent ($1202), interfamily grants at three percent ($876), and fringe benefits at less than one percent ($126).

Social abundance. Money income contributed 56 percent ($23,593) of the total income for elderly families in the social abundance category (Table 21). This was the only group in this study where the total money income contributed more economically to the total income than did the nonmoney incomes combined. The order of the greatest economic contribution to the least economic contribution, which was established by the other income groups, was also apparent in this category.

Hypothesis 2.

There is no difference in the number of elderly families in poverty when nonmoney resources are included in total economic figures.

The Cochran Q test was used in determining the acceptance or rejection of hypothesis two, with the criterion for significance set at the $p \leq .05$ level. This hypothesis was tested under two conditions; 1) when all nonmoney resources were included in the total figure and 2) when household production and community provided goods and services were omitted. Table 22 is a summary of the changes in the poverty level (defined as one-half the median income of the dollar value of the resources included).

Hypothesis two was rejected. There was a significant decrease in the number of families below the poverty level when money and all nonmoney resources were included in the measure. Fifteen families were defined as below the poverty line using money as the only measure of resources and no family was considered in poverty after all nonmoney resources were included.

After removing household production and community provided goods and services from the measure, nine elderly families remained below the poverty level despite the other economic resources being included in the measure. The decrease was still significant ($p \leq .05$) with the inclusion of interfamily grants resulting in six additional

Table 22. Changes in number of elderly families below the poverty level as nonmoney economic resources are included in the total measure.

Resources Included (poverty level)	Number of Families Below the Poverty Level	Number of Families Above the Poverty Level	Cochran Q	d.f.	Significance
Money ($4594)	15	60			
Money + Fringe Benefits ($4747)	15	60	15.00	1	.001
Money + Fringe Benefits + Household Production ($8335)	0	75	1.00	1	.317
Money + Fringe Benefits + Household Production + Durable Assets ($9106)	1	74			
Money + Fringe Benefits + Household Production + + Durable Assets + Interfamily Grants ($9178)	1	74	1.00	1	.317
Money + Fringe Benefits + Household Production + Durable Assets + Interfamily Grants + Community Provided Goods and Services ($18227)	0	75			

families moving above the poverty line (Table 23).

This change is interesting because by the first method, the addition of interfamily grants resulted in no relative change among families. This demonstrates the importance of the order of summation, and the first and last numbers should be given the most attention.

This finding is consistent with earlier studies (Smeeding, 1982; Smeeding, 1977; United States Congress, Congressional Budget Office, 1977; Watts and Skidmore, 1977; Moon, 1977; Weisbrod and Hansen, 1968). However, these studies only accounted for selected nonmoney economic resources and did not adjust the poverty level. This finding demonstrates the importance of both money and nonmoney economic resources to elderly families and individuals, consistent with an earlier conclusion by O'Brien and Wagner (1980).

Results and Discussion of Regression Models

Multiple regression was used in order to predict the response variable (type of income) using selected predictor variables. Each model is discussed separately.

Regression Model 1: Income

A stepwise multiple regression procedure was used. Two of the identified variables; number of sources of income and whether or not a participant's primary occupation was classified as management or professional, met the

Table 23. Changes in number of elderly families below the poverty level as nonmoney economic resources are included in the total measure (household production and community provided goods and services are not included).

Resources Included (poverty level)	Number of Families Below the Poverty Level	Number of Families Above the Poverty Level	Cochran Q	d.f.	Significance
Money ($4594)	15	60			
Money + Fringe Benefits ($4747)	15	60			
Money + Fringe Benefits + Durable Assets ($5265)	15	60	4.00	1	.046
Money + Fringe Benefits + Durable Assets + Interfamily Grants ($5697)	9	66			

criterion of acceptance ($p \leq .05$) (Table 24). The number of sources of income served to explain 18 percent of the variability in money income while the two variables combined accounted for 24 percent.

The fitted equation was:

$$\log(\text{money income}) = \underset{(\text{t-value})}{3.622523\ (7.61)} + \underset{(5.44)}{.088894X_1} + \underset{(4.22)}{.2379554X_2}$$

where

X_1 = number of sources of income (range of zero to seven)

X_2 = primary occupation of participant was management (1=yes; 0=no)

Table 24. Results of testing the selected predictor variables in regression model 1: money income.

	Constant b_0	Number of Sources b_1	Participant's Primary Occupation: Management b_2	r^2	Adjusted r^2
	3.6225232	.0888944	.23795542	.2420	.2209
(F)	(1797.1550)	(13.367906)	(5.86485)		
	3.6206628	.099093		.1802	.1690
(F)	(1683.2872)	(16.055065)			

The F value for testing the null hypothesis:

$$H_o: \quad Y_i = B_o + e_i$$

was computed at ($p \leq .001$) (Table 25) thus rejecting the null hypothesis in favor of the alternative:

$$H_a: \quad Y_i = B_o + B_1X_1 + B_2X_2 + e_i.$$

Table 25. Analysis of variance for regression model 1: money income.

Source	d.f.	Sum of Squares	Mean Square	F*
Regression	2	1.86592	.93296	11.49
Residual	72	5.84372	.08116	
Total	74	7.70964		

F*= 11.49 > 3.10 with 2,72 d.f., reject at the .05 level of significance.

The other variables tested; indicator variables denoting the levels of participant's primary occupation (p.53), participant's education (p.54), spouse's primary occupation, spouse's current occupation, and spouse's education, did not meet the criterion and therefore were not included in the regression equation. The individual sources of money income were also computed as indicator variables but were not included in the model.

The larger the number of sources of income, the greater the income of the elderly participant. This is perhaps an indication of pre-retirement planning and implementing. The second variable, whether or not the participant's primary occupation was management/professional may be

some indication of total lifetime earnings and the ability to save for the retirement years.

Regression Model 2: Fringe Benefits

No variable identified in this study met the criterion ($p \leq .05$) for acceptance in explaining the dollar amount of fringe benefits received by elderly families. The large portion (80 percent) of the families reported not having received any fringe benefits may contribute to the difficulty in explaining any relationship. The predictor variables tested in this study were: participant's primary occupation, participant's current occupation, participant's education, type of employment, spouse's primary occupation, spouse's current occupation, spouse's education, and money income.

Regression Model 3: Durable Assets

Two of the predictor variables were determined to have some influence on the response variable, the dollar income from durable assets. Homeownership had a correlation coefficient (r^2) of .4456 (Table 26) indicating that 44 percent of the variation in the amount of dollar income could be explained by whether or not the elderly participant owned a home. When the number of cars were included in the model, the two variables combined to explain the variation in dollar amount of durable assets to

54 percent. Income was not included in the model. The fitted equation was:

$$\log(\text{dollar value of durable assets}) = \underset{(t\text{-value})}{\underset{(5.08)}{.47705536}} + \underset{(3.82)}{1.3388002X_1} + \underset{(3.37)}{.93678193X_2}$$

where

X_1 = homeownership (1=yes; 0=no)

X_2 = number of cars (range from zero to three).

Table 26. Results of testing the selected predictor variables in regression model 3: durable assets.

	Constant b_0	Homeowner b_1	Number of Cars b_2	r^2	Adjusted r^2
(F)	.47705536 (13.394)	1.3388002 (85.589)	.93678193 (15.1914)	.5422	.52954
(F)	.64236982 (22.741)	1.1734857 (58.691)		.4456	.43808

Based on the results of the F test, the null hypothesis

$$H_o: \quad Y_i = B_o + e_i$$

was rejected in favor of the alternative hypothesis (Table 27):

$$H_a: \quad Y_i = B_o + B_1X_1 + B_2X_2 + e_i.$$

Regression Model 4: Interfamily Grants

Two predictor variables; number of events and whether or not there were children, explained 25 percent of the variability of the dollar amount of interfamily grants received by the elderly participants in this study (Table 28).

The fitted equation was:

$$\begin{aligned} \log(\text{dollar value of interfamily grants}) &= 1.965529 \\ &\quad \text{(t-value)} \qquad (4.03) \\ &+ .15634272X_1 \\ &\quad (3.74) \\ &+ .49703848X_2 \\ &\quad (3.70) \end{aligned}$$

where

X_1 = number of events (score ranged from zero to seven)

X_2 = whether or not there were children (0=no; 1=yes).

In testing the null hypothesis:

$$H_o: \quad Y_i = B_o + e_i$$

Table 27. Analysis of variance for regression model 3: durable assets.

Source	d.f.	Sum of Squares	Mean Square	F*	Significance
Regression	2	22.02707	11.01354	42.64656	.001
Residual	72	18.59411	.25825		
Total	74				

F* = 42.64656 > 3.10 with 2,72 d.f., reject at the .05 level of significance.

against the alternative hypothesis:

$$H_a: \quad Y_i = B_o + B_1X_1 + B_2X_2 + e_i$$

it was determined that the F* equaled 12.09069 thus accepting the alternative hypothesis (Table 29).

Table 28. Results of testing the selected predictor variables in regression model 4: interfamily grants.

	Constant b_0	Number of Events b_1	Children* b_2	r^2	Adjusted r^2
(F)	1.965555 (121.869)	.1563427 (13.791)	.497038 (7.836)	.2514	.2306
(F)	2.377777 (516.080)	.16918500 (14.945)		.1699	.1585

*Indicator variable where 1= children and 0= no children.

The following variables were not included in the model: number of children, distance children live from recipient; length of time in 1) New Mexico, 2) Albuquerque, and 3) present home; health; participant's education; participant's primary and current occupation, spouse's education; and spouse's primary and current education.

The increase in the number of events is positively associated with the dollar increase in grants to elderly families. This finding is consistent with earlier grants research (Scholl, 1978; Warren and Clark, 1963).

Table 29. Analysis of variance for regression model 4: interfamily grants.

Source	d.f.	Sum of Squares	Mean Square	F*	Significance
Regression	2	5.96587	2.98293	12.09069	.001
Residual	72	17.76335	.24671		
Total	74	23.72922			

F* = 12.09069 > 2.70 with 3,71 d.f., reject at the .05 level of significance.

The presence of children, not number, proved to have a stronger association with the dollar amount of grants.

CHAPTER FIVE

SUMMARY AND IMPLICATIONS

The purpose of this research was to arrive at the best possible estimate of elderly families' total real income by estimating components of real inputs which are neglected in the conventional national income accounts and earlier family welfare studies. An attempt was made to determine the annual dollar value of all economic resources acquired by elderly families and individuals and their contribution to total economic well-being. The results of this pilot study may not be extrapolated to the entire population because of the restricted nature of the sample. However, even within such a limited framework, this measure can be beneficial in theorizing direction of the effects of various economic resources. This research provides a base for developing a more complete measure of total economic well-being.

In addition to determining an annual dollar amount of each resource; money, fringe benefits, household production, durable assets, interfamily grants, and community provided goods and services, statistical tests were used to determine if differences in nonmoney resources existed among families at different levels of living as defined by their relative level of economic well-being. Relationships among the different types of incomes and

various predictor variables were hypothesized and estimated. It was determined, through income distribution statistics and statistical tests of significance whether or not the addition of each nonmoney resource to money income had any effect on the elderly participants' relative economic well-being.

The data were collected in Bernalillo County (Albuquerque), New Mexico, during the first months of 1980 by interviewing 75 residents over 70 years of age.

Summary of Findings

The participants in this study had a mean age of 74 years. Median household size was two persons. The majority of participants lived in two-person households, were married, currently retired, and identified themselves as "Anglo". Nine participants reported having no children, with two children being the most common. The number of children ranged from zero to eight.

Median family income was $9187.00. The mean number of money income sources was three. Social Security and interest were the two sources most frequently reported. The participants in this study were compared with the elderly in Bernalillo County on the basis of income. The mean income of the elderly in this study was $11,216 compared with $11,717 for the elderly (over 65) in Bernalillo County.

Sixty families owned their home. The number of cars per family ranged from zero to three with the majority of participants having one car.

The Gini Coefficient of each of the individual economic resources was computed. Income received by participants from community provided goods and services was the most equally distributed type of income (.076), followed by household production (.096). This result was not unexpected due to the valuation method. Of the economic resources specific to individual families in this study, durable assets (.340) and money income (.344) were the most equally distributed. Interfamily grants (.524) and fringe benefits (.800) were the least equally distributed.

The total income measure resulted in greater equality of income distribution among the elderly families in this study. The Gini Coefficient changed from .344 (with only money income) to .186 when all incomes were included. However, when household production and community provided goods and services were excluded from the total measure, the Gini Coefficient rose from .344 to .616, an indication of greater inequality.

An analysis of variance was computed to determine if there was a significant difference ($p \leq .05$) between the dollar amount of the specific nonmoney resources available to the families at the four different levels of living, as defined by the American Family Budget Standards

Committee (Watts, 1980). It was determined that there was no difference in the dollar amount of fringe benefits or interfamily grants between families at different levels of money income. However, there was a significant difference ($p \leq .05$) in the dollar amount of income received from durable assets between elderly families at different money income levels. No test was computed on the dollar amount of income contributed through household production or community provided goods and services.

The Cochran Q test was used to determine whether or not a significant change in the numbers of families below poverty took place as nonmoney resources were included in the total measure. The poverty line was adjusted for the inclusion of each additional resource. Fifteen (20 percent) families, based on money income alone, were defined as in poverty. After the inclusion of all nonmoney resources, no family was defined as below poverty level. When household production and community provided goods and services were excluded from the total income measure, six of the 15 families were no longer defined as in poverty. However, 12 percent of the elderly families in this study continued to be defined as below the poverty line.

Multiple regression models were developed to explain the variation of income in the form of money, fringe benefits, durable assets and interfamily grants. The predictor

variables included in the money income model were: number of sources of money income and whether or not the participant's primary occupation was management, explaining 24 percent of the variation. None of the selected predictor variables met the criterion for inclusion in the model explaining fringe benefits. The combination of homeownership and number of cars explained 54 percent of the variability in the income received from consumer durables. Two predictor variables; number of events and whether or not there were children explained 25 percent of the variability of the dollar amount of interfamily grants received by the elderly participants in this study.

Implications

Elderly individuals and families in our society face a multitude of problems. Even when including those who continue to lead active lives, the relative need for support services is great (O'Brien and Wagner, 1980). Due to the earning restriction on Social Security benefits, other retirement policies, and a general decline in personal health, it is difficult for the elderly person to reenter the labor force. Additionally marketplace earnings are not as readily available to the elderly population as they are to other family types. Therefore, elderly families may have to increase their economic position through other, less traditional economic resources.

The identification of nonmoney resources to elderly families, could lead to a better understanding of the combination of money and nonmoney resources useful to economic well-being. Although nonmoney incomes increase in importance, they do not totally replace lost earnings. However, money income is a less important source of economic well-being for elderly families than for other family types (Moon, 1978) and the relatively high share of these nonmoney resources may merely be due to the low level of money income. As demonstrated in this study as well as in other studies (Smeeding, 1982; O'Brien and Wagner, 1980; Moon, 1978) a combination of resources provides not only a base for economic well-being but also some alternatives and social support systems necessary for survival. The formal and informal transfer of resources, money and nonmoney, among families should be encouraged and continued.

As a society, we are faced with the question at what level will we tolerate poverty for all persons, particularly for the elderly. We might either remove the legal restrictions on earnings or provide for policies which encourage financial planning as well as the transfer of resources to elderly families.

The current level of federal funding of programs directed toward the elderly does result in a reduction of families in poverty; however, poverty is not eliminated

(Smeeding, 1982). With the anticipated continual increase in the elderly population a rethinking of policies and priority funding of programs would be justified. This was a recommendation from the White House Conference on Aging (Pitts, 1982).

Other recommendations from the White House Conference on Aging included 1) that eligibility requirements to welfare programs disregard personal assets and 2) the phasing out of the earning limitations (Pitts, 1982). This research would support those recommendations as well as the resolution recommending that gifts (interfamily grants) also be disregarded in determining eligibility. The fairness of the progressive tax system dictates a lower tax rate for lower incomes as well as a taxing of the same types of income.

The results of this study, more than any other one aspect, demonstrate the importance of all types of incomes to the economic well-being of the elderly. Professionals, families, and institutions need to be aware of the different incomes and the contribution each is able to make.

Need for Further Study

1. There are several important issues in the evaluation of nonmoney resources which warrant further research. First, the quantity and quality of data on all types of nonmoney resources need to be expanded. Second, refined

procedures for valuing the nonmoney resources need to be developed. Third, procedures should be developed to adjust for underreporting of incomes.

2. Measures specific to individual households need to be developed for all income types and computed in order to obtain a more accurate measure of each family's economic well-being. This applies primarily to household production and community provided goods and services. In addition local private and public goods and services need to be accounted for in the measure.

3. There is a need to develop a better method of determining the economic value of community provided goods and services to families due to the great variety and purpose of the in-kind government transfers, i.e., community centers vs. medicare.

4. Total income measures need to be developed for all family compositions to facilitate comparisons between families of similar needs.

5. Subjective measures of economic well-being need to be developed and tested to obtain a better indication of total well-being.

6. The need for further research to determine the ability of one economic resource to substitute for another is apparent. Earlier researchers have concluded that a combination and mobilization of resources, not just quantity, is what's critical to the well-being of families. However, no "ideal" combination has yet been determined.

REFERENCE NOTE

1. Hollingshead, A. B. Two Factor Index of Social Position. Published in United States of America (privately printed), 1957.

2. U.S. Bureau of the Census. General Population Characteristics: New Mexico: 1980, Washington, D.C.: U.S. Government Printing Office, 1983.

REFERENCES

Baerwaldt, N.A. and Morgan, James N. "Trends in Inter-family Transfers." Surveys of Consumers 1971-1972, pp. 205-232. Ann Arbor: The University of Michigan, 1973.

Becker, G. "A Theory of Time Allocation." The Economic Journal, Sept., Vol. 75, 1965, pp. 492-517.

Bernalillo County Clerk. Albuquerque, New Mexico, 1983.

Bivens, Gordon. "The Grants Economy and Study of the American Family: A Possible Framework for Trans-Disciplinary Approaches." Home Economics Research Journal, Vol. 5, No. 2, 1976, pp. 24-25.

Bivens, G. and C. Volker. "Value Added in Household Food Preparation: A Preliminary Report of A Changed Approach to Valuing Household Production." Confronting Change: Dimensions, Diversity, Decisions; Proceedings from Western Regional Home Management-Family Economics Educators Conference. November, 1982.

Bixby, L.E. "Income of Persons Aged 65 and Over." Social Security Bulletin, April, 33, 1970, pp. 3-34.

Booth, C. Labor and Life of the People. London: Williams and Norgate, 1889.

Boulding, K., M. Pfaff, and J. Horvath. "Grants Economics: A Simple Introduction." The American Economist. Vol. 16, Spring, 1972: pp. 19-28.

Cicirelli, Victor G. Social Services and the Kin Network: Views of the Elderly. Journal of Home Economics. 1980, (Fall), 34-38.

Clark, A.B. and Warren, J. Economic Contributions Made to Newly Married Couples by Their Parents, Cornell University Agricultural Experiment Station Memoir 382: 1963.

Clarkson, K.W. "Welfare Benefits of the Food Stamp Program." Southern Economic Journal. Vol. 43, 1976, pp. 864-878.

Cooper, G. and A. Katz. The Cash Equivalent of In-Kind Income. Stanford, Connecticut: Cooper and Company, 1977.

Current Population Reports, Series p-60198: 1970, 1976.

Danziger, S. and R. Plotnick. "Demographic Change, Government Transfers, and Income Distribution." Monthly Labor Review, Vol. 100, No. 4, April, 1977, pp. 7-11.

Economic Report of the President together with the Annual Report of the Council of Economic Advisers. Washington, D.C., 1964.

Fischer, D.H. Growing Old in America. New York: Oxford, 1977.

"Fringe Benefits: More than Pay in U.S. Paychecks." Journal of American Insurance. Fall, 1977, pp. 15-19.

Fuch, V.R. "Redefining Poverty and Redistributing Income." The Public Interest, Summer, 1967, pp. 88-95.

Galbraith, J.K. The Affluent Society. Boston: Houghton-Mifflin, 1958.

Grad, S. and K. Foster. Income of the Population 65 and Older, 1976. Washington, D.C.: Social Security Administration, 1979.

Guthrie, Harold W. Statistical Methods in Economics. Homewood, Illinois: Richard D. Irwin, Inc., 1966.

Hamilton, D. A Primer on the Economics of Poverty. New York: Random House, 1968.

Hauser, P.M. "Aging and Worldwide Population Change." In R.H. Benstock and E. Sharas, Handbook of Aging and the Social Sciences. New York: Van Nostrand Reinhold, 1976.

Hill, R. Family Development in Three Generations. Cambridge, Mass.: Schenkman, 1970.

Hoinville, G., R. Jowell, and Associates. Survey Research Practices. London: Heinemann Educational Books, 1978.

Hicks, C.R. Fundamental Concept in the Design of Experiment. New York: Holt, Rinehart and Winston, 1973.

Johnson, E.S. and Williamson, J.B. Growing Old: The Social Problems of Aging. New York: Holt, Rinehart, and Winston, 1980.

Joint Economic Committee, Congress of the U.S.. "Welfare in the '70's: A National Study of Benefits Available in 100 Local Areas." Studies in Public Welfare, Paper No. 15, Washington, D.C., 1974.

Keyserling, L.H. Progress or Poverty. Washington, D.C.: Conference on Economic Progress, 1964.

Kyrk, Hazel. The Family in the American Economy. Chicago: The University of Chicago Press, 1953.

Moon, Marilyn. "The Economic Welfare of the Aged and Income Security Programs." Improving Measures of Economic Well-Being. pp. 88-110, New York: Academic Press, Inc., 1977.

Morgan, J.N. "Individual and Family Behavior: Economic Analysis and Public Policy." Proceedings of the 18th Annual Home Management-Family Economics Educators Conference, Tempe, Arizona, 1978, pp. 107-124.

Murphy, M. "The Measurement and Valuation of Non-market Economic Activities." Presented at AHEA Workshop, St. Charles, MO. June 22, 1979.

Murray, Janet. "Living Arrangements of People Aged 65 and Older: Findings from 1968 Survey of the Aged." Social Security Bulletin, XXXIV, (September 1971).

Nie, N.H. and others. SPSS: Statistical Package for the Social Sciences, 2nd ed., New York: McGraw-Hill Book Company, 1975.

O'Brien, John E. and Wagner, Donna L. Help Seeking by the Frail Elderly: Problems in Network Analysis. The Gerontologist. 1980, 20, (1), 78-83.

Olson, Geraldine. A Study of Community Provided Goods and Services Used by Families in Ithaca, New York and an Indication of Use by Various Demographic Characteristics. Masters Thesis: Cornell University, 1965.

Olson, G. "Discussion." Proceedings of the 18th Annual Home Management-Family Economics Educators Conference, Tempe, Arizona, 1978, pp. 125-127.

Ornatti, O. "The Poverty Band and the Count of the Poor." In Edward O. Budd (ed.), Inequality and Poverty, New York: Norton, 1967, p. 168.

Orshansky, M. "How Poverty is Measured." Monthly Labor Review. February 1969, pp. 37-41.

Paglin, M. Poverty and Transfers In-kind. Stanford: Hoover Institute, 1980.

Parsons, T. and Smelter, N.J. Economic and Society. Free Press: New York, 1956.

Pechman, J.A., Aaron, H.J., and Taussig, M.K. Social Security: Perspectives for Reform. Washington, D.C., The Brooklings Institute, 1968.

Perlman, R. The Economics of Poverty. New York: McGraw-Hill Book Company, 1976.

Rainwater, L. "Poverty, Living Standards, and Family Well-Being." U.S. Congress Joint Committee Sub-committee on Fiscal Policy. The Family Poverty and Welfare Programs: Government Policies, Dec. 1973, pp. 207-254.

Reid, M. Economics of Household Production. New York: J. Wiley Sons, Inc., 1934.

Reynolds, Morgan and Smolensky, E. Public Expenditures, Taxation, and the Distribution of Income. New York: Academic Press, 1977.

Riesman, D. and Rosebourgh, H. "Careers and Consumer Behavior." In N. Bell and E.F. Vogel, editor, A Model Into the Family, Free Press, 1960.

Ritter, L.S. and Silber, W.L. Principles of Money, Banking and Financial Markets. New York: Basic Books, 1977.

Rowntree, B.S. Poverty: A Study of Town Life. London: MacMillan, 1910.

Sanik, Margaret M. A Twofold Comparison of Time Spent in Household Work in Two-Parent, Two-Child Households: Urban New York State in 1967-68 and 1977. (Doctoral Dissertation, Cornell University) Ann Arbor, Michigan: University Microfilms International, 1979. No. 7910832.

Scholl, K.K. "Interfamily Economic Transfers." Unpublished Doctoral Dissertation, Purdue University, 1978.

Skolnick, A. and S. Dales. "Social Welfare Expenditures, 1950-75." Social Security Bulletin, January 1976, pp. 3-20.

Schultz, J.H. The Economics of Aging. 2nd edition, Belmont, California: Wadsworth Publishing Company, Inc., 1980.

Schultz, T.W. "Investments in Human Capital." American Economic Review, 51, 1961, pp. 1-17.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, 1956.

Sirageldin, Ismail Abdel-Hamid. Non-Market Components of National Income. Ann Arbor: The University of Michigan, 1969.

Smeeding, T. "The Antipoverty Effectiveness of In-Kind Transfers." Journal of Human Resources (Summer 1977): pp. 360-78.

Smeeding, T. "Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect On Poverty." Technical Paper 50, Washington, D.C.: Department of Commerce, Bureau of the Census, 1952.

Steiner, P. and R. Dorfman. The Economic Status of the Aged. Berkeley: University of California Press, 1957.

Survey Research Center. A Panel Study of Income Dynamics. Ann Arbor: The University of Michigan, 1972.

Taussig, M.K. Alternative Measures of the Distribution of Economic Welfare. Research Report Series #116. Princeton, New Jersey: Princeton University, 1973.

U.S. Department of Agriculture. "Cost of Food at Home." p. 22, Family Economics Review, Fall, 1979.

U.S. Congress, Congressional Budget Office. Poverty Status of Families Under Alternative Definitions of Income. Background paper No. 17, Washington, D.C.: U.S. Government Printing Office, June 1977.

U.S. Congress, Joint Economic Committee. "Efficiency and Equity Effects in the Benefits from the Federal Housing Program in 1965." By Eugene Smolensky and J. Douglas Gomery. In Benefit Cost Analysis of Federal Programs. Washington, D.C.: U.S. Government Printing Office, January 2, 1973.

U.S. Department of Labor, Bureau of Labor Statistics, Office of Prices and Living Conditions. Three Budgets for a Retired Couple in Urban Areas of the United States, Autumn, 1979. Washington, D.C.: U.S. Government Printing Office, 1980.

U.S. Department of the Treasury, Internal Revenue Service. "Tax Information on Depreciation." Publication 534. Washington, D.C.: U.S. Government Printing Office, 1979.

U.S. Senate, Special Committee on Aging. Developments in Aging: 1976. Washington, D.C.: U.S. Government Printing Office, 1977.

Walker, K.E. and Gauger, W. The Dollar Value of Household Work. Cornell University Agricultural Experiment Station Bulletin No. 60, 1973.

Walker, Kathryn E. and Woods, Margaret E. Time Use: A Measure of Household Production of Family Goods and Services. Washington, D.C.: Center for the Family of the American Home Economics Association, 1976.

Watts, Harold W. "Panel Suggests Changes in BLS Family Budget Program." pp. 3-10, Monthly Labor Review. December, Vol. 103, No. 12, 1980.

Watts, Harold and Skidmore, Felicity. "An Update of the Poverty Picture Plus A New Look at Relative Tax Burdens." Focus, Institute for Research on Poverty Newsletter, 2 (Fall, 1977): pp. 5-7, 10.

Weisbrod, Burton A. and Hansen, W. Lee. "An Income-Net Worth Approach to Measuring Economic Welfare." American Economic Review 58 (December, 1968): pp. 1315-29.

APPENDICES

APPENDIX A

Introductory Letter

THE UNIVERSITY OF NEW MEXICO | ALBUQUERQUE, NEW MEXICO 87131

HOME ECONOMICS DEPARTMENT
COLLEGE OF EDUCATION
March 7, 1980
277-2700
277-5360
277-4316

A research project is being conducted by the Home Economics Department within the College of Education at the University of New Mexico. The focus of the research is on the gifts received by families. We are interested in understanding more about resources available to families as well as comparing resources given to families at the different stages of the family life cycle.

Your help is needed for the completion of this project. Your name has been drawn by chance to represent families we need in the study. The information we are requesting deals with help families are receiving from family, friends, and neighbors. The information you give us will be used for the research and your family will not be identified in any way. In addition to providing valuable data to us, we hope that your participation will be beneficial to you as we work with you to determine some of the resources your family has available to them.

A member of the research team will contact you within the week to arrange a convenient time to talk with you. Please ask any questions you may have about your participation in this research at that time. The interview will take approximately one hour. We will be asking you questions about gifts your family has received from friends and family outside your household. You have the option of ending the interview at any time. We will thank you for your participation by giving you $5.00 for your personal use. We know that this does not measure the value of your contribution, but we want you to know we recognize and appreciate the time and effort you are giving.

We encourage your participation in this research study. Without the cooperation of New Mexico residents, the University of New Mexico would be unable to conduct much of its research for the benefit of all.

Sincerely,

Mary M. Smith
Co-Investigator
Department of Home Economics

Pamela N. Olson
Co-Investigator
Department of Home Economics

APPENDIX B

Research Instrument

NAME _____

ADDRESS _____

PHONE _____

INTERVIEW

DATE _____

TIME _____

DIRECTIONS

I have received $5.00 for participating in the study _____

Would like a copy of the results ☐

C O N S E N T F O R M

In order for us to use the information you give us, the University of New Mexico requires that you sign the following:

I understand that all information will be held in the strictest confidence. I understand that the participation in the study is voluntary and that I may stop the interview at any time. Upon completion of the interview I will receive $5.00 for my personal use. I hereby give permission to use the information given in this interview for research purposes only.

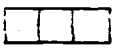
SIGNED _____

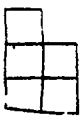
_____

Members of Household	Age	Ethnic Background	Education	Primary Occupation	Current Occupation
1.					
2.					
3.					
4.					
5.					
6.					

Other Children	Age	Marital Status	Number of Children	Distance Live From Children	Education/ Occupation
1.					
2.					
3.					
4.					
5.					
6.					
		S - single M - married		1 - walking 2 - under 25 miles 3 - 26-100 miles 4 - 101-500 miles 5 - over 500 miles	

Other Relatives Living in:	Albuquerque	Relationship	New Mexico	Relationship
1.				
2.				
3.				
4.				
5.				
6.				





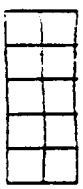
Are you a native New Mexican? YES NO

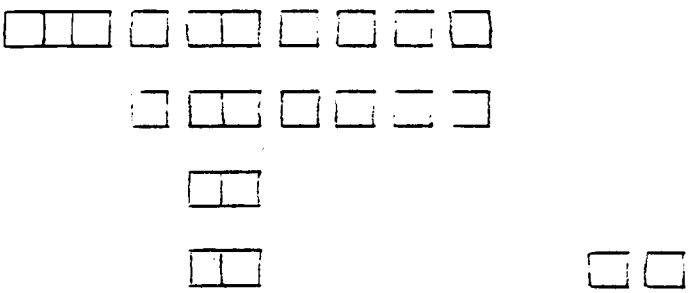
How long have you lived in New Mexico? _____

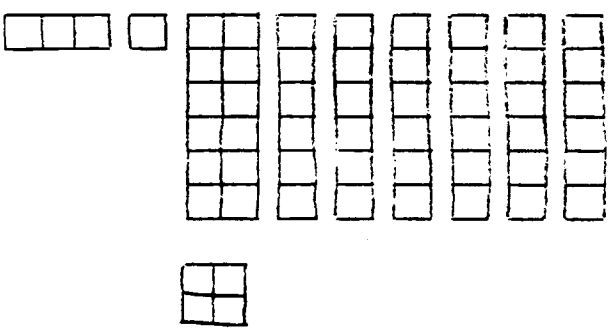
Why did you move to Albuquerque? _____

Have you or any member of your family experienced any of the following events during the past year?

Death	Accident
Retirement	Illness
Moving	Bankruptcy
Trip	Marriage
Divorce	Hospitalization







The following questions are to find out what gifts you have received from your families, friends, and neighbors during the past year.

GOODS

A. Household Equipment

1. Has anyone given you or your family any major appliances, such as a range, refrigerator, washing machine, dryer, heater, or sewing machine?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		

2. Has anyone given you or your family any small electrical appliances, such as, vacuum cleaner, mixer, toaster, iron, clock, or fry pan?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		

3. Has anyone given you or your family any small equipment, such as, an ironing board, can opener, pressure cooker, mop, or waste basket?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		

4. Has anyone given you or your family any furniture, such as, a couch, chair, rocker, stool, bed, kitchen table, TV, or stereo?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		

B. Has anyone given you or your family any furnishings, such as, draperies, curtains, rugs, linens, blankets, sheets, silver, china, TV trays, mirrors, pictures, or plants?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

C. Has anyone given you or your family housing by paying rent, providing a free apartment or house, giving you a down payment, or a mortgage payment?

	# of Times	FROM WHOM	DOLLAR VALUE
RENT/DEPOSIT			
FREE RENT			
DOWN PAYMENT			
HOUSE PAYMENT			

D. FOODS

1. In the past year, how many times have you or someone in your family eaten meals at someone else's home?

FAMILY MEMBER	HOW OFTEN	FROM WHOM

2. Have you been a guest of your family or friends at a restaurant during this past year?

HOW OFTEN	FAMILY MEMBER	FROM WHOM	DOLLAR VALUE/ PER PERSON

3. Has anyone given you or your family any food, such as, home-grown produce or meat, purchased food supplies or food they have prepared?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

E. Has anyone given you or your family any clothing?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		

F. Has anyone given you or your family a car, down payment for a car, or other items for a car?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

G. Has anyone given you or your family any tools or yard equipment, such as, power or carpenter tools, or barbecue grill?

WHAT	FROM WHOM	DOLLAR VALUE
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		

H. Are there any other goods that you have received this past year that have not been included?

WHAT	DOLLAR VALUE	HOW OFTEN	FROM WHOM
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

SERVICES - Part I

A. Use of Goods

1. Have you or a member of your household borrowed or used someone else's household equipment, subh as their washer, dryer, sewing machine or vacuum cleaner?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

2. Have you or a member of your household borrowed or used someone else's tools such as, a lawn mower, garden, power, or carpenter tools?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

SERVICES - Part I

A. Use of Goods

1. Have you or a member of your household borrowed or used someone else's household equipment, subh as their washer, dryer, sewing machine or vacuum cleaner?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

2. Have you or a member of your household borrowed or used someone else's tools such as, a lawn mower, garden, power, or carpenter tools?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

3. Have you or anyone in your family every borrowed a car?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

4. Have you or anyone in your family used or borrowed any other equipment belonging to some else?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME BORROWED
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

5. Has anyone provided storage space for your goods?

WHAT	FROM WHOM	LENGTH OF TIME BORROWED
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		

SERVICES - Part 2

A. Has anyone provided nursing care for you or your family, such as, preparing meals, giving medicine, picking up prescriptions, or other homemaking tasks?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

B. Has anyone provided homemaking help for you or your family, such as house cleaning, packing, moving, washing, ironing, sewing, or mending?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

C. Has anyone provided personal services, such as, haircuts, or permanents?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

D. Has anyone helped with home repairs, such as, yard work, carpentry, plumbing, painting, refinishing furniture, or electrical work?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

E. Has anyone helped with car repairs, such as, a tune up, change of oil, or washing your car?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

F. Has anyone provided lodging for you or a member of your family?

FAMILY MEMBER	HOW OFTEN	FROM WHOM	LENGTH OF TIME

G. Has anyone provided transportation for you or your family, such as, taking you to and from the doctor, shopping, church or meetings?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

H. What other services have you or your family received, such as, help in finding a job, co-signing for loans, making appointments for you, taking care of personal business, help in finding a house or car, pet care, or watering house plants?

WHAT	HOW OFTEN	FROM WHOM	LENGTH OF TIME
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

MONEY

A. Have you received gifts of cash for the purpose of savings?

DOLLAR AMOUNT	HOW OFTEN	FROM WHOM
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		

B. Have you or your family received gifts of cash for insurance premiums?

DOLLAR AMOUNT	HOW OFTEN	FROM WHOM
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		

C. Have you or your family received gifts of cash for living expenses, such as utilities or phone?

	DOLLAR AMOUNT	HOW OFTEN	FROM WHOM
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

D. Have you or your family received interest-free loans?

	DOLLAR AMOUNT	WHAT FOR	FROM WHOM	LENGTH OF TIME YOU HAD MONEY
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				
i.				
j.				

E. Have you or your family received gifts of cash for paying bills, installment loans, etc.?

	HOW OFTEN	DOLLAR AMOUNT	FROM WHOM
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

F. Have you or anyone in your family received gifts of cash for no specified purpose?

	DOLLAR AMOUNT	HOW OFTEN	FROM WHOM
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

G. Have you received any gifts of money substitutes, such as coupons, trading stamps, wholesale purchase, etc.?

WHAT	DOLLAR VALUE	HOW OFTEN	FROM WHOM
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

BENEFITS

Are you currently receiving any type of fringe benefit from your current or former place of employment? Such as, health insurance, rail or airline passes, or commissary privileges. If so, what?

ITEM	DOLLAR VALUE
a.	
b.	
c.	
d.	
e.	
f.	
g.	
h.	
i.	
j.	

If you own any of the below items, will you state the dollar value of that item as I read the item?

Item	Dollar Value
House	
Vaccuum Cleaner	
Washing Machine	
Dryer	
Sewing Machine	
Air Conditioner	
Heater	
Lawn Mower	
Range	
Dishwasher	
Refrigerator	
Freezer	
Car 1	
Car 2	
Car 3	

How close do you think your family is to:

	Intimate	close	not very close	never see
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

From which of the following categories did you receive money income during the past year?

_____ wages, salary
_____ interest on savings accounts or bonds
_____ inheritance
_____ rental income
_____ dividends
_____ social security or railroad retirement
_____ annuity, private pensions
_____ trusts
_____ alimony
_____ welfare payments or other public assistance
_____ unemployment compensation, disability payments
_____ government employee pensions
_____ other

Which category on this card represents the total income before taxes for your household in the past twelve months? _____

APPENDIX C

Money Income

Pre-Selected Income Ranges	Median
$ 0-999	$ 500
1000-1999	1500
2000-2999	2500
3000-3999	3500
4000-4999	4500
5000-5999	5500
6000-6999	6500
7000-7999	7500
8000-8999	8500
9000-9999	9500
10000-12499	11250
12500-14999	13750
15000-17499	16250
17500-19999	18750
20000-22499	21250
22500-24999	23750
25000-27499	26250
27500-29999	28750
30000-34999	32500
35000-39999	37500
40000-44999	42500
45000-59999	47500
Over 50000	50000

APPENDIX D

Results of Wage Survey

Occupation	Wage Rates as given by Employment Agencies		
	Public	Private 1	Private 2
Food Preparation	3.30	3.30	3.25
Care of Family Members	3.10	3.10	3.10
Housework	3.10	3.10	3.10
Clothing Care	3.10	3.10	3.10
Marketing and Management	3.30	3.40	3.50

The underlined Wage Rate was used in establishing the dollar value of services provided.

APPENDIX E

Dollar Value of Household Production

Activity	Family Type: Two Adults/ over 55; unemployed		One Adult/ over 55; unemployed		Two Adults/ One Child 1-2; unemployed		Two Adults/ Two Children 12-17; unemployed	
	(time)	Dollar Value	(time)	Dollar Value	(time)	Dollar Value	(time)	Dollar Value
Food Preparation	(2.5)	$8.25	(2.1)	$6.93	(2.8)	$9.24	(2.8)	$9.24
Care of Family Members	(.1)	.31	(0.0)	.00	(.5)	1.65	(.7)	2.17
Housework	(2.4)	7.44	(1.4)	4.34	(4.1)	12.71	(.6)	1.86
Clothing Care	(1.1)	3.41	(1.0)	3.10	(1.2)	3.72	(1.4)	4.34
Marketing and Management	(.9)	2.97	(.6)	1.98	(2.1)	6.95	(.5)	1.65
Daily Dollar Value		$22.38		$16.35		$34.27		$21.26
Annual Dollar Value		$8168.70		$5868.00		$12498.55		$7759.90

APPENDIX F

Durable Assets

Item	Purchased Price[1]	Upkeep	Salvage Value	Years of Estimated Life
House		1%[2]	Varied[1]	40[5]
Vacuum Cleaner			20[3]	14[6]
Washing Machine			80[3]	15[6]
Dryer			70[3]	19[6]
Sewing Machine			25[3]	50[6]
Air Conditioner			75[3]	11[6]
Heater			50[3]	33[6]
Lawn Mower			20[3]	19[6]
Range			65[3]	19[6]
Dishwasher			50[3]	16[6]
Refrigerator			75[3]	19[6]
Freezer			10[3]	11[6]
Car		$150/year[2]	Varied[4]	7[6]

[1]Given by participant.

[2]Jerome Cohen, Personal Finance. (Homewood, Illinois; Richard D. Irwin, Inc. 1979).

[3]Albuquerque Journal, Summer 1979.

[4]National Automobile Dealers Association, McLean, Virginia; 1979.

[5]U.S. Department of Treasury, Internal Revenue Service, "Tax Information on Depreciation," Publication 534. U.S. Government Printing Office, Washington, D.C., 1979.

[6]U.S. Department of Labor, Bureau of Labor Statistics, Office of Prices and Living Conditions, "Three Budgets for Retired Couples in Urban Areas of the United States," U.S. Government Printing Office, Washington, D.C., 1980.

APPENDIX G

Rental Prices for Service Grants

Items Borrowed	Store A	Store B	Store C
Household Equipment			
Washer (per load)	.35	.41	.25
Dryer (per load)	.20	.10	.20
Vacuum Cleaner (daily)	10.00	15.00	17.50
Fan (daily)	3.50	5.00	7.50
Tools (daily)			
Lawn Mower	15.00	17.50	20.00
Saw	10.00	15.00	12.00
Jack	7.50	8.00	10.00
Ladder	7.00	8.00	5.00
Drill	6.00	5.00	7.50
Car	8.00	15.00	12.00
Storage	15.00	15.00	15.00
Services Provided			
Nursing Care (daily)	25.00	25.00	30.00
Homemaking (hour rate)	3.10	3.10	3.10
Personal Services			
Man's Haircut (1)	4.50	8.00	5.00
Woman's Haircut (1)	8.00	15.00	12.00
Permanent (1)	25.00	30.00	35.00
Home Repairs (hour rate)	3.10	3.10	3.10
Car Repairs			
Tune-up (1)	15.50	25.00	27.50
Change of Oil (1)	6.50	12.00	15.00
Washing Car (1)	.50	1.00	2.50
Transportation	.35	5.00	7.50
Lodging			
Night	12.50	25.00	35.00
Week	52.00	56.00	310.00
Month	156.00	325.00	176.00
Other Services	3.10	3.10	3.10

The underlined Rental Price was used in establishing the dollar value of service grants.

APPENDIX H

Dollar Value of Community Provided Goods and Services

Income Class	Median	Government Expenditure %	Dollar Value
0-2000	1000	(315.7)	3157.00
2000-3000	2500	(173.7)	4342.50
3000-4000	3500	(118.4)	4144.00
4000-5000	4500	(85.5)	3747.50
5000-6000	5500	(60.9)	3349.50
6000-7000	6500	(48.4)	3146.00
7000-8000	7500	(41.0)	3075.00
8000-10000	9000	(35.8)	3322.00
10000-15000	12500	(29.4)	3675.00
15000-25000	20000	(22.7)	4540.00
over-25000	25000	(17.2)	4300.00

APPENDIX I

Formulas for Money and Nonmoney Incomes

Family economic well-being = Money and Nonmoney incomes

Money = wages + interest + inheritance + rental income + dividents + social security + annuity + trusts + alimony + welfare payments + unemployment compensation + government employee pensions + other

Nonmoney = fringe benefits + household production + consumer durables + interfamily grants + community provided goods and services

Fringe benefits = $FB_1 + FB_2 + \ldots + FB_n$

Household production = $(T_{fp} \times W_{fp}) + (T_{fc} \times W_{fc}) + (T_{hw} \times W_{hw}) + (T_{cc} \times W_{cc}) + (T_m \times W_m)$

where:

T is time spent in the activity

W is the current market wage rate paid for the activity

fp is food preparation

fc is family care

hw is housework

cc is clothing care

m is management

Durable assets = $\frac{(P.P. + UPK - S.V.)}{YEARS\ OF\ USEFUL\ LIFE_1} + \ldots + \frac{(P.P. + UPK - S.V.)}{YEARS\ OF\ USEFUL\ LIFE_n} \times .06$

where:

P.P. is purchase price

UPK is the upkeep costs

S.V. is the salvage value

YEARS OF USEFUL LIFE is the years of useful life

Interfamily grants = goods + services + money

where:

goods is the goods received from interfamily grants

services is the services received from interfamily grants

money is the money received from interfamily grants

$$goods = (g_1 + g_2 + \ldots + g_n) + g_{meals}$$

where:

g is the price of each individual good

g_{meals} is the price of the meal eaten at another person's house

$$g_{meals} = (m_1 \times n_1^f) + \ldots + (m_n \times n_n^f)$$

where:

m is the cost of the meal per person

n^f is the number in the family who ate the meal

$$services = (BI + SP)$$

where:

BI is the borrowed items

SP is the services provided

$$BI = (RP_1 \times T_1) + \ldots + (RP_n \times T_n)$$

where:

RP is the rental price for the item

$$SP = (T_{sp_1} \times W_{sp_1}) + \ldots + (T_{sp_n} \times W_{sp_n})$$

where:

sp is the service provided

$$money = (m_1 + m_2 + \ldots + m_n) + m_{\%}$$

where:

m is the money grants

$$m_{\%} = (\$)\ (.12)$$

where:

$m_{\%}$ is a interest free loan

$ is the amount of the interest free loan

Community provided goods and services = (Money) ($\%_y$)

where:

$\%_y$ is the percentage of income received from government services