

NNATURAL RESOURCE CONSERVATION: CLOTHING

BY

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CHAPTER I

INTRODUCTION

The 1973-74 oil embargo was among the first warning signs to the American public that incorporation of energy and natural resource conservation practices would become a part of the family lifestyle. "With only 6 percent of the world's population, the United States consumes 30 percent of the world's energy" (Perlman and Warren, 1977, p. 4). Natural resources are not inexhaustible and developing countries can not be depended upon to supply the United States with enough petroleum to maintain the present requirements.

Energy prices have been rising steadily since May of 1969, even before the 1973-74 energy crisis.

Between May, 1969 and May, 1974, consumer prices for each of the fuels (electricity, natural gas, fuel oil, and gasoline) increased more than any other major item in the Consumer Price Index, except food. The increases were 40 percent for gasoline and a whopping 100 percent for fuel oil (Newman and Day, 1975, pp. 112-113).

These prices continue to rise as the cost of finding natural resources and making them available becomes more and more difficult.

Conservation of natural resources is becoming a part of the day to day lifestyle. Apparel is one area which involves natural resource conservation. When conservative buying habits are employed and clothing is utilized as an insulator, natural resources can be conserved.

Attention has been focused on the textile industry.

. . . the one percent of oil and natural gas used by the man-made fiber industry provides 75 percent of the nation's fiber supply, which creates jobs for more than two million Americans, contributes to the gross national product, and produces textile products which are highly energy efficient. . . . From its one percent of oil and gas, man-made fibers currently provide 75 percent of all fibers used in domestic textile mills for apparel, home furnishings and industrial products (Man-Made Fiber Producers Association, 1979, pp. 1, 4).

It has been suggested by the Federal Energy Office that consumption of petroleum based fabrics can be reduced when natural fibers are purchased (Douglas and Mohamed, 1978). The land requirements for producing cotton and wool would forestall the replacement of man-made fibers. According to the Man-Made Fiber Producers Association (1979), the replacement of man-made fibers with cotton and wool would require 20 million additional acres of cotton land and a billion acres of grazing land for wool (all the agricultural land in the United States). This is not an economical approach to the problem.

The textile and apparel manufacturers continue their search for methods of production that will consume less energy. These methods are expensive. Eventually, consumers are going to feel the effect of these costs by paying higher prices for clothing.

Clothing and shoes comprise only 6.6 percent of personal consumption expenditures during the first three quarters of 1978. These items, however, are purchased frequently by individuals and require a reasonable amount of care (Polyzou, 1979, p. 3).

The average expenditure per person for clothing and shoes in the first three quarters of 1978 was \$398, as compared to \$376 in the first three quarters of 1977 (Polyzou, 1979).

Little research has been reported concerning clothing and natural resource conservation. More investigation is needed regarding consumer awareness of the role of clothing as an insulator, consumer clothing practices employed in the home and the use of fibers and fabric in the conservation of natural resources.

Purpose and Objectives

The purpose of the study was to determine the awareness and satisfaction of selected Oklahoma families to the conservation of natural resources with respect to clothing. The specific objectives are:

1. To assess families' awareness of natural resource conservation with respect to clothing and selected socio-economic variables.
2. To assess the differences between the awareness of conservation of natural resources concerning clothing and the satisfaction with clothing practices and preferences.
3. To make recommendations for further research.

Hypotheses

Hypotheses in the null form indicate "that no relationship exists between variables concerned" (Compton and Hall, 1972, p. 47). The null form is utilized in the study. The following hypotheses were tested:

- H_1 : There is no significant difference in the degree of awareness of natural resource conservation practices and preferences with respect to clothing and selected socio-economic variables.

H₂: There is no significant association between the awareness of conservation of natural resources concerning clothing and satisfaction with clothing practices and preferences.

Assumptions

Certain facts are assumed during the course of the study.

1. "An apparel textile may be viewed as an extension of a person's bodily heat mechanism, helping him to attain some degree of equilibrium in a changing environment" (Compton and Hall, 1972, p. 30).
2. Natural resources can be conserved through the utilization of clothing in maintaining body heat.

Limitations

The control of certain factors has not been possible in this study. These limitations are incorporated into the study.

1. The data provided by the respondents will refer to individual and family clothing practices as they perceive them.
2. The sample selected for the study is limited to the state of Oklahoma.

Definitions

Certain definitions are used throughout the study. These definitions are as follows:

Awareness - A situation, phenomenon, object, or state of affairs is noted. It is the lowest level of the affective domain (Krathwohl, Bloom, and Masia, 1956, p. 99).

Conservation Practices - Efficient utilization and avoidance of waste in natural resource application (Landsberg, Schanz, Schurr, and Thompson, 1974, p. 138).

Family - A set of mutually interdependent organisms, intimate, transacting, and interrelated persons who share some goals, resources, and a commitment to one another that extends over time (Paolucci, Hall, and Axinn, 1977, p. 18). For the purposes of this study an individual is considered a family.

Natural Resources - The arrangement of matter to which man can apply his activities (technology) to increase his net welfare. They are neither wholly of the physical world of man but are the result of the interaction between the two (Department of Economic and Social Affairs, 1973, p. 369).

CHAPTER II

REVIEW OF LITERATURE

The purpose of the chapter is to review the literature related to the study. The chapter is divided into these topics: Energy; Water; The Role of Clothing to Maintain Body Heat; Clothing Consumption; and, The Awareness of the Need to Conserve Natural Resources.

Energy

Energy resources have been of primary concern since the oil embargo of 1973. Recent events have emphasized a national imbalance between the demand and production of energy. Energy resources estimated at 42.1 billion have been imported into the United States during 1978 (Energy Use, 1979). The United States is dependent on foreign sources for energy products to fuel utilities, industries, businesses, and homes.

Decreasing energy consumption through conservation practices is one remedy to the energy dilemma. Reduction of the use of energy derived from fossil fuels has been encouraged by federal and state legislation (National Energy Act, 1978; Nigh, 1979).

The private household has great potential for energy conservation efforts.

Energy use in the home accounts for approximately 20 percent of our total energy use, and of that amount, about 60 percent is used for heating and cooling. Residential energy use grew about twice as fast as the number of

households between 1950 and 1970, reflecting the increase in use within each household (Peterson and DeSimone, 1979, pp. III-3).

Families control the amount of energy used in the home. Thus, the private household has been the focus of many energy conservation programs.

Water

In 1977, drought conditions in areas of the United States created concern. The uses and availability of water have received much attention. Uneven distribution of water, not the quantity of water, has been cited as an important problem (Sasnett, 1977; Van Dam, 1977; Sibley, 1977). Some areas are over populated for the amount of water resources available.

One of the most prevalent water problems arises from the fact that the heaviest consumption is taking place in those areas that can least afford it: over 70 percent occurs in those parts of the country getting only 30 percent of surface water supply (Sasnett, 1977, p. 2).

Water quality is a major problem throughout the world (Van Dam, 1977). Major rivers in the United States have been found to contain an increased amount of harmful chemicals. Overuse of water has seriously diminished the quality of water (Sibley, 1977).

Role of Clothing to Maintain Body Heat

Clothing is needed to protect and insulate the body in extreme temperatures. Clothing modifies and interacts with the heat regulating function of the body. The physical properties of fabrics and clothing affect the amount of protection received by the body. The greatest protection, however, is derived from conscious choice of

kind and amount of clothing and the mode of wearing, especially the consideration of openings and closures (Fourt and Hollies, 1970).

The normal temperature for the human body is considered to be 98.6°F or 36°C; however, this temperature is not consistent throughout the body. Only deep central areas of the body, such as the brain and heart, are kept at this controlled temperature. Heat is drawn from other parts of the body, first the appendages, then the trunk of the body. The head is the main outlet for the heat loss, when the rest of the body is covered. To obtain maximum insulation for the body, the head should be covered during extremely cold temperatures.

Bazett (1949) indicated that a balance between heat production and heat loss is a part of thermal regulation. Heat is generated through the use of food. Food serves as fuel for the body, just as gas serves as fuel for a car. When analyzing the thermal regulation of the body, both heat transfer and heat production must be considered; but as clothing is essentially affected by heat transfer, it is this aspect that is considered here (Forbes, 1949).

Heat is transferred to and from the skin through radiation, convection, conduction, or evaporation. "Radiation is a transfer of heat or energy from a hot object to a cool one by means of electromagnetic waves" (Horn, 1975, p. 297). Radiative heat can flow from the body or from the environment to the body. More heat flows from exposed areas than from covered areas. Heat is absorbed from the environment through sources such as the sun or heaters. The amount of heat absorbed is dependent upon the degree of radiant heat emitted from the body. White skin reflects more radiation than dark skin.

Another method of heat loss or transfer is conduction. Forbes (1949) described conduction as:

. . . the molecular motion which constitutes the heat is spread by motion and impact; that is, a fast moving molecule strikes another which is moving more slowly; it then transfers some of its energy to the molecule which is struck (p. 320).

Low specific heat and high conductivity are contributing factors to the speed in which heat spreads through a substance. Still air and substances containing still air transfer heat very slowly.

Convection ". . . is the movement of large masses forming currents which constantly remove the heated molecules and replace them by cold molecules or vice versa" (Forbes, 1949, p. 320). The size of the current influences the rate of heat transmitted. Walking, running, or standing can cause heat loss by convection.

Evaporation is a primary method of disposing of body heat. Perspiration is a means by which the body dissipates heat. "Liquid sweat is transformed into water vapor at the skin surface and passes into the environment to cool" (Horn, 1968, p. 296). Evaporation is an efficient method of disposing of body heat.

The clo value is a method of measuring the insulation value of a garment.

Clo is the unit of insulation necessary to maintain a mean skin temperature of 92°F in a room of 70°F with air movement not over 10 feet per minute, humidity not over 50% with metabolism of 50 calories per square meter per hour [seated quietly] (Schlukebier, 1977, p. 4).

The greater the clo value the greater the insulation of the clothing.

Fabric texture influences the thermal value of clothing. There are fewer fibers to heat in fabrics with fuzzy textures, because fewer fibers are touching the body. There is more fiber contact

with the skin in a smooth surface; therefore, more heat is needed to provide adequate comfort.

The thermal value of the garment is dependent upon the amount of air that can be trapped within the layers of the garment. By layering garments more air is entrapped; therefore, the thermal sensations are greater. The thicker the fabric, the less chance air will penetrate through the garment to the body. The value of added layers decreases as the bulk begins to hamper activities. The insulation value declines when adding more than four to five garments. Fiber properties and fabric construction affect the insulation value of a garment. The fuzzy texture of wool fibers provides excellent insulation for the body. Acrylic, modacrylic, nylon, and polyester fibers are considered warm by the Man-Made Fiber Producers Association (1977). Construction techniques such as double knit thermal constructions, thermal weaves, doublefaced fabrications, and fleeced surfaces provide warmth and insulation for the body (Douglas and Mohamed, 1978).

The design and fit of a garment influences the insulative properties. Garments designed to fit at the ankles, wrist, and waist prevent warm air from escaping from the body surface. Loose fitting garments allow the air to circulate, therefore cooling the body surface (Schluckebier, 1977).

Clothing Consumption

The rising price of energy and the concern about the supply of energy have caused all areas of the clothing industry to concentrate their efforts in utilizing natural resources to the best advantage. The textile industry is no exception.

Because the man-made fibers are derived from petroleum, one might expect that a switch from man-made to cotton would conserve energy. In the maintenance and production of cotton, electricity, fuel, fertilizer, and chemicals, which include pesticides and herbicides, are used. While cotton does not require as much energy to produce as do the man-made fibers, the energy used in maintaining cotton fabrics is much greater than for fabrics made from man-made fibers (van Wrinkle, Edeleanu, Prosser, and Walker, 1978).

The use of man-made fibers has steadily increased, while the consumption of natural fibers has declined. Currently one percent of oil and natural gas provided 75 percent of all fibers produced in domestic textile mills, while cotton accounts for 24 percent and wool one percent (Man-Made Fiber Producers Association, Inc., 1979).

The total fiber consumption has been steadily increasing in the United States.

Per capita consumption of fibers has risen from 20 pounds in 1960 to 56 pounds in 1975 and is predicted to reach 60 pounds by 1980.

. . . The high per capita consumption of fibers (predicted to be higher every year) indicates the real responsibility of the textile consumer in making informed decisions when buying textile products and the need for changing habits of textile product consumption as a means of reducing energy usage (Douglas and Mohamed, 1978, p. 128).

Natural resources can be conserved through the limitation and control of clothing consumption of family members. The process of clothing consumption as discussed here encompasses ". . . the whole process of acquiring, storing, using, maintaining, and discarding clothing" (Winakor, 1969, p. 629).

Individuals acquire garments, either for inventory or for temporary use. Inventory is the stock of garments that an individual

possesses at a given time (Winakor, 1969). The garment may have been purchased new, or it may have been worn previously. A garment might be considered an investment purchase if quality material that will last more than a year is considered (Douglas and Mohamed, 1978).

Clothing is acquired through many different sources, such as purchases, home construction, handing down, making over, exchange for other clothing, inheritance, pay or bonus, and premiums (Winakor, 1969). Consumption of clothing or natural resources can be reduced by reusing clothing obtained through such sources as handing down, making over, exchanging for other clothing, and inheritance. When previously worn clothing can be obtained, natural resources will not be expended toward the creation of new clothing. The energy used in the production of fabrics can be reduced, as well as other natural resources consumed in the manufacturing of man-made and natural fibers.

Selection of garments that serve a dual purpose, thus reducing the inventory, can conserve natural resources. Only garments that are worn regularly are considered inventory. Polyzou (1979) indicates that energy might also be conserved when energy necessary for garment maintenance is considered. Natural resources are expended during the laundry process in the form of water, energy, detergents, dry cleaning fluids, etc.

Individuals discard clothing when no further wear is anticipated (Winakor, 1969). When the physical condition is not the reason for discarding, consideration can be given to recycling the garment to be worn again. In this way, conservation of natural resources through clothing conservation can be maintained.

Awareness of the Need to Conserve Natural Resources

A shortage of natural resources has caused families and individuals to be more aware of the need to incorporate conservation practices as a way of life. Such changes in lifestyle may involve the way a meal is cooked, the temperature of the home, and the amount and kind of clothing purchased (Douglas and Mohamed, 1978). Lowering the thermostat in public buildings to 65°F in winter may change clothing habits. Families and individuals may realize the advantage of utilizing clothing to maintain body comfort. "Wearing apparel that helps maintain the body at a comfortable temperature is an important selection factor" (Douglas and Mohamed, 1978, p. 127).

Residents of 17 Texas counties participated in a clothing and energy project sponsored by the Texas Cooperative Extension Service. "With the assistance of their County Extension Agents, these families lowered home temperatures and adjusted clothing habits to stay comfortable" (Culp, 1979, p. 1). The project took place for seven weeks during the winter months.

Clothing habits have been adjusted to maintain body comfort at the lower temperature levels. Many people have reported that several garments have been added to their daily clothing and that they have been wearing shoes, socks, scarves, and pantyhose.

A recent article, "How Warm Is That Coat?" (1978) suggested that a consumer may one day be able to tell the warmth of a coat by simply examining the label. Although it is difficult to say exactly how warm a garment will be because of the thickness of the insulation, air

permeability, closeness of fit, air temperature, wind velocity, amount of motion inside the garment, and other items, a warmth index consisting of numerical value is being considered. This will enable consumers to make intelligent decisions in purchasing warm clothing.

Summary

Clothing is an important factor in the conservation of natural resources. A comfortable body temperature can be maintained by adding and taking off layers of clothing, thereby consuming less natural resources. Limitation and control of clothing consumption can also reduce the over use of natural resources. Families need to be aware of these methods of reducing natural resource consumption.

CHAPTER III

RESEARCH PROCEDURES

The purpose of the chapter is to describe the methods and procedures used in conducting the study. The procedures are discussed under the following topics: Type of Research Design; Population and Sample; Instrumentation; Collection of Data; and Analysis of Data.

Type of Research Design

The study was based on information obtained from a larger research project entitled The Impact of Family Decisions Upon Conservation of Natural Resources (Gorman, Matern, Williams, Lauener, Siddens, and Williams, 1980). The project was sponsored by the Family Study Center within the Division of Home Economics at Oklahoma State University. Specific questions from the instrument used in the larger project which related to the conservation of natural resources and clothing were analyzed in the study.

The purpose of the study was to determine the awareness of the need to conserve natural resources with respect to clothing. This was descriptive research utilizing the survey method of data collection. Current clothing conservation practices were obtained through a survey of the literature.

Population and Sample

To draw a representative sample from the state of Oklahoma a

stratified random sample technique was used. "In stratified (or representative) sampling, the population is divided into subpopulations, called strata and a sample random sample is selected within each strata" (Compton and Hall, 1972, p. 194). Oklahoma was stratified according to urban and rural counties and by geographic area. The urban and rural counties were adopted according to the definition used in the 1970 census.

. . . the urban population comprises all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. More specifically, the urban population consists of all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, villages, boroughs (except in Alaska), and towns (except in the New England states, New York, and Wisconsin), but excluding those persons living in the rural portions of extending cities; (b) unincorporated places of 2,500 inhabitants or more; and (c) other territory, incorporated or unincorporated, included as urbanized areas. The population not classified as urban constitutes the rural population (U.S. Department of Commerce, 1973, pp. App. 1-2).

The population was then stratified by geographic area. The state was divided into four geographic areas as used in the 1970 Census of Population to insure equal representation (Figure 1).

The stratification model (Table I) illustrates the division of rural and urban areas into geographic areas incorporated in the sample. The urban sample was drawn from two areas having a high urban population, Tulsa metropolitan area, and Oklahoma City metropolitan area.

The rural sample was drawn from those counties having a low urban population. The rural sample was determined by randomly selecting two counties from each of the four geographic areas of Oklahoma. The eight counties were Adair, Cimarron, Delaware, Dewey, Haskell, Jefferson, Latimer, and Roger Mills (Table I).

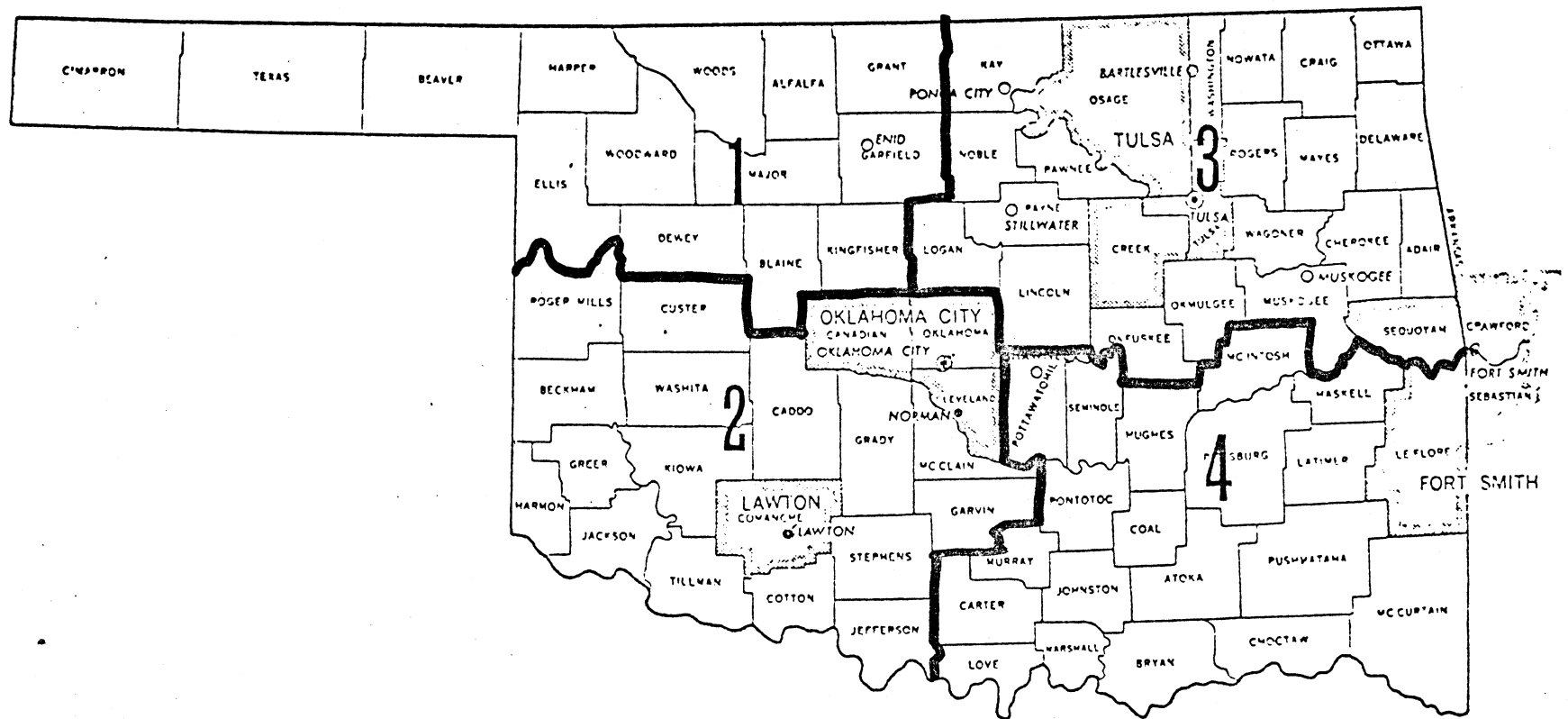


Figure 1. Geographic Areas of Oklahoma

TABLE I
 COUNTIES AND AREAS OF OKLAHOMA FROM
 WHICH THE SAMPLE WAS DRAWN

Location	Population	Number	Total
Tulsa Metropolitan Area	Urban	600	
Oklahoma City Metropolitan Area	Urban	600	
Total Urban Sample			1,200

Cimarron County	Rural	300	
Dewey County			
Jefferson County	Rural	300	
Roger Mills County			
Adair County	Rural	300	
Delaware County			
Latimer County	Rural	300	
Haskell County			
Total Rural Sample			

Total Sample of Study			2,400

A simple random selection was used to draw a sample of 2,400 households from the selected counties. Using the directories obtained from the telephone companies, a computerized system of random selection was developed to determine the sample. A random table selected by the computer was used to draw a sample from selected telephone directories. The random table of numbers corresponding to page, column, and line number in the telephone directory was used to draw the sample, disregarding commercial or community services and governmental agencies. All names and addresses other than those from towns

included in the study were rejected. A total of 2,400 participants was randomly selected according to the above procedures.

Instrumentation

Members of the Family Study Center Research Team I developed the instrument in order to gather data used in the project. The instrument was devised after reviewing instruments from studies using similar methodology.

The developed instrument was submitted to qualified professional persons for revisions and clarification. Pilot tests were conducted to determine the reliability of the instrument.

Those items in the instrument for the larger study which dealt with clothing and the conservation of natural resources were analyzed separately for the study. These items and items used to obtain demographic data from the participants will be referred to as the Clothing Questionnaire.

Closed and open end questions were used to obtain socio-economic information from the respondents. Questions concerning age and job title were open end. The responses were then taken as given and categorized according to the U.S. Census Socioeconomic Status Score (Miller, 1977). A Likert type scale was utilized to collect the data concerning the awareness of the need to conserve natural resources regarding clothing, and the level of satisfaction with clothing conservation practices and preferences. In statements referring to awareness, the respondents were to check agree, neutral, or disagree. In statements regarding clothing practices and preferences, the

respondents were asked to indicate their level of satisfaction by checking very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied.

Collection of Data

District and county extension home economists and agricultural personnel were sent copies of the instrument, and their assistance was requested for those participants who may have encountered difficulty in completing the instrument (Appendix A). The respondents were instructed in the cover letter (Appendix B) to request assistance from the home economist and agricultural agent in their county in completing the instrument, if needed. News articles were also sent to local newspapers in the geographical areas in which the respondents lived.

Twenty-four hundred instruments, a cover letter explaining the goals of the study, and a bumper sticker (Appendix C), given as a reward for completing the instrument, were mailed at a bulk rate on March 28, 1980. A form requesting the results of the study (Appendix D) and a self-addressed, stamped envelope were included. The respondents were given 23 days in which to respond. During this period the names of 10 potential respondents were randomly selected for contact by telephone in order to encourage them to complete and return the instrument. One hundred seventy-eight responses (7.4%) were received after the initial mailing of the instrument. A postcard (Appendix E) was sent to those participants who had not responded at the end of the 23 day period, asking them to complete and return the

instrument. One hundred forty-four (6%) were received after the reminder postcards were sent. Twenty-four hundred instruments were distributed; 322 were returned, and of those 304 (12.7%) were used in the study. Eighteen incomplete instruments were deleted. Data from the 304 instruments were analyzed on May 20, 1980.

Analysis of Data

The data were punched on cards for computer analysis and then tabulated to obtain percentages and frequencies. Chi square and multiple analysis of variance were applied to determine whether significant differences and associations existed. Chi square was implemented to assess the relationship between the awareness of the need to conserve natural resources related to clothing and clothing practices and preferences. "The chi square technique was used for summarizing the differences in distribution found between two or more sample groups in a counting experiment" (Compton and Hall, 1972, p. 353). Independence between random samples was assumed in order to use the chi square test (Blalock, 1972).

The multiple analysis of variance was implemented to assess the awareness of the need to conserve natural resources concerning clothing and selected socio-economic variables. This procedure was utilized to "determine differences between the population and factors which produced these differences" (Mueller, Schuessler, and Costner, 1977, p. 455). Random sampling, normal population, and equal variances were assumed (Mueller et al., 1977).

CHAPTER IV

ANALYSIS OF THE DATA

The purpose of the study was to determine the awareness and satisfaction of selected Oklahoma families to the conservation of natural resources with respect to clothing. The analysis of the data is presented in this chapter.

Demographic Data

The survey sample consisted of 304 instruments which represented the four geographic districts within Oklahoma (Table II). The Oklahoma City metropolitan area was included in the Southwest district of the state and the Tulsa metropolitan area was included in the Northeast district, thus creating a larger percentage of representation for those two districts. However, representation was almost evenly divided between rural (55%) and urban (45%) areas of the state.

Information was obtained concerning the head and the second adult of the household. The sex of the head of household was most frequently male (81.9%), while the second adult was generally female (96%) (Table III). The range in age for the head of the household was distributed almost equally among four of the six categories, 30 to 75 years of age. The range in age for the second adult, represented in the study, indicated a substantial number of persons (26.5%) between 30 and 39 years of age.

TABLE II
 GEOGRAPHIC AREAS OF OKLAHOMA REPRESENTED
 IN THE STUDY
 (N=304)

Geographic Areas	Numbers	Percentages
District of State		
Northwest	53	17.4
Southwest	116	38.2
Northeast	96	31.6
Southeast	<u>39</u>	<u>12.8</u>
Total	304	100.0
Cities and Counties		
Oklahoma City	73	24.0
Tulsa	67	22.0
Adair County	14	4.6
Cimarron County	26	8.6
Delaware County	15	4.9
Dewey County	27	8.9
Haskell County	14	4.6
Jefferson County	22	7.2
Latimer County	25	8.2
Roger Mills	<u>21</u>	<u>7.0</u>
Total	304	100.0
Location		
Urban	138	45.3
Rural	<u>166</u>	<u>54.6</u>
Total	304	99.9 ^a

^aDoes not equal 100% due to round off error.

TABLE III
DEMOGRAPHIC INFORMATION OF PARTICIPANTS

Characteristics	Numbers	Percentage
<u>Sex</u>		
Head of Household		
Male	249	81.9
Female	55	18.1
Total	<u>304</u>	<u>100.0</u>
Second Adult		
Male	8	3.3
Female	237	96.7
Total	<u>245^a</u>	<u>100.0</u>
<u>Age</u>		
Head of Household		
18-29	36	11.8
30-39	58	19.1
40-49	61	20.1
50-61	69	22.7
62-75	60	19.7
76-older	20	6.6
Total	<u>304</u>	<u>100.0</u>
Second Adult		
Younger than 20	2	.8
20-29	36	14.7
30-39	65	26.5
40-49	45	18.4
50-59	50	20.4
60-69	29	11.8
70-79	15	6.1
80-89	2	.8
Total	<u>244^a</u>	<u>99.5^b</u>
<u>Educational Levels</u>		
Head of Household		
No formal education	1	.3
Eight years or less	32	10.6
Some high school	38	12.5
High school graduate	60	19.8
High school plus some college or technical school	93	30.7
College graduate	79	26.1
Total	<u>303^a</u>	<u>100.0</u>

TABLE III (Continued)

Characteristics	Numbers	Percentage
<u>Educational Levels (Cont.)</u>		
Second Adult		
No formal education	1	.4
Eight years or less	17	6.9
Some high school	25	10.1
High school graduate	75	30.5
High school plus some college or technical school	77	31.3
College graduate	51	20.7
Total	246 ^a	99.9 ^b
<u>Employment Status</u>		
Head of Household		
Employed full-time	200	66.2
Employed part-time	17	5.6
Not employed	12	4.0
Retired (part-time employed)	12	4.0
Retired	61	20.2
Total	302 ^a	100.0
Second Adult		
Employed full-time	87	35.5
Employed part-time	35	14.3
Not employed	81	33.1
Retired (part-time employed)	4	1.6
Retired	38	15.5
Total	245 ^a	100.0
<u>Current Job Title</u>		
Head of Household		
Professional technical and kindred workers	51	23.0
Managers, officials and proprietors except farming	34	15.3
Clerical and kindred workers	16	7.2
Sales workers	15	6.8
Craftsmen, foremen and kindred workers	26	11.7
Operatives and kindred workers	17	7.7
Private household workers	2	.9
Service workers except private house- holds	12	5.4
Laborers except farming and mining	19	8.6
Homemakers	4	1.8
Farmers	26	11.7
Total	222 ^a	100.1 ^b

TABLE III (Continued)

Characteristics	Numbers	Percentage
<u>Current Job Title (Cont.)</u>		
<u>Second Adult</u>		
Professional technical and kindred workers	20	9.9
Managers, officials and proprietors except farming	10	5.0
Clerical and kindred workers	46	22.8
Sales workers	6	3.0
Craftsmen, foreman and kindred workers	1	0.5
Operatives and kindred workers	0	0.0
Private household workers	1	0.5
Service workers except private households	20	9.9
Laborers except farming and mining	10	5.0
Homemakers	82	40.6
Farmers	6	3.0
	<u>202^a</u>	<u>97.7^b</u>
<u>Household Income</u>		
Less than \$5000	28	9.4
\$5000 to \$9999	42	14.0
\$10,000 to \$14,999	46	15.4
\$15,000 to \$19,999	53	17.7
\$20,000 to \$29,999	56	18.7
\$30,000 to \$39,999	35	11.7
\$40,000 to \$49,999	15	5.0
\$50,000 or more	17	5.7
I don't know	7	2.3
Total	<u>299^a</u>	<u>99.9^b</u>
<u>Ethnic Background of Head</u>		
American Indian	16	5.3
Asian or Pacific Islander	0	0.0
Black	5	1.6
Spanish or Mexican heritage	2	0.7
White (other than Spanish heritage)	276	91.1
Other	4	1.3
Total	<u>303^a</u>	<u>100.0</u>
<u>Total Children</u>		
0-5 years	57	19.2
6-9 years	54	18.2
10-12 years	45	15.2
13-18 years	82	27.6
19-20 years	59	19.9
Total	<u>297^a</u>	<u>100.1^b</u>

TABLE III (Continued)

Characteristics	Numbers	Percentage
<u>Family Life Cycle</u>		
Young single	9	3.0
Young married/no children	14	4.6
Married/children (0-5 years)	18	6.0
Married/children (6-9 years)	23	7.6
Married/preadolescents (10-12 years)	19	6.3
Married/adolescents (13-18 years)	41	13.6
Parents/young adult (19-20 years)	39	12.9
Middle aged/no children (35-64 years)	83	27.5
Older adults (65 and over)	56	18.5
Total	283 ^a	100.0

^aQuestionnaire not completed.

^bDoes not always equal 100% due to round off error.

The educational level indicated by the respondents in the study was generally high (Table III). Approximately half of the heads of households indicated high school plus some college or technical school experience (30.7%) or were college graduates (26.1%). The second adult in the household had a slightly lower level of education, nearly two-thirds were high school graduates (30.5%), or had high school plus some college or technical school (31.3%). College graduates (20.7%) were also represented.

The majority (66.2%) of the heads of households were employed full-time (Table III). Job titles or the given occupation were categorized as listed in the U.S. Census Socioeconomic Status Score (Miller, 1977), with the addition of two categories entitled home-makers and farmers or ranchers. The current job titles under which

the occupations for the head of household fell were: professional, technical, and kindred workers (23.0%); managers, officials, and proprietors, except farmers (15.3%); and craftsmen, foremen, and kindred workers (11.7%); and farmers (11.7%). Approximately one-third (35.5%) of the second adults of the household held full-time positions, and another third (33.1%) were not employed. Nearly one-half (40.6%) of the second adults considered themselves as homemakers. Clerical and kindred workers (22.8%) made up the next largest representation for job title.

The total income of the family ranged from less than \$5,000 to \$50,000 or more (Table III). The most frequently reported incomes were between \$15,000 and \$29,999 (17.7% and 18.7%).

The ethnic background of the head of household as reported by the respondents was overwhelmingly white other than Spanish heritage (91.1%). American Indian (5.3%) was reported, as were other minority ethnic backgrounds.

The number of children belonging to the families of the respondents was 297. The children represented all of the five age groups, but the highest number (27.6%) were between 13 and 18 years old (Table III).

The family life cycle was used to categorize the families represented in the study. Over one-fourth of the families (27.5%) were middle-aged, 35 to 64 years, with no children (Table III). The next largest category represented in the family life cycle was older adults, 65 years and over (18.5%). The respondents in the study tended to fit in the later stages of the family life cycle.

The most often typical family represented in the study consisted of a middle-aged male head of household and a female second adult with no children being present in the home. The head of household had graduated from high school, had some college or technical school experience, and was employed full-time in a professional, technical, or similar type position. The second adult was generally a homemaker. The ethnic background of the typical family in the sample was white, with an income between \$20,000 to \$29,999.

Awareness of the Need to Conserve Natural Resources With Respect to Clothing

The respondents were asked to react to eight statements concerning clothing and the need to conserve natural resources. Respondents were able to choose from three responses; agree, neutral, and disagree. The responses, disagree with and neutral, were combined to provide a stronger relationship to agree. For the purposes of the study the responses for each statement will be discussed as numbers and percentages for agree and disagree. Those respondents indicating "agreement" with a statement were considered to be aware of the need to conserve natural resources. Participants indicating "disagreement" or "no opinion" with a statement were considered to be non-aware of the need to conserve natural resources. Each statement concerning the awareness of the need to conserve was analyzed separately.

The respondents indicated awareness of the need to conserve natural resources with regard to clothing. More than 50 percent of the respondents indicated agreement with each of the eight clothing statements (Table IV). Over three-quarters of the respondents agreed with two

TABLE IV

AWARENESS OF THE NEED TO CONSERVE NATURAL
RESOURCES WITH RESPECT TO CLOTHING
(N=304)

Clothing Statements	Agree		Disagree	
	Number	Percentage	Number	Percentage
<u>Body Comfort</u>				
Clothes made from wool are warmer than clothes made from other fabrics	218	71.9	85	28.1
Cotton clothes are cooler for summer than clothes made from other fabrics	258	84.9	46	15.1
Wearing absorbent clothing next to the skin can maintain body heat and comfort	221	72.7	83	27.3
Wearing layers of clothing can help maingain body heat	249	81.9	55	18.1
Fuzzy fluffy jackets are warmer for winter than smooth silky jackets because they hold body heat	198	65.1	106	34.9
<u>Natural Resource Conservation</u>				
Clothes can be remade and/or recycled to conserve natural resources	208	68.7	95	31.4
Limiting the number of garments in the wardrobe can conserve natural resources	164	54.3	138	45.6
Wearing suits or dresses which can be worn for several activities during a days time can conserve natural resources	210	69.3	93	30.7

statements referring to body comfort; cotton clothes are cooler for summer than clothes made from other fabrics (84.9%), and wearing layers of clothing can help maintain body heat (81.9%).

There were fewer agree responses to those statements concerned with reducing the consumption of natural resources. Approximately two-thirds of the respondents agreed that clothes can be remade and/or recycled to conserve natural resources (68.7%), and that wearing suits or dresses which can be worn for several activities during a days time can conserve natural resources (69.3%). However, the number of agree responses to limiting the number of garments in the wardrobe can conserve natural resources were lower (54.3%).

Satisfaction With Clothing Practices and Preferences

The respondents were asked to indicate their satisfaction with regard to clothing practices which would maintain body comfort and to reduce the consumption of natural resources. The respondents were able to choose from very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied. In order to eliminate weak categories, the responses were collapsed in the following way: (1) very satisfied and satisfied were grouped together to indicate satisfaction, and (2) dissatisfied and very dissatisfied were combined to indicate dissatisfied and (3) neutral. For the purpose of this study, the responses will be discussed as numbers and percentages for satisfied, neutral, and dissatisfied.

The respondents indicated a high level of satisfaction with all but one of the clothing practices. Less than half of the respondents (46.2%) indicated satisfaction with remade and/or recycled clothing (Table V).

TABLE V
RESPONSES OF PARTICIPANTS REGARDING SATISFACTION
WITH CLOTHING PRACTICES BY BODY COMFORT AND
NATURAL RESOURCE CONSERVATION
(N=304)

Clothing Practices	Satisfied		Neutral		Dissatisfied	
	N	% ^a	N	% ^a	N	% ^a
<u>Body Comfort</u>						
Covered the head to reduce body heat loss	154	70.3	49	22.3	16	7.3
Wore absorbent clothing next to the skin	176	78.9	40	17.9	7	3.1
Wore fuzzy, fluffy jackets	110	60.4	53	29.1	19	10.4
<u>Natural Resource Conservation</u>						
Remade or recycled clothing	81	46.2	65	37.1	29	16.6
Limited the number of garments in the wardrobe	113	57.4	59	29.9	25	12.6
Wore suits or dresses which could be worn for several activities during a days time	173	79.7	35	16.1	9	4.1

^aDoes not equal 100% due to round off error.

The participants were asked to indicate their satisfaction with the following fibers--acrylic, cotton, nylon, polyester, rayon, and wool, when worn during the winter and during the summer. A majority of the respondents indicated satisfaction with cotton (76.4%), polyester (73%), and wool (72.2%) worn during the winter (Table VI). The next greatest percentage of responses for the remaining fibers, acrylic (32.4%), nylon (30.7%), and rayon (40.1%), were not dissatisfied, but were neutral. For summer wear, the respondents indicated overwhelming satisfaction with cotton (95%) and over two-thirds were satisfied with polyester (69.7%). The participants were dissatisfied with wool (63%) worn during the summer.

TABLE VI
RESPONSES OF PARTICIPANTS REGARDING SATISFACTION
WITH FABRIC OR CLOTHES MADE FROM
SELECTED FIBERS
(N=304)

Fibers	Satisfied		Neutral		Dissatisfied	
	N	%	N	%	N	%
<u>Winter</u>						
Acrylic	125	51.2	79	32.4	40	16.4
Cotton	204	76.4	47	17.6	17	7.0
Nylon	115	30.7	74	30.7	52	21.6
Polyester	195	73.0	39	14.6	33	12.3
Rayon	80	34.9	92	40.1	57	24.9
Wool	182	72.2	45	17.9	25	9.9
<u>Summer</u>						
Acrylic	88	40.6	79	36.4	50	23.0
Cotton	270	95.0	10	3.5	4	1.4
Nylon	107	45.5	73	31.1	55	23.4
Polyester	177	69.7	41	16.1	36	14.2
Rayon	86	38.9	66	29.8	69	31.2
Wool	27	13.5	47	23.5	126	63.0

Test of Hypothesis One

The first null hypothesis, "there is no significant difference in the degree of awareness of natural resource conservation with regard to clothing and selected socio-economic variables," was analyzed using analysis of variance. The degree of awareness score was determined by using the following procedure: A check of "agree" was scored a value of 2, "disagree" a value of 1, and "no opinion" a value of 0. The values for the eight clothing awareness items were added to obtain an awareness score for each participant.

The selected variables were sex, education, employment, and job title of the head of the household and sex, age, education, and job title of the second adult. Family size, family life cycle, ethnic background, and income were also represented in the analysis of variance. There were indications that certain variables approached significance; therefore, after consultation with the statistician, the variables age of the head of the household and employment of the second adult were removed to reduce the degrees of freedom, which made it easier to determine the variables which were significant.

When considering the characteristics of the head of the household, only the educational level approached significance ($P = .0938$) at the .05 level (Table VII). The variables concerning the second adult indicated no significant differences. Family size was the only variable selected that proved to be significant ($P = .0513$). The ethnic background of the head of the household seemed to be approaching significance ($P = .0850$).

TABLE VII
 DIFFERENCE IN THE AWARENESS OF THE NEED TO
 CONSERVE NATURAL RESOURCES CONCERNING
 CLOTHING AND SELECTED SOCIO-
 ECONOMIC VARIABLES

Variable	Residual Mean Square	F Value	D.F.	Prob F
<u>Head of Household</u>				
Sex	2.32	.20	1	.06585
Education	96.47	2.04	4	.0938
Employment	6.23	.26	2	.7691
Job Title	59.43	.73	8	.6622
<u>Second Adult</u>				
Sex	6.63	.56	1	.4558
Age	46.81	.99	4	.4169
Education	30.09	.64	4	.6384
Job Title	152.06	1.43	9	.1839
Family Size	172.01	2.08	7	.0513 ^a
Family Life Cycle	115.20	1.22	8	.2957
Ethnic Background	99.57	2.10	4	.0850
Income	115.22	1.22	8	.2956

^aDenotes Alpha Level = .05

The difference between the socio-economic data and awareness of the need to conserve natural resources with regard to clothing proved not to be significant, with the exception of the variable family size, although the education of head of household and the ethnic background were approaching significance. The null hypotheses was accepted for all variables other than family size, for which the null hypothesis was not accepted.

Test of Hypothesis Two

The chi square test was used to analyze the second hypothesis. There was no significant association between the awareness of the conservation of natural resources concerning clothing and satisfaction with clothing practices and preferences. Awareness of the need to conserve natural resources was determined by analyzing the awareness statements separately. Those respondents that indicated agreement with a statement were considered to be aware of the need to conserve natural resources. All other responses indicated non-awareness. A significance level of .05 was used in the acceptance or non-acceptance of the hypothesis.

A significant association was found to exist in regard to the awareness of the need to conserve natural resources and those clothing practices concerning natural resource conservation (Table VIII). There was a significant association for remade or recycled clothing ($\chi^2 = 12.880$, $P = .0018$), limited number of clothing in the wardrobe ($\chi^2 = 6.355$, $P = .0417$), and suits or dresses which could be worn for several activities during a day's time ($\chi^2 = 14.800$, $P = .0001$), and awareness of the need to conserve natural resources. The contingency coefficients for the natural resource conservation clothing practices were greater than zero: remade or recycled clothing ($C = .263$), limited number of clothing in the wardrobe ($C = .178$), and suits or dresses which could be worn for several activities during a day's time ($C = .253$).

For the association between awareness of the need to wear layers of clothing to help maintain body heat and satisfaction with covering

TABLE VIII

DIFFERENCE IN THE AWARENESS OF THE NEED TO CONSERVE
NATURAL RESOURCES AND SATISFACTION WITH CLOTH-
ING PRACTICES FOR BODY COMFORT AND
NATURAL RESOURCE CONSERVATION

Clothing Practices	Satisfied		Neutral		Dissatisfied		χ^2 ^a	P	c ^b
	N	%	N	%	N	%			
<u>Natural Resource Conservation</u>									
Remade or recycled clothing									
Aware	70	40.2	41	23.6	19	10.9	12.880	.0018*	.263
Non-Aware	10	5.8	24	13.8	10	5.8			
Limited number of clothing in the wardrobe									
Aware	73	37.4	26	13.3	15	7.7	6.355	.0417*	.178
Non-Aware	40	20.5	32	16.4	9	4.6			
Suits or dresses which could be worn for several activities during a day's time									
Aware	142	65.4	19	8.8	5	2.3	14.800	.0006*	.253
Non-Aware	31	14.3	16	7.4	4	1.8			
<u>Body Comfort</u>									
Wearing absorbent clothing next to the skin									
Aware	146	65.5	27	12.1	7	3.1	6.728	.0346*	.171
Non-Aware	30	13.5	13	5.8	0	0.0			
Covering the head to reduce body heat loss									
Aware	132	60.3	41	18.7	11	5.0	3.112	.2110	.118
Non-Aware	22	10.1	8	3.7	5	2.3			
Wearing Fuzzy, fluffy jackets									
Aware	97	53.3	29	15.9	11	6.0	24.964	.0001*	.347
Non-Aware	13	7.1	24	13.2	8	4.4			

*Significant at the .05 level.

^aChi square level

^bContingency coefficient

the head to reduce body heat loss, the chi square was not significant ($\chi^2 = 3.112$, $P = .2110$). Wearing absorbent clothing next to the skin ($\chi^2 = 6.728$, $P = .0346$) and wearing fuzzy, fluffy jackets ($\chi^2 = 24.964$, $P = .0346$), both concerning body comfort, were found to have a significant association (Table VIII). The associations were greater than zero for wearing absorbent clothing next to the skin ($C = .171$) and fuzzy, fluffy jackets ($C = .347$).

The chi square was utilized to determine the difference in the need to conserve natural resources and satisfaction with selected fibers worn during the winter (Table IX) and summer (Table X). There was a significant difference in the satisfaction with acrylic ($\chi^2 = 8.169$, $P = .0168$) and wool ($\chi^2 = 13.360$, $P = .0001$) worn during the winter and the awareness of the need to conserve natural resources. The contingency coefficient of .180 for acrylic and .343 for wool revealed an association greater than zero. Satisfaction with nylon ($\chi^2 = 5.743$, $P = .0566$) worn during the winter approached the level of significance. The satisfaction level of only two fibers worn during the summer differed significantly on the awareness of the need to conserve natural resources; these were cotton ($\chi^2 = 9.433$, $P = .0089$) and polyester ($\chi^2 = 9.373$, $P = .0092$). The contingency coefficients were not equal to zero (cotton $C = .179$; polyester $C = .189$).

The following clothing practices and fiber preferences differed significantly to the awareness of the need to conserve natural resources: remade and/or recycled clothing; limited number of clothing in the wardrobe; suits or dresses which could be worn for several activities during a day's time; acrylic and wool worn during the winter; and cotton and polyester worn during the summer. The null

TABLE IX
 DIFFERENCE IN THE AWARENESS OF THE NEED TO CONSERVE
 NATURAL RESOURCES AND SATISFACTION WITH SELEC-
 TED FIBERS WORN DURING THE WINTER

Fibers	Satisfied		Neutral		Dissatisfied		χ^2 ^a	p	c ^b
	N	%	N	%	N	%			
Acrylic									
Aware	83	34.2	58	57.2	35	28.2	8.169	.0168*	.180
Non-Aware	42	17.3	21	8.6	4	1.7			
Cotton									
Aware	144	54.1	35	13.2	12	4.5	.321	.8517	.035
Non-Aware	59	22.2	12	4.5	4	1.5			
Nylon									
Aware	77	32.0	56	23.3	43	17.9	5.743	.0566	.153
Non-Aware	38	15.8	18	7.5	8	3.3			
Polyester									
Aware	136	51.1	28	10.5	28	10.5	4.320	.1154	.126
Non-Aware	59	22.2	11	4.1	4	1.5			
Rayon									
Aware	58	25.4	62	27.2	44	19.3	1.807	.4051	.089
Non-Aware	21	9.2	30	13.2	13	5.7			
Wool									
Aware	151	60.2	26	10.4	9	18.5	13.360	.0001*	.343
Non-Aware	30	12.0	19	7.6	16	6.4			

*Significant at the .05 level

^aChi square level

^bContingency coefficient

TABLE X
DIFFERENCE IN THE AWARENESS OF THE NEED TO CONSERVE
NATURAL RESOURCES AND SATISFACTION WITH SELEC-
TED FIBERS WORN DURING THE SUMMER

Fibers	Satisfied		Neutral		Dissatisfied		χ^2 ^a	P	c ^b
	N	%	N	%	N	%			
Acrylic									
Aware	78	35.9	62	28.6	45	20.7	4.579	.1013	.144
Non-Aware	10	4.6	17	7.8	5	2.3			
Cotton									
Aware	234	82.0	6	2.1	2	0.7	9.433	.0089*	.179
Non-Aware	36	12.7	4	1.4	2	0.7			
Nylon									
Aware	93	39.6	58	24.7	49	20.9	2.807	.2458	.109
Non-Aware	14	6.0	15	6.4	6	2.4			
Polyester									
Aware	153	60.2	29	11.4	34	13.3	9.373	.0092*	.189
Non-Aware	24	9.5	12	4.7	2	.8			
Rayon									
Aware	72	32.6	54	24.4	61	27.6	1.211	.5458	.074
Non-Aware	14	6.3	12	5.4	8	3.6			
Wool									
Aware	21	10.5	40	20.0	105	52.5	.680	.7119	.058
Non-Aware	5	3.0	7	3.5	21	10.5			

*Significant at the .05 level

^aChi square level

^bContingency coefficient

hypothesis was accepted for covering the head to reduce body heat loss; wearing cotton, nylon, polyester, and rayon during the winter; and for wearing acrylic, nylon, rayon, and wool during the summer.

The participants of the study were aware of the need to conserve natural resources and to a degree carried out practices in order to maintain body heat. Natural resources were conserved through the utilization of clothing. Respondents, however, were not maintaining body heat by covering the head. Those participants that indicated a high level of awareness reported wearing acrylic and wool fibers during the winter, cotton and polyester fibers during the summer.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of the study was to determine the awareness of selected Oklahoma families to the conservation of natural resources concerning clothing. Data were collected through the use of 304 questionnaires completed by Oklahoma families between March 28 and May 20, 1980. Data were tabulated and analyzed using frequencies, percentage, analysis of variance, and chi square tests.

The respondents indicated a high level of awareness of the need to conserve natural resources with regard to clothing. The majority of the respondents were in agreement with the use of clothing to insure body comfort. The responses for those statements dealing with clothing that would reduce the consumption of natural resources were slightly lower.

The participants were generally satisfied with the clothing practices for reduction of natural resource use, with the exception of re-making and/or recycling clothing. A large number of respondents indicated satisfaction with cotton, polyester, and wool worn during the winter and with cotton and polyester worn during the summer. The respondents indicated neutrality with respect to acrylic, nylon, and rayon worn during the winter. Respondents were generally dissatisfied with wool worn during the summer.

Conclusions

Body comfort played an important role in the clothing practices incorporated into the lifestyle of the respondents. The majority of respondents indicated that they did not recycle or remake clothing, although the respondents were aware of the need to conserve clothing. The amount of time and skills needed to alter clothing may have accounted for the difference in awareness and initiating the actual practice.

Satisfaction with cotton garments during the winter was indicated. The promotion of cotton which is a major crop in Oklahoma may have influenced the satisfaction with cotton clothing.

Family size was an important factor in the awareness of the need to conserve natural resources through the use of clothing. The larger the family the more clothing was needed to provide a sufficient wardrobe and an increased potential for clothing conservation existed.

Respondents indicated neutrality in the area of fiber or fabric characteristics. If the participants had no knowledge of, or experience with, the fibers mentioned in the study more information concerning the characteristics of these fibers could be provided through educational programs.

Recommendations for Further Research

The following recommendations are suggested for further research:

1. Examine the impact of fiber characteristics and knowledge of the relationship to fiber preferences.
2. Determine whether recycling and/or remaking clothing is a needed skill in the home with respect to time utilization.

3. Further examine the impact of family size on the need to conserve natural resources with regard to clothing inventory.
4. Determine the effect of instruction in conservation techniques on family clothing selection and purchase.
5. Replicate the study in other states to determine whether findings from this research can be generalized to other geographical locations.

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APPENDIXES

APPENDIX A

EXTENSION LETTERS

OKLAHOMA STATE UNIVERSITY
Family Study Center

Stillwater, Oklahoma 74074
114 Home Economics West
(405) 624-6696 or 6697

February 18, 1980

Dear Ms.

The Family Study Center in the OSU Division of Home Economics is conducting a research project on "The Impact of Family Decisions on Conservation of Natural Resources." In a time when families are faced with reduced supply of resources at increased cost, every effort must be made through public policy and educational programs to reduce stress in families. Research of this type will contribute the knowledge necessary to develop quality programs which will meet this real dilemma. Questionnaires will be mailed to 2,400 households in the state. These rural and urban households were drawn randomly by use of telephone directories. In your county the following communities were selected: Stilwell, Westville, Watts, and Baron. A total of 134 households will receive the survey form.

In order to get an excellent response from these citizens, they may need assistance or clarification as to the importance of this information gathering effort. Therefore, it is vitally important that you know about the project and support the effort. You may need to clarify the purpose and importance of this study for people in your county. They may also need assistance in completing the survey form. We are enclosing a sample copy of the survey form for your reference. Please take time now to become familiar with the questionnaire. We feel it is vital to have your support and willingness to help anyone who requests your assistance in responding.

Thank you for your support and assistance. We are confident that research of this type will be useful in the development of programs which eventually will be used to more effectively serve our public.

Sincerely,

Dr. Sharon Y. Nickols, Director
Family Study Center

Dr. Charles B. Browning, Dean
College of Agriculture

OKLAHOMA STATE UNIVERSITY
Family Study Center

Stillwater, Oklahoma 74074
114 Home Economics West
(405) 624-6696 or 6697

February 28, 1980

Dear Ms.

The Family Study Center in the OSU Division of Home Economics is conducting a research project on "The Impact of Family Decisions on Conservation of Natural Resources." In a time when families are faced with reduced supply of resources at increased cost, every effort must be made through public policy and educational programs to reduce stress in families. Research of this type will contribute the knowledge necessary to develop quality programs which will meet this real dilemma. Questionnaires will be mailed to 2,400 households in the state. These rural and urban households were drawn randomly by use of telephone directories. In your county the SMSA, including Tulsa, was selected. A total of 600 households will receive the survey form.

In order to get an excellent response from these citizens, they may need assistance or clarification as to the importance of this information gathering effort. Therefore, it is vitally important that you know about the project and support the effort. You may need to clarify the purpose and importance of this study for people in your county. They may also need assistance in completing the survey form. We are enclosing a sample copy of the survey form for your reference. Please take time now to become familiar with the questionnaire. We feel it is vital to have your support and willingness to help anyone who requests your assistance in responding.

Thank you for your support and assistance. We are confident that research of this type will be useful in the development of programs which eventually will be used to more effectively serve our public.

Sincerely,

Dr. Sharon Y. Nickols, Director
Family Study Center

Dr. Charles B. Browning, Dean
College of Agriculture

APPENDIX B

COVER LETTER AND INSTRUMENT

OKLAHOMA STATE UNIVERSITY
Family Study Center

Stillwater, Oklahoma 74074
114 Home Economics West
(405) 624-6696 or 6697

Dear Participant:

The Family Study Center at Oklahoma State University needs your help in learning more about how Oklahomans are conserving our natural resources, such as energy and water. We would appreciate receiving your answers to the items included in this package.

Information received from you will not be given to other organizations, but will be held in confidence for use in our research study only. Please complete and return the package by April 14, 1980. We will be pleased to send you a summary of the study upon your request. Complete the enclosed "Study Request" form if you want a copy of the report and enclose it with the completed survey.

When you have responded to the items, fold the package, insert it in the enclosed envelope, seal it, and drop it in the mail. No return postage is needed.

Your County Extension Agent or Home Economist will be pleased to help you, if you have problems completing the package. Feel free to contact them if help is needed.

We have enclosed a bumper sticker to express our appreciation for the time and effort you have devoted in completing the items. It is a reminder of the important role of Oklahoma in the area of natural resources. Thank you for your assistance.

Sincerely,

Sharon Y. Nickols, Director
Family Study Center

THE CLOTHING QUESTIONNAIRE

Directions: Please describe your family by checking (✓) and/or writing the information in the appropriate blanks in the columns to the right of the page.

A. Personal Family Characteristics	Head of Household	Second Adult
1. What is the <u>sex</u> of the head of household? The <u>second adult</u> ? (Check [✓] in columns to the right)		
a. Male		
b. Female		
2. What are the <u>ages</u> of the head of household and the <u>second adult</u> ? (Write the years in the columns to the right).		
3. What are the <u>highest educational levels</u> of the head of the household and the second adult? (Check [✓] the level or levels in columns to the right)		
a. No formal education		
b. Eight years or less		
c. Some high school		
d. High school graduate		
e. High school plus some college or technical school		
f. College graduate		

A. Personal Family Characteristics (cont'd)	Head of Household	Second Adult
4. What is the <u>current employment status</u> of the head of the household and the second adult? (Check [✓] the level or levels in columns to the right)		
a. Employed full-time		
b. Employed part-time		
c. Not employed.		
d. Retired (part-time employed). .		
e. Retired		

5. What is the current job title for the head of household, if employed at present (if not employed at present, skip to item 6)?

6. What is the current job title for the second adult, if employed at present (if not employed at present or there is no second adult in the family, skip to item 7)?

7. What is the size of your family?
 (Write the number of son(s) and/or daughter(s) within the different age groups. If there are no children, skip to item 8)

- a. Pre-schoolers (0-5 years) . .
- b. Children (6-9 years)
- c. Pre-adolescents (10-12 years)
- d. Adolescents (13-18 years) . .
- e. Young adults (19-20 years) . .

Son(s)	Daughter(s)

8. Are there other adults in your household? (if yes, please give their ages and relationships -- if no, skip to item 9)

<u>AGES</u>	<u>RELATIONSHIP</u>
_____	_____
_____	_____
_____	_____
_____	_____

9. What is the ethnic background of the head of household? (please check [✓] only one)

- _____ A. American Indian
- _____ B. Asian or Pacific Islander
- _____ C. Black
- _____ D. Spanish or Mexican heritage
- _____ E. White (Other than Spanish heritage)
- _____ F. Other

12. Look at the list of income groups. Please check [✓] the group which best describes the total combined income of 1979 of all members of your household from all sources -- wages, rentals, dividends, social security, and so forth -- before taxes and deductions.

- _____ A. Less than \$5,000
- _____ B. \$5,000 to \$9,999
- _____ C. \$10,000 to \$14,999
- _____ D. \$15,000 to \$19,999
- _____ E. \$20,000 to \$29,999
- _____ F. \$30,000 to \$39,999
- _____ G. \$40,000 to \$49,999
- _____ H. \$50,000 or more
- _____ I. I do not know

B. Awareness

Directions: Please answer the following items by checking [✓] in one of the three columns (AGREE, DISAGREE, NO OPINION) to the right of each statement. There is no right or wrong answer; we want only your opinion.

AWARENESS	AGREE	DISAGREE	NO OPINION
31. Clothes made from wool are warmer for winters than clothes made from other fabrics			
32. Cotton clothes are cooler for summer than clothes made from other fabrics			
33. Clothes can be remade and/or recycled to conserve natural resources			
34. Limiting the number of garments in the wardrobe can conserve natural resources			
35. Wearing suits or dresses which can be worn for several activities during a day's time can conserve natural resources			
36. Wearing absorbent clothing next to the skin can maintain body heat and comfort			
37. Wearing layers of clothing can help maintain body heat			
38. Fuzzy, fluffy jackets are warmer for winter than smooth, silky jackets because they hold body heat			

C. HOUSEHOLD PRACTICES AND SATISFACTION WITH ADOPTED HOUSEHOLD PRACTICES

Directions: How satisfied are you with the household conservation practices you have done?

*If you are "very satisfied," check [✓] in the first column to the right under Number 1.

*If you are "satisfied," check [✓] in the second column under Number 2.

*If you are "neutral," check [✓] in the third column under Number 3.

*If you are "dissatisfied," check [✓] in the fourth column under Number 4.

*If you are "very dissatisfied," check [✓] in the fifth column under Number 5.

PRACTICES	SATISFACTION				
	VERY SAT. 1	SAT. 2	N.T.L. 3	DIS. 4	VERY DIS. 5
82. Remade or recycled clothing					
83. Limited the number of garments in the wardrobe					
84. Wore suits or dresses which could be worn for several activities during a day's time					
85. Covered the head to reduce body heat loss					
86. Wore absorbent clothing next to the skin					
87. Wore, fuzzy fluffy jackets					
88. Other (Please specify)					

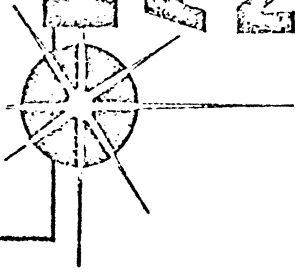
PREFERENCES	SATISFACTION				
	VERY SAT. 1	SAT. 2	NTL. 3	DIS. 4	VERY DIS. 5
	Indicate your <u>satisfaction</u> with the fabric or clothes made from the following fibers purchased for <u>winter</u> .				
89. Acrylic					
90. Cotton					
91. Nylon					
92. Polyester					
93. Rayon					
94. Wool					
95. Other (Please specify) _____					

PREFERENCES	SATISFACTION				
	VERY SAT. 1	SAT. 2	NTL. 3	DIS. 4	VERY DIS. 5
	Indicate your <u>satisfaction</u> with the fabric or clothes made from the following fibers purchased for <u>summer</u> .				
96. Acrylic					
97. Cotton					
98. Nylon					
99. Polyester					
100. Rayon					
101. Wool					
102. Other (Please specify) _____					

Thank you very much for your assistance. We appreciate the time and effort you have given to this task.

APPENDIX C

BUMPER STICKER



**OKLAHOMANS
PRODUCE & CONSERVE
NATURAL RESOURCES**

APPENDIX D

RESPONDENT'S REQUEST FOR RESULTS

STUDY REQUEST

Please complete this form if you would like to receive a copy of the Oklahoma Families Natural Resources summary. PLEASE PRINT.

Name

Address

City

State

Zip

Signature (PLEASE SIGN)

APPENDIX E

REMINDER POSTCARD

4/25/80

It is not too late to complete and return the survey form to the Family Study Center at Oklahoma State University. We know how busy you are, and we do appreciate the time you give in completing the survey form. If you need help, just call the cooperative extension office and they will help you.

Thanks again for your help. We hope you are enjoying the bumper sticker.

Sincerely,

Sharon Y. Nickols, Director
Family Study Center
Oklahoma State University

VITA

Jackie Thomas Williams

Candidate for the Degree of
Master of Science

Thesis: NATURAL RESOURCE CONSERVATION: CLOTHING

Major Field: Clothing, Textiles and Merchandising

Biographical:

Personal Data: Born in Panama City, Florida, November 9, 1955,
the daughter of Mr. and Mrs. Billy R. Thomas.

Education: Graduated from Walnut High School, Walnut, Missis-
sippi, in May, 1973; received Bachelor of Science in Home
Economics degree from Memphis State University in 1977;
completed requirements for certification in Vocational
Home Economics, Mississippi State University, Starkville,
Mississippi, in 1978; completed requirements for the Mas-
ter of Science degree at Oklahoma State University in
December, 1980.

Professional Experience: Graduate research assistant, Family
Study Center, Oklahoma State University, 1979-80; Voca-
tional Home Economics Instructor, Middleton High School,
Middleton, Tennessee, 1978-79.

Professional Organizations: Association of College Professors
of Textiles and Clothing, Omicron Nu, American Home Eco-
nomics Association, Graduate Student Home Economics
Association.