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Transportation Time in Utah Two-Parent/Two-Child Families

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TRANSPORTATION TIME IN UTAH

TWO-PARENT/TWO-CHILD FAMILIES

by

Georgia Hayes Hier

A thesis submitted in partial fulfillment
of the requirements for the degree

of

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Georgia Hayes Hier

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

ABSTRACT

Transportation Time in Utah

Two-Parent/Two-Child Families

by

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Utah State University, 1981

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Travel time used by the homemaker and spouse in 210 Utah families was analyzed according to the purpose of the travel, day of the week, geographic location, season of the year, age of children, educational level of homemaker and spouse, family income, and number of motor vehicles owned by the family for transportation purposes. A time diary was used to collect the data for a 2 day period. Two-parent/two-child families from Washington, Iron, and Salt Lake Counties in Utah comprised the sample.

Homemakers used approximately 49.39 minutes per day for travel and spouses used 63.38 minutes. Spouses used the largest amount of travel time, 30.54 minutes per day, for travel related to paid employment. Homemakers used their largest amounts of travel time for travel related to household duties and leisure time activities, 16.5 and 16.2 minutes per day, respectively.

Significant results for spouses were obtained when travel time was analyzed according to day of the week, geographic location and season of the year. Homemakers' travel time related to day of the week, geographic location, and age of children was significant. There were no significant results in relation to education of homemaker and spouse, family income, and number of motor vehicles owned by the family.

(99 pages)

INTRODUCTION

During the last decade, scarce resources and how consumers use them has become a major topic of discussion at all levels of decision making--world, national, state, local, and family. One resource of concern to many families at the present time is energy.

While the United States represents approximately 5 to 7% of the world's population, it consumes about 30 to 40% of the world's energy (Hannon, 1978; Pushkarev, 1974). The average family in the United States consumes approximately 341 British Thermal Unit's of primary energy per year (Ford Foundation, 1974). This primary energy is in the form of electricity, natural gas, heating oil, and gasoline for transportation purposes.

Transportation consumes 50% of the petroleum and 25% of the total energy used in the United States (Transportation Research Board, 1977). Private automobile use accounts for 53% of total transportation energy (Crane, 1976). The United States alone consumes 53% of the world's gasoline (Sargent, 1974). The automobile dominates private passenger travel and is estimated to account for 90 to 95% of all urban passenger travel and 85% of all inter-city travel (Ford Foundation, 1974; Transportation Research Board, 1977).

As the multiplicity of our lives has increased over the years and they have become more complicated and varied, our time spent traveling

to shop, to work, and for leisure has also increased (Vanek, 1974). The automobile has expanded our town's radius and neighborhood shopping is a thing of the past (deGrazia, 1964; Hutchins, 1977). The typical housewife now spends about 1 day per week in the automobile traveling and shopping as compared to less than 2 hours per week for women in the 1920's (Vanek, 1974). Work trips comprise 30% of all automobile travel but they consume 40% of all automobile gasoline (Hirst, 1975-78). In a study reported by Hunt (1978), driving for pleasure was the number one outdoor activity preferred by Utahns.

The present energy crisis is a reason for concern about the amount of time spent traveling, by whom, where and for what purpose (Illich, 1974; Transportation Research Board, 1977). It has been predicted that it will be necessary for people in the United States to change their use of energy, particularly that used for automobile transportation (Ford Foundation, 1974; Hammond, 1974; Hogan, 1979; Hutchins, 1977; Sargent, 1974). Families will be important as change agents if this is to occur (Hammond, 1974; Paolucci, 1978).

Purpose

The purpose of this study is to investigate time use for travel by the homemaker and spouse in two-parent/two-child Utah families.

Objectives

The specific objectives include:

1. Analyzing travel time according to the purpose of the travel:
   a. Paid employment,
   b. Leisure,
   c. Household duties.
2. Analyzing travel time related to the following factors:
   a. Environmental--
      1. Day of the week,
      2. Geographic location,
      3. Season of the year;
   b. Family characteristics--
      1. Age of children,
      2. Education of homemaker and spouse,
      3. Family income,
      4. Number of motor vehicles owned.

REVIEW OF LITERATURE

Americans spend a significant amount of time traveling and most of it is done in their own private automobiles (Carroll, 1978; Grier, 1978; Transportation Research Board, 1977). Since private automobile usage accounts for approximately 53% of total energy used for transportation, information about travel patterns of families will become increasingly important as changes in energy use become more and more necessary (Transportation Research Board, 1977).

Life in the United States is tied to the automobile (Sargent, 1974). The typical male in the United States devotes at least 1,000 hours each year to his automobile. Four out of his 16 waking hours each day are spent either on the road or gathering resources for use on his car. He not only works for money to buy the car, but he also must spend time in the maintenance of the car after work or on weekends (Illich, 1974).

The amount of fuel used for both passenger and freight traffic has steadily increased in the United States since World War II (Hirst, 1975-78). The consumption of gasoline as a highway fuel increased 64% during the years 1960-1970 (Sargent, 1974). Approximately 90 million automobiles are currently registered in the United States (Hutchins, 1977). It was estimated by Hutchins (1977) that each of these automobiles would be driven 10,000 miles per year. In a 1977-78 study conducted by Hogan in the Minneapolis-St. Paul area, she reported that upper income families drive their automobiles

approximately 16,000 miles per year while lower income families drive their automobiles only 12,000 miles per year.

Although there are new laws in the United States making cars more fuel efficient, people are buying more automobiles, driving them more miles each year, and adding more accessories to them that decrease the fuel efficiency (Hogan, 1977). Since fuel is becoming scarce and more expensive for the consumer, it has been pointed out that automobiles must be made more efficient and that we must use them more efficiently (Pushkarev, 1974; Sargent, 1974; Transportation Research Board, 1977).

Not everyone spends the same amount of time traveling. There is great variation in the amount of time individuals spend traveling in their automobiles. At a time when conservation of energy is necessary, knowing some factors that might influence or be related to the amount of time people spend traveling is important information.

Purpose of the Travel

The amount of time spent traveling might depend on many things such as the value the individual places on his time, the kinds of people in the family, or availability of work close to place of residence (Hutchins, 1977). Many studies report the amount of time spent traveling to and from paid employment (Chapin, 1974; Ford Foundation, 1974; Hirst, 1975-78; Mohring, 1976; Morgan, Sirageldin, & Baerwaldt, 1966; Robinson, 1977). Time devoted to

nonwork trips is an equally important aspect of transportation patterns (Hutchins, 1977).

Paid Employment

The Ford Foundation (1974) reported that almost nine out of ten employed people in the United States used an automobile to drive to and from work. They also noted that approximately three-quarters of those who drive their automobiles to work, drive alone.

Men who were employed full-time used approximately 5 hours per week, or 0.97 hours per day for commuting to and from work (Chapin, 1974; Robinson, 1977). Women who were full-time employees spent only 3 1/2 hours per week commuting, 1 1/2 hours less than their male counterparts. Morgan et al. (1966), reported that people employed less than full-time spent less time commuting to work than did full-time employees.

Employed males spent more time traveling than any other group in the United States, according to Robinson (1977). When the time they spent commuting to and from work was added to their travel time for leisure and other discretionary activities, they averaged 11.0 hours per week.

Household Duties

While there were no studies found that related travel time to amount of time spent in housework, studies were found regarding travel time used by homemakers. Robinson (1977) stated that when obligatory activities such as shopping and chauffeuring children were added to discretionary free-time

activities, females averaged 6.7 hours of travel time per week. Vanek (1974) analyzed data collected in 1965 by the University of Michigan Survey Research Center. The housewives in the study spent about 1 full day per week on the road and in stores to accomplish tasks related to home consumption. Chapin (1974) reported that 0.57 hours per day were spent traveling for shopping in a 1968 Washington, D. C., survey. In a time study conducted by Walker and Woods (1974) it was reported that housewives used .3 hours per day for travel time connected to household work. Edwards (1978) reported on data collected through a 1970 survey in the Twin Cities area. He indicated that many housework and leisure trips were restricted to areas close to home if the necessary facilities were present. Approximately 45% of all trips were for personal business, social and recreational activities, and shopping and were started from the place of residence.

Leisure

Hutchins (1977) stated that the automobile has created new styles in the ways we use our leisure time. The automobile is a necessary component of many of our leisure time activities. Hunt (1978) reported that driving for pleasure was the favored outdoor activity in Utah. He stated that Utahns consumed 21.5 million hours in 1977 driving for pleasure in the state. The family automobile, according to Hunt, was still the most used means of transportation for outdoor recreation even though the price of gasoline had increased during the preceding years.

Robinson (1977) reported that travel time for leisure activities more than doubled on Saturdays and Sundays compared to weekdays. He further stated that, on the average, people traveled shorter distances for leisure activities than work related activities. This suggests that people are not inclined to give up much of their free time to travel long distances to get to leisure time activities.

Environmental

Day of the Week

Chapin (1974) compared time used by husband and wife for travel on weekdays to time used for travel on Saturday and on Sunday. Weekday travel averaged 1.14 hours while Saturday travel was 0.97 hours. Sunday travel was the lowest of the three for Chapin's subjects, averaging just 0.74 hours.

It is interesting to note that the purpose of the traveling differed from weekdays to weekends (Chapin, 1974; Robinson, 1977). The weekday travel was, as might be expected, mainly trips related to employment. Trips for social and leisure activities more than doubled on weekends according to Robinson (1977). Chapin broke the weekends down further and reported that shopping was the main activity on Saturday, requiring one-third of all travel time. Church related activities comprised the largest single category of travel time on Sunday with about one-quarter of Sunday's total travel time allocated for that purpose.

Geographic Location

Grier (1978) indicated that our fuel consumption is heavily and directly influenced by our settlement patterns in the United States. We have organized our towns with the idea that fuel would remain cheap and plentiful (Grier, 1978; Keyes, 1978). When fuel was no longer cheap and plentiful, Hutchins (1977) indicated that personal travel would be restricted and people would have to live closer to work or the work would have to be brought closer to the people.

Morgan et al., in a 1966 survey, reported that those living outside the city center spent less time commuting to and from work than those living in the center of densely populated cities. He suggested that this might be due to congested city traffic or that those in the large cities were more likely to use public transportation which is often slow. Robinson (1977) also indicated that the trip to work took longer for those living in the city than for those who lived outside the city center.

Season of the Year

There was a lack of information available regarding travel time as it is related to season of the year. Robinson (1977) did report that housewives' nonwork travel was lower in poor weather than in good weather. This might be due to the fact that some travel related to household work and leisure are discretionary and could be influenced by weather and road conditions.

Family Characteristics

Age of Children

Few studies have related age of children to travel time of families. Robinson (1977) indicated that age of children did emerge as a predictor of above-average travel time. He suggested that older school-age children require more chauffeuring and shopping travel than younger preschool children. Research conducted by Domencich and McFadden (1975) indicated that travel became burdensome with the addition of preschoolers in the family.

Education of Homemaker and Spouse

In studies where education was studied in relation to travel time, it was not found to be a significant factor (Morgan et al., 1966). Morgan et al. hypothesized that people with more education would be more limited in their choice of work due to their level of specialization and, therefore, would have to travel farther for paid employment. This did not prove to be correct. It was found that generally the skilled and semi-skilled in the middle education levels had more time consuming journeys to and from work than other groups studied.

Income

Income of the family appears to make a significant different in the amount of time used for travel by the family (Grier, 1978; Hannon, 1978; Hogan, 1977; 1979; Owen, 1966; Robinson, 1977).

It is in the use of gasoline for transportation that the greatest gap occurs between the rich and the poor in energy usage (Ford Foundation, 1974). Studies by Hannon (1978) and Hogan (1979) stated that as income increased, gasoline consumption increased sharply. Hogan (1977) also reported that the upper income families used five times as much gasoline as the lower income families. Owen (1966) and Lapin (1964) suggest this rise in income is directly related to the number of motor vehicles owned by the family. This in turn leads to greater gasoline consumption.

The poor not only have fewer cars, they drive them fewer miles each year (Ford Foundation, 1974). Hogan (1979) stated that the lower income families she studied drove their cars approximately 20% less than the upper income group. Julias (1978) remarked that people tended to become sloppy in energy consumption habits when their incomes increased.

According to Grier (1978) the upper income group has the advantage of buying more cars, adding extra fuel intensive options to those cars and have more leisure time to travel in their cars. Robinson (1977) stated that the affluent have the option of using their automobiles more for both obligatory and leisure activities.

Number of Automobiles Owned

Approximately 80% of all households in the United States own at least one automobile and 44% own two or more (Ford Foundation, 1974). About half of lower-income families do not own an automobile whereas 79% of upper-income families own two or more.

Robinson (1977) indicated that there was little difference in the commuting time for owners of one car compared to that of those owning two or more cars. He further stated that car owners did not spend more time traveling than people who did not own any cars. Lapin (1964), however, found that car ownership was directly related to daily trip generation. Hannon (1978) reported that although gasoline usage increased, there was a saturation level where people could not drive any more cars any more miles.

Summary

The literature reviewed indicated that amount of time spent traveling was related to paid employment, particularly for men. This time was concentrated on weekends and was generally less for employees who did not live in a large city.

Travel time related to household tasks was more important in the lives of women than of men and has increased tremendously over the past 50 years. Travel for leisure has been important to Utah residents and this type of travel, nationwide, has been concentrated on weekends.

Time spent traveling has usually been found to increase as age of children increased. Most researchers have found a positive relationship between income and travel time. The number of motor vehicles owned does not, however, seem to be related to travel time.

METHODS AND PROCEDURES

The data for this research were obtained from a study entitled "An Interstate Comparison of Urban/Rural Families' Time Use." This research project was part of a 10 state study. It was originated by Kathryn Walker at Cornell University with the purpose of updating a 1966-67 New York family time use study (Walker & Woods, 1976) and extending it to a more nationwide basis.

Utah Study

The Utah study was funded by the Utah State University Agriculture Experiment Station and the data were collected from May 1977 through August 1978. As far as could be determined, this was the first time diary study had been conducted in the state of Utah.

Measures Used

The instruments used for this study included a time diary and an extensive information questionnaire. Both instruments were pretested and printed at Cornell University and were revised versions of the 1966-67 time use study instruments.

As indicated by Robinson (1977), the most reliable method of collecting time use data has been the time diary. Biases and exaggerations of socially acceptable activities are minimized when subjects are asked to recall

the previous 24-hour period while it is current in their minds. In a study cited by Robinson (1977) "yesterday" estimates were compared with "tomorrow" records to determine the degree of correspondence between the two types of time diaries. The overall correlation was .85 (Yule's Y) which indicated that there was a high degree of correspondence and the time diary method of gathering time use data is highly reliable. Reliability has also been substantiated by the congruency found in results from different research projects investigating time use (Robinson, 1977; Szalai, 1972; Walker & Woods, 1976).

Robinson also referred to three methods that have been used to determine the validity of the time diary. One method was to have the subjects reminded by beepers, which sounded at random times during the day, to record what they were doing at that particular moment. Another method was to have the subjects record a "random hour" as completely as possible during the day on which they were recording the time diary (Robinson, 1977). The last method was to have television cameras record the activities of the subjects. Although some discrepancies were reported in behavior on an individual basis, the overall patterns were very similar to the patterns obtained from the time diary method (Robinson, 1977).

The time diaries used in this study listed 18 activity categories along the vertical side and the time periods, broken down into 10-minute intervals, horizontally. Each diary recorded a complete 24-hour period for each member of the family over the age of 5 (Appendix A).

The information questionnaire consisted of questions concerning socioeconomic and demographic factors. Information such as income level, education of homemaker and spouse and number of automobiles owned by the family were obtained from this instrument.

Subjects

The sample consisted of 210 two-parent/two-child families, half from an urban area and half from a rural area. There were 105 families from Washington and Iron counties who comprised the rural families and 105 families from Salt Lake County who were considered urban families. These counties were used because of their population size, geographic location, and availability of population lists.

It is important to note that the counties from which the rural sample was drawn contain small communities. They are not rural areas where homes are part of large farms and ranches and consequently are many miles from a business and shopping area. The counties, Washington and Iron, are in the southeastern part of Utah and, therefore, away from the industrial and population center of the state.

All families were systematically drawn from population lists of qualifying families. The names were then checked in the telephone directory for accuracy and to determine whether they were still residing in the county. This might have created some bias as those families with unlisted numbers or without telephones were eliminated from the sample. In a recent study

by Wolfe (1979), however, he indicated that less than 2% of the responses on a single item of a telephone sample would differ from equivalent responses of a sample if the entire population had been sampled.

Data Collection

Collection of the data was conducted by interviewers hired through Wasatch Opinion Research Corporation. Training of the interviewers was conducted at Utah State University in February, 1977, using a video-tape prepared by Cornell University. This was to ensure uniformity of interviewing procedures in all participating states.

The advantages of gathering data through a personal interview were cited by Walker and Woods (1976). In a personal interview, interviewers are able to explain the purpose of the study to the homemakers and answer any questions that they might have at that time. Interviewers are also able to give the homemakers complete instructions as to how the time diaries should be completed and thereby increase the potential for obtaining the desired number of completed diaries.

Data collection began in May of 1977. The interviews were spaced throughout the year and over the different days of the week to take seasonal and daily variations into account. Lists of eligible families were sent to the interviewers. The family was then called to see if they were a two-parent/two-child family and if they would be interested in participating in the study. Arrangements were then made for a personal interview with the homemaker of the family that had been selected.

During the initial visit, the time diary was completed for the previous day with the interviewer explaining the diary to the homemaker. The homemaker was instructed to complete a second time diary for the following day. She was also requested to check both diaries with other family members for accuracy. The interviewer returned after the second time diary had been completed and checked it for completeness and filled out the questionnaire with the help of the homemaker. The data were then forwarded to Utah State University to be coded. Data collection was completed and analysis begun in the fall of 1978.

Statistical Analysis

There were two basic units of analysis for this study, the homemaker and her spouse. The dependent variable was the time used for travel.

Objective 1. Objective 1, travel time for paid employment, household duties, and leisure activities was analyzed using measures of central tendency and variability.

Objective 2. The second objective was to analyze the travel time as it is related to selected independent variables.

In objective 2(a), day of week and geographic location were analyzed by a "t" test to determine wherher there was a significant difference between the means. Season of the year was tested using analysis of variance to determine whether the mean scores differed significantly.

In objective 2(b), analysis of variance was used to analyze education, income and number of automobiles owned by the family to determine whether the mean scores differed significantly. A "t" test was used to analyze age of children to determine if there were significant differences between the means.

Definitions

Paid Employment

Part-time employment. Working for pay 1 to 34.99 hours per week.

Full-time employment. Working for pay 35 hours or more per week.

Day of Week

Weekday. Monday through Friday.

Weekend. Saturday and Sunday.

Geographic Location

Rural. Iron and Washington Counties.

Urban. Salt Lake County.

Season of the Year

Summer. June, July, and August.

Fall. September, October, and November.

Winter. December, January, and February.

Spring. March, April, and May.

Age of Children

Pre-school child. A child under 1 to 5 years of age.

School aged child. A child 6 to 11 years of age.

Teenage child. A child 12 to 17 years of age.

Education of Homemaker and Spouse

The amount of formal education completed:

High school diploma or less,

Some college,

College degree(s) or professional training.

Income

The amount of money the family earned or received per year.

Low. Under $10,000.

Moderate. $10,000 to $19,999.

High. $20,000 or above.

RESULTS AND DISCUSSION

The purpose of this study was to investigate time used for travel by the homemaker and spouse in two-parent/two-child Utah families. The first objective was to analyze travel time according to the purpose of the travel. The second was to analyze travel time as it might be affected by the following factors: day of week, geographic location, season of the year, age of children, educational level of homemaker and spouse, family income, and number of motor vehicles owned by the family for transportation purposes.

The instruments used to collect the data consisted of a time diary and an information questionnaire. The data were collected during the period May, 1977, to August, 1978.

Description of the Sample

The participants were 210 two-parent/two-child families in the state of Utah. Half, considered urban, were for Salt Lake County and half, considered rural, were from Washington and Iron Counties.

The sample was stratified into five levels according to the age of the younger child:

Level 1--under 1 year of age,

Level 2--1 year of age,

Level 3--2 to 5 years of age,

Level 4--6 to 11 years of age,

Level 5--12 to 17 years of age.

Age of Homemaker and Spouse

The ages of the homemakers ranged from 21 to 57 years. Rural homemakers' ages ranged from 21 to 53 with a mean of 31.65 years. The age range for urban homemakers was 22 to 57 years. The mean age for urban homemakers was 32.19, slightly higher than the rural homemakers. More than half of the total sample was age 30 or younger (see Table 1).

Table 1

Age of Homemaker

Age	Rural Number	Urban Number
21-25	29	14
26-30	29	38
31-35	16	21
36-40	9	15
41-45	8	7
46-50	8	4
51-55	2	2
56-60	0	1
Missing	4	3
Total	105	105

Spouses' ages ranged from 21 to 57 years for the total sample. Rural spouses' ages ranged from 22 to 57 years and the mean was 34.62 and the urban spouses' ages ranged from 21 to 57 with a mean age of 34.53 (see Table 2).

Table 2

Age of Spouse

Age	Rural Number	Urban Number
21-25	16	10
26-30	29	25
31-35	17	30
36-40	12	14
41-45	12	12
46-50	8	7
51-55	4	2
56-60	2	2
Missing	5	3
Total	105	105

Family Income

Income levels for the 210 families included in the sample are shown in Table 3. Per capita income for Salt Lake County for 1975 was $4,780 or

$19,120 for a family of four (Population Estimates and Projections, 1979). The average incomes for Washington and Iron Counties, as cited in the same report, were less with a per capita income of $3,373 and $3,500, respectively. This averaged approximately $13,748 for a family of four in the two rural counties (Population Estimates and Projections, 1979). Among the families who participated in the study, the urban families had a slightly higher income than the rural families (see Table 3). For the purposes of the current study, families were grouped into three income levels: under $10,00, $10,000 to $19,999, and $20,000 and over.

Table 3

Family Income Level

Income Bracket	Rural		Urban	
	N[a]	%	N	%
Under $10,000	26	25	3	3
$10,000-$19,999	49	47	59	56
$20,000 and over	26	25	41	39
No response	4	4	2	2
Total	105	101[b]	105	100

[a]N = Number of respondents.
[b]Percentages were rounded off.

Educational Level

The homemaker was requested to indicate the highest level of schooling attained by herself and her husband. The educational levels of urban and rural homemakers are summarized in Table 4. The spouses' educational levels are reported in Table 5.

Table 4

Education of Homemaker

Level	Number of Homemakers		Total
	Urban	Rural	
High school diploma or less	51	45	96
Some college	37	34	71
College degree(s) or professional training	17	26	43
Total	105	105	210

Table 5

Education of Spouse

Level	Number of Spouses		Total
	Urban	Rural	
High school diploma or less	33	30	63
Some college	28	39	67
College degree(s) or professional training	44	36	80
Total	105	105	210

Statewide, the educational level of persons 18 years old and older for 1976 was 12.8 years of schooling (Fjelsted & Hachman, 1976). In Utah, 85.4% of the males and 85.6% of the females aged 18 to 24 were high school graduates. The average for the 24 and older category was somewhat lower with 79.8% of the males and 77.7% of the females being high school graduates.

The group of individuals who participated in this research project had a larger percentage of high school graduates than the state average, with 96% of the spouses and 95.5% of the homemakers having graduated from high school. Only 11 homemakers and eight spouses had less than a high school diploma. One reason for this difference could be that the research families were relatively young and younger persons usually have a higher educational level than do older individuals.

Employment of the Homemaker and Spouse

For the purposes of this study, those working for pay 1 hour or more per week were considered to be employed. Those working from 1 to 34.99 hours were identified as part-time employees and those working 35 or more hours per week were considered to be full-time employees. The actual work hours recorded for the 2 days by the respondents were totalled and divided by 2 in order to obtain an average day's work time. This figure was then times by 5 to construct a hypothetical work week. Data were gathered from the respondents for all 7 days of the week; therefore, the figures could underestimate the hours the individuals actually spent in paid employment.

In the sample, 34% of the homemakers were employed either part or full-time (see Table 6). Statewide 48.4% of Utah women age 16 and over were in the labor force in 1977 which was defined as all women who had a job or were looking for a job (Sargent, 1978).

Approximately half of the spouses were employed full-time. Only 6% of the sample spouses reported not working at all. In 1977, 82.4% of the males age 16 and over in Utah were participating in the civilian labor force (Sargent, 1978).

Table 6

Paid Employment of Homemakers and Spouses

Hours of paid employment	Homemakers	Spouses
0	139	13
1-34.99	59	94
35 and over	12	103

Travel Time

The participants in the sample kept a time diary recording how they allocated their time for 2 days. It was felt that 2 days rather than 1 would give a more accurate measure of how the family spent its time as it would reflect 2/7 of a week rather than just 1/7 (Sanik, 1979). The research

project was designed to cover all 7 days of the week and all 12 months of the year.

A time diary was used as the principal instrument for recording how the members of the family spent their time. The time diary was broken down by 10 minute intervals horizontally and 18 activity categories vertically. The first 10 activity categories were designated as household tasks. Category 12 was paid employment. Social and recreational activities were recorded in category 15 (see Appendix A).

To record their time use, the respondents were instructed to draw a line in the activity category indicating the length of time spent in that activity. When travel was associated with an activity, the time spent traveling was also recorded and labeled as travel time. For example, if 10 minutes were used to get to work then the 10 minutes was designated as travel time in the paid work category. Travel time for the subjects was computed for each of the 18 activity categories and for total household work. Time spent traveling in connection with individual activities was summed to give a total travel time for each respondent.

Objective 1

Total travel time for all 18 activity categories for both the homemaker and spouse averaged approximately 55 minutes per day. The average total travel time for homemakers amounted to 49.39 minutes per day and spouses' travel time was 63.38 minutes per day. Travel time related to paid

employment, household duties and leisure activities encompassed the largest amounts of time (see Table 7).

Table 7

Mean Minutes Travel Time Per Day

Activity	Homemaker	Spouse
Total travel	49.39	63.38
Paid employment	4.40	30.54
Household duties	16.50	6.50
Leisure activities	16.21	14.76

The largest block of travel time for the spouses, 30.54 minutes per day, was for travel related to paid employment. This is consistent with the findings of other researchers (deGrazia, 1962; Ford Foundation, 1974; Lapin, 1964). Homemakers averaged just 4.44 minutes per day in travel related to paid employment. These results are consistent with the findings that the husbands spent 6.86 hours per day in paid employment while the wives averaged 1.36 (McCullough, 1980). It would seem logical that additional travel time would be related to more hours spent in the labor market.

Homemakers in the study spent about equal amounts of time in travel related to household tasks and travel related to leisure. Homemakers in

this study averaged 6.61 hours per day for household tasks and it is not surprising that a large amount of their travel time, 16.50 minutes, would be related to this activity. The spouses, however, spent 1.78 hours per day for household tasks and they had just 6.50 minutes travel time related to this activity (see Table 7).

Travel for leisure activities was the second largest block of travel time for the spouses. The homemakers also spent a large amount of time for travel related to leisure activities. According to Swapp (1979), the average amount of total time spent in leisure activities by these respondents was 3.90 hours per day for husbands and 3.91 hours for wives. Travel time related to leisure activities was nearly the same for husbands and wives.

Factors Related to Amount of Travel Time

Objective 2

The second objective of this study was to determine how certain factors were related to the amount of time used for travel. Three environmental factors and four family characteristics were analyzed. The environmental factors included were day of week, geographic location, and season of the year. Family characteristics studied included age of children, education of the homemaker and spouse, family income, and number of motor vehicles. Each of the environmental factors and family characteristics was analyzed in relation to total travel time, travel time for household duties, and travel for leisure activities.

Day of the week. To analyze whether there was a significant difference in travel time according to day of the week, "t" tests were used to compare weekday travel time to weekend travel time. It was not possible using SPSS to combine day 1 and day 2 travel time because of the way the data were coded. We, therefore, compared homemakers' weekday travel time to homemakers' weekend travel time for day 1 and day 2 in separate analyses. The same was done for the spouses' travel time.

When comparing total travel time in relation to day of the week, homemakers used more travel time on the weekend than on weekdays for both day 1 and day 2. The difference was not statistically significant for either day (see Table 8).

Table 8

Mean Minutes Per Day of Total Travel Time

by Day of the Week for Homemakers

Day of the week	Day 1			Day 2		
	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	59.1	103.1	60	46.8	62.0
Weekday	159	50.3	45.0	150	46.1	48.9
Level of Significance		.55			.93	

[a]N = Number of respondents.

When total travel time of spouses was analyzed for day 1, a difference of about 10 minutes was found between weekend days and weekdays (see Table 9). The difference, however, was not significant. On day 2, the weekday travel time of spouses exceeded their weekend travel time. Day 2 data for spouses agreed with Chapin's (1974) findings that more time is used for travel on the weekdays than on the weekends by men.

Table 9

Mean Minutes Per Day of Total Travel Time

by Day of the Week for Spouses

	Day 1			Day 2		
Day of the week	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	69.5	91.6	60	60.9	76.0
Weekday	159	59.1	40.2	150	66.7	73.0
Level of significance		.43			.60	

[a]N = Number of respondents.

Homemakers' travel time related to leisure was concentrated on weekend days (see Table 10). Although the differences were not significant at the .05 level, homemakers used almost 3 times as much travel time for leisure activities on the weekend for day 1 and over 2 times as much travel time for leisure activities on the weekend for day 2. This finding is in

agreement with the research done by Robinson (1977) indicating that more leisure time activities occur on the weekends.

Table 10

Mean Minutes Per Day of Leisure Travel Time

by Day of the Week for Homemakers

	Day 1			Day 2		
Day of the week	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	32.8	104.3	60	26.2	57.7
Weekday	159	11.2	27.3	150	11.9	31.8
Level of significance		.14			.07	

[a]N = Number of respondents.

Spouses also used more travel time for leisure activities on the weekends than on weekdays (see Table 11). This difference was not significant at the .05 level but again spouses used approximately 3 times more travel time for leisure activities on the weekends for day 1 and twice as much travel time for leisure activities on the weekends of day 2 than they did on weekdays.

Homemakers used more travel time on the weekdays than on the weekend for travel in relation to household duties for both day 1 and day 2 (see Table 12). The differences were significant for both days.

Table 11

Mean Minutes Per Day of Leisure Travel Time

by Day of the Week for Spouses

Day of the week	Day 1			Day 2		
	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	29.7	88.2	60	23.6	55.4
Weekday	159	9.5	27.6	150	11.7	35.4
Level of significance		.11			.12	

[a]N = Number of respondents.

Table 12

Mean Minutes Per Day of Household Travel Time

by Day of the Week for Homemakers

Day of the week	Day 1			Day 2		
	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	9.2	15.6	60	8.0	15.0
Weekday	159	21.3	26.9	150	17.3	23.5
Level of significance		.000			.001	

[a]N = Number of respondents.

Travel time for household duties for spouses in relation to day of the week was the opposite of the homemakers' results. Spouses used more travel time for household duties on the weekends (see Table 13). This seems logical as they spent more time in the job market during the weekdays than on weekends. These results were not significant at the .05 level.

Table 13

Mean Minutes Per Day of Household Travel Time

by Day of the Week for Spouses

	Day 1			Day 2		
Day of the week	N[a]	Mean	S.D.	N	Mean	S.D.
Weekend	51	9.0	15.5	60	8.2	20.7
Weekday	159	7.3	14.5	150	4.1	10.1
Level of significance		.47			.14	

[a]N = Number of respondents.

As would be expected, significant differences were obtained when comparing travel time used for commuting to and from paid employment in relation to day of the week. Homemakers used more travel time for paid employment on weekdays than on the weekends (see Table 14). Very little travel time was used for paid work on the weekend for day 1, less than 2 minutes; and no travel time for paid work was recorded on the weekend for day 2. The results were statistically significant.

Table 14

Mean Minutes Per Day of Travel Time for Paid Work by Day of the Week for Homemakers

Day of the week	Day 1			Day 2		
	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	1.9	5.9	60	0.0	0.0
Weekday	159	5.5	13.2	150	5.9	13.4
Level of significance		.007			.000	

[a]N = Number of respondents.

There was also a significant difference in travel time for paid work in relation to day of the week for spouses (see Table 15). This was to be expected since spouses spent a great deal of their time, 6.8 hours per day, in the job market. Spouses used more travel time for commuting to and from paid employment on the weekdays than on weekends and the difference for both days was significant at the .000 level.

Homemakers used almost twice as much time for travel related to organizational participation on weekend days as they did on weekdays for both day 1 and day 2 (see Table 16). This category included church activities which are predominantly on Sundays and this may have accounted for much of the difference.

Table 15

Mean Minutes Per Day of Travel Time for Paid Work by Day of the Week for Spouses

Day of the week	Day 1 N[a]	Day 1 Mean	Day 1 S. D.	Day 2 N	Day 2 Mean	Day 2 S. D.
Weekend	51	12.1	23.8	60	9.4	37.2
Weekday	159	33.3	25.2	150	42.3	56.1
Level of significance		.000			.000	

[a]N = Number of respondents.

Table 16

Mean Minutes Per Day of Travel Time for Organizational Participation by Day of the Week for Homemakers

Day of the week	Day 1 N[a]	Day 1 Mean	Day 1 S. D.	Day 2 N	Day 2 Mean	Day 2 S. D.
Weekends	51	8.5	15.8	60	6.8	13.8
Weekday	159	4.5	12.3	150	3.4	11.7
Level of significance		.10			.07	

[a]N = Number of respondents

Travel time for organizational participation for the spouses in relation to day of the week also proved to be significant. On both days there was a greater amount of travel time used on the weekends than on weekdays for the purpose of organizational participation (see Table 17).

Table 17

Mean Minutes Per Day of Travel Time for Organizational Participation by Day of the Week for Spouses

	Day 1			Day 2		
Day of the week	N[a]	Mean	S. D.	N	Mean	S. D.
Weekend	51	9.7	18.1	60	9.6	18.0
Weekday	159	1.9	7.4	150	1.0	5.0
Level of significance		.004			.001	

[a]N = Number of respondents.

Geographic location. To determine what effect living in the city versus living in the rural areas had on travel, "t" tests were used to analyze time spent traveling by urban homemakers, rural homemakers, urban spouses and rural spouses. It was felt that this environmental factor might be important, therefore, all 18 activity categories were analyzed for urban-rural differences. The results for total travel time, travel time related to leisure

and to household work and any other category where significant results were obtained are reported.

Table 18

Mean Minutes Per Day of Travel by Homemakers by Geographic Location

Activity	Rural	Urban	Level of Significance
Total	49.1	49.7	.91
Leisure	18.3	14.1	.38
Household	14.5	18.4	.10
Organizational participation	6.5	3.4	.02

In comparing total travel time of urban and rural homemakers, no significant difference was found. Homemakers in both groups spent about an equal number of minutes per day in travel (see Table 18).

Rural homemakers spent more time traveling for leisure activities than did their urban counterparts. The difference was not significant.

When comparing the time used for household travel by homemakers, it was found that rural homemakers spent less time traveling than did the urban homemakers. While this difference was not significant at the .05

level, it was significant at the .10 level. The difference in time was less than 4 minutes per day.

There was a difference, significant at the .02 level, for homemakers' travel time related to category 14, organizational participation. Rural homemakers spent more time for travel in this category, 6.5 minutes, compared to the urban homemakers' 3.4 minutes per day. This category included clubs and church related activities.

Rural spouses used less total travel time than did urban spouses (see Table 19). While this difference amounted to 12 minutes per day, it was not statistically significant at the .05 level; but it was at the .07 level. This would lend some support to Morgan et al. (1966) who contended that travel in the urban areas tended to be slow due to congestion and higher use of public transportation.

Travel for household related duties was less for the rural spouses than for the urban spouses. The difference was not significant. The difference might indicate that urban spouses were more willing to do household errands for their wives than the rural spouses or that household related travel required less time in rural areas because services were closer together.

Rural spouses spent more travel time for leisure activities than the urban spouses. The difference, however, was only 2 minutes and was not significant at the .05 level.

Table 19

Mean Minutes Per Day of Travel by Spouses

by Geographic Location

Activity	Rural	Urban	Level of Significance
Total	57.4	69.3	.07
Leisure	15.7	13.7	.67
Household	5.5	7.5	.15
Paid employment	19.7	41.4	.00
Organizational participation	5.8	1.4	.00
Eating	1.4	2.6	.05

Rural spouses spent considerably less time for travel to and from work than did the urban spouses. Rural spouses spent only 19.7 minutes per day while urban spouses spent 41.4 minutes per day. It is important to remember that the counties from which the rural sample was drawn contained small communities not large farm and ranches where there are many miles from businesses and shopping areas. This difference in travel time in relation to urban-rural differences was significant at .00. This finding supports Robinson's (1977) observation that the trip to work in the city took a longer period of time than it did for those living outside the city.

Difference in time spent traveling related to organizational participation was also significant. Rural spouses used more time in travel related to organizational participation than did urban spouses.

While the actual times were small, travel time related to eating was significant at the .05 level. Rural spouses used only 1.4 minutes per day for this category while urban spouses used 2.6 minutes per day.

Season of the year. In order to analyze what effects season had on travel time, the months of the year were combined into four seasons. The months were grouped to take account of climatic differences in Utah and also so that the summer season would be the 3 months that children were out of school. Therefore, December, January and February were combined to make up the winter season; March, April and May the spring season; June, July and August the summer season; and September, October and November the fall season. An analysis of variance was then run to determine if there were any significant differences between the groups and time spent for travel.

When total travel time for homemaker and spouse were analyzed in relation to season of the year, there were no significant differences. It was evident that the homemaker spent more time in travel during the summer when the children were out of school, but this amount to only 4 extra minutes per day. The spouse's total travel time remained quite consistent over all four seasons (see Table 20).

Table 20

Mean Minutes Per Day of Total Travel Time

by Season of the Year

Season	Homemaker		Spouse	
	Mean	S. D.	Mean	S. D.
Winter	49.4	37.8	62.1	36.8
Spring	49.0	45.0	65.9	56.8
Summer	53.4	53.9	62.5	54.3
Fall	47.1	37.2	62.6	42.9
Level of significance	.86		.97	

In analyzing travel time for the purpose of leisure activities in relation to season of the year, it was clear that both homemakers and spouses spent the greatest amount of travel time in the summer and the least in winter (see Table 21). These results were not significant at the .05 level, however. Perhaps Utah families use motor vehicles for travel to and from leisure activities when the weather is nice and when the children were out of school. This finding is in agreement with Robinson (1977) when he stated that housewives' nonwork travel was lower in poor weather.

The results of the analysis of travel time for household duties in relation to season of the year were not significant at the .05 level. It was found, however, that both homemakers and spouses used the least amount of

Table 21

Mean Minutes Per Day of Leisure Travel Time

by Season of the Year

Season	Homemaker		Spouse	
	Mean	S. D.	Mean	S. D.
Winter	10.2	20.0	7.6	19.2
Spring	15.0	38.9	13.3	35.7
Summer	22.3	46.8	19.9	43.1
Fall	15.1	21.1	15.7	30.6
Level of significance	.38		.36	

time for travel for household duties in the spring and the most in the fall (see Table 22). This difference, however, amounted to only a few minutes per day.

Activity 14, organizational participation, did prove to be significantly different for the spouses in relation to season of the year. The statistics reveal that both homemakers and spouses used the greatest amount of travel time for organizational participation in the winter months and the least amount in the fall (see Table 23).

Table 22

Mean Minutes Per Day of Household Travel Time

by Season of the Year

Season	Homemaker		Spouse	
	Mean	S.D.	Mean	S.D.
Winter	17.0	21.4	6.8	11.5
Spring	14.0	15.9	5.2	10.6
Summer	16.1	14.5	6.9	9.1
Fall	19.1	18.8	9.1	11.0
Level of significance	.48		.75	

Table 23

Mean Minutes Per Day of Organizational Participation

Travel Time by Season of the Year

Season	Homemaker		Spouse	
	Mean	S.D.	Mean	S.D.
Winter	7.5	10.7	7.4	11.4
Spring	4.9	8.7	3.4	7.6
Summer	5.5	13.4	3.2	8.3
Fall	2.5	5.7	1.5	4.5
Level of significance	.12		.00	

Age of children. To evaluate what effect age of children had on the travel time of the parents, families with one or two preschoolers (age less than 1 through 5) and families with one or two teenagers (ages 12 and over) were analyzed. Robinson (1977) suggested that teenagers required more travel for shopping and social activities than any other age groups of children. Domencich and McFadden (1975) found in their research that shopping with preschoolers was burdensome and fewer trips were made by families as the number of preschoolers in the family increased. Therefore, it was felt that analysis of these two groups would give the largest differences in travel time. There might be some overlap in families as a family with one preschooler could also have one teenager. No attempt was made to control for this factor. The "t" test was used to test for significant differences between families with one and two preschoolers and also with one and two teenagers.

In presenting the results in this section, tables were made for homemakers and spouses in relation to the various types of travel. The results for preschoolers and teenagers are presented in each table so that comparisons can be made between the different age groups.

Homemakers in the study did not spend less time in total travel when two preschoolers were present in the family compared to one preschooler (see Table 24). The difference was not significant at the .05 level. This finding was not in agreement with those of Domencich and McFadden (1975).

The total time spent in travel related to number of teenagers in the family was not consistent with Robinson's findings (1977). Homemakers spent

significantly more time in travel when there was one teenager in the family than when there were two teenagers. It should be pointed out, however, that this only measures the travel time of the homemaker, not that of the teenager. It is possible that when there are two teenagers in the family, the older teenager would be old enough to drive and therefore reduce some of the time parents spend chauffeuring their children.

Table 24

Mean Minutes Per Day of Homemakers' Total Travel Time by Age of Children

Age Group	N[a]	Mean	S. D.	Level of Significance
One preschooler	47	47.0	39.1	.54
Two preschoolers	72	52.2	52.4	
One teenager	22	62.2	51.9	.03
Two teenagers	35	35.7	26.7	

[a]N = Number of respondents.

Total travel time for the spouse in relation to preschoolers yielded results similar to those for the homemakers (see Table 25). More travel time was used when two preschoolers were in the family than when only one preschooler was present. Although the result was not significant at the

.05 level, it was significant at the .09 level. Spouses also spent more time for total travel when only one teenager was present in the family. The results, however, were not statistically significant.

Table 25

Mean Minutes Per Day of Spouses' Total Travel Time by Age of Children

Age Group	N[a]	Mean	S. D.	Level of Significance
One preschooler	47	56.6	38.1	.09
Two preschoolers	72	71.4	38.0	
One teenager	22	65.3	53.7	.33
Two teenagers	35	52.8	31.2	

[a]N = Number of respondents.

Homemakers' travel time for leisure activities related to number of preschoolers in the family did not prove to be statistically significant at the .05 level (see Table 26). Homemakers with two preschoolers used more travel time for leisure activities than did homemakers with only one preschooler in the family.

Homemakers in one teenager families used more travel time for leisure activities than homemakers with two teenagers. The difference was not significant.

Table 26

Mean Minutes Per Day of Homemakers' Leisure Travel Time by Age of Children

Age Group	N[a]	Mean	S. D.	Level of Significance
One preschooler	47	14.2	23.3	.17
Two preschoolers	72	22.8	44.8	
One teenager	22	21.9	45.9	.24
Two teenagers	35	9.6	19.7	

[a]N = Number of respondents

When analyzing travel time used by spouses for leisure activities in relation to age of children, it was noticed that spouses with two preschoolers also used more time for leisure related travel than spouses with only one preschooler (see Table 27). The difference was not statistically significant.

Spouses with one teenager used a larger amount of travel time for leisure activities when compared to spouses with two teenagers. The difference was not significant.

Table 27

Mean Minutes Per Day of Spouses' Leisure Travel Time by Age of Children

Age Group	N[a]	Mean	S. D.	Level of Significance
One preschooler	47	12.5	25.1	.27
Two preschoolers	72	19.5	44.7	
One teenager	22	21.9	45.9	.24
Two teenagers	35	9.6	19.7	

[a]N = Number of respondents.

Homeamkers' travel time for household duties in relation to age of children revealed very little difference in families with one and two preschoolers (see Table 28), with a difference of just .4 minutes. When the amount of travel time for household duties of homemakers with one teenager was compared to that of homemakers with two teenagers, it was found that homemakers with two teenagers spent slightly less time traveling. There was, however, little difference in the amount of time spent traveling by the women in the four groups studied. This could indicate that household travel time is relatively fixed.

Table 28

Mean Minutes Per Day of Homemakers' Household Travel Time by Age of Children

Age Group	N[a]	Mean	S.D.	Level of Significance
One preschooler	47	16.1	15.9	.90
Two preschoolers	72	16.5	18.6	
One teenager	22	15.4	11.7	.36
Two teenagers	35	12.1	14.5	

[a]N = Number of respondents.

The amount of travel time of spouses for household duties in relation to age of children varied little when comparing one preschooler families to that of two preschooler families (see Table 29). The difference was not significant at the .05 level. Again it must be pointed out that husbands did not participate in much household work and, therefore, travel time for this activity was naturally very small.

Spouses' travel time for household duties did not vary much when comparing one teenager families to families where two teenagers were present. The time difference amounted to only .5 minutes per day.

Table 29

Mean Minutes Per Day of Spouses' Household Travel Time by Age of Children

Age Group	N[a]	Mean	S. D.	Level of Significance
One preschooler	47	6.3	10.2	.81
Two preschoolers	72	6.8	11.5	
One teenager	22	6.7	7.4	.86
Two teenagers	35	6.2	9.7	

[a]N = Number of respondents.

Education of homemaker and spouse. To determine if the level of education had any effect on the amount of travel time, an analysis of variance was run on homemakers' level of education in relation to travel time and spouses' level of education in relation to travel time. Education was divided into three levels for this analysis. Travel time analyzed was total travel time, travel time for leisure activities and household travel time.

When comparing total travel time it was interesting to note that the least amount of travel time was recorded by homemakers and spouses in the category "some college education." There were no statistically significant differences for homemakers or spouses (see Table 30).

Table 30

Mean Minutes Per Day of Total Travel Time

by Educational Level

Level of Education	Homemakers			Spouses		
	N[a]	Mean	S. D.	N[a]	Mean	S. D.
High school diploma or less	96	52.5	51.5	63	65.9	44.0
Some college	71	45.3	35.4	67	60.7	46.1
College degree(s) or professional training	43	49.1	44.4	80	63.6	55.4
Level of significance		.58			.83	

[a]N = Number of respondents

Leisure travel time in relation to educational levels did not prove to be statistically significant either. Homemakers with some college education used the least amount of travel time for leisure activities while spouses with some college education used the most travel time for leisure activities (see Table 31).

When household travel time was analyzed in relation to educational level, there were no significant differences for either homemaker or spouse. The travel time related to household tasks by women was, in all three groups, larger than that of men (see Table 32).

Table 31

Mean Minutes Per Day of Leisure Travel Time

by Educational Level

Level of Education	Homemakers N[a]	Homemakers Mean	Homemakers S. D.	Spouses N[a]	Spouses Mean	Spouses S. D.
High school diploma or less	96	19.8	43.3	63	12.0	25.3
Some college	71	12.8	23.8	67	17.6	42.9
College degree(s) or professional training	43	13.7	28.8	80	14.5	32.8
Level of significance		.38			.64	

[a]N = Number of respondents.

Table 32

Mean Minutes Per Day of Household Travel Time

by Educational Level

Level of Education	Homemakers N[a]	Homemakers Mean	Homemakers S. D.	Spouses N[a]	Spouses Mean	Spouses S. D.
High school diploma or less	96	16.7	15.6	63	6.2	8.4
Some college	71	15.1	17.6	67	6.3	10.8
College degree(s) or professional training	43	18.3	21.0	80	6.8	11.6
Level of significance		.62			.93	

[a]N = Number of respondents.

Family income. The families in the sample were grouped into three levels by total family income. An analysis of variance was used to determine if there was a significant difference between the three income groups and the amount of time they used for travel purposes. Time analyzed was total travel time, time spent traveling related to household activities, and travel time for leisure activities.

Although the results were not significant at the .05 level, it was interesting to note that the number of minutes used for total travel time did increase for both the homemaker and spouse as the family income increased (see Table 33). These results agreed with those reported by other researchers (Grier, 1978; Hannon, 1978; Hogan, 1977; 1979; Owen, 1966; Robinson, 1977).

Table 33

Mean Minutes Per Day of Total Travel Time

by Income Level

Income	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
Low--under $10,000	29	44.3	34.3	53.7	37.3
Medium--$10,000-$19,999	108	48.7	48.5	63.4	51.3
High--$20,000 and over	67	53.0	42.3	69.1	51.1
Level of significance		.65		.37	

[a]N = Number of respondents.

Another interesting finding was that as the family income increased from the low to moderate level, the amount of time spent on travel related to leisure also increased. This might be an indication that as the family income increased there was more money available for leisure activities that involved travel. The amount of time spent on leisure travel decreased, however, as the family income increased from the moderate to the highest level. This could indicate that there was less time for leisure activities or that more of the leisure activities were at home or closer to home (see Table 34). In analyzing the leisure time of these same 210 families, Swapp (1979) found no significant differences in time spent in leisure activities by families of different income levels.

Table 34

Mean Minutes Per Day of Leisure Travel Time

by Income Level

Income	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
Low--under $10,000	29	15.2	20.8	13.4	20.9
Medium--$10,000-$19,999	108	17.8	39.0	16.9	39.2
High--$20,000 and over	67	15.2	34.4	12.9	32.2
Level of significance		.87		.73	

[a]N = Number of respondents.

There did not seem to be a consistent trend when household travel time was related to income (see Table 35). However, the high income husbands and wives spent more time on this type of travel time than did the other two groups.

Table 35

Mean Minutes Per Day of Household Travel Time

by Income Level

Income	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
Low--under $10,000	29	16.9	13.0	5.0	8.8
Medium--$10,000-$19,999	108	15.6	18.6	6.7	11.2
High--$20,000 and over	67	17.6	17.5	7.1	10.3
Level of significance		.77		.66	

Motor vehicles owned by the family. The families in the sample responded to a question regarding how many motor vehicles were owned and used by the family for transportation purposes. The number owned varied from zero to the category "seven and over." The mode was two vehicles per family (see Table 36).

Table 36

Motor Vehicle Ownership

Number	Urban		Rural	
	N[a]	%	N[a]	%
0	-	-	1	1.0
1	19	18.1	24	22.9
2	73	69.5	53	50.5
3	6	5.7	19	18.1
4	5	4.8	4	3.8
5	1	1.0	2	1.9
6	-	-	-	-
7+	1	1.0	2	1.9

[a]N = Number of respondents.

In this study, all but one family owned at least one motor vehicle and in that family both the homemaker and spouse were blind and, therefore, not able to drive. The Ford Foundation (1974) reported that in 1972-73, 80% of all households in the United States owned at least one motor vehicle and 44% owned two or more. In our sample, 82% of the urban and 76% of the rural families owned two or more vehicles. This could be indicative of the dependence Utahns have on private motor vehicles for transportation purposes.

The number of motor vehicles used by the family for transportation was divided into four categories for statistical analysis. An analysis of variance was used to determine if there was a significant difference between the number of motor vehicles owned and the amount of time used for travel. There were no significant differences at the .05 level. Generally, however, the number of minutes used for travel did increase as the number of motor vehicles owned by the family increased (see Table 37). This is in agreement with Hannon (1978). The increase was larger for women than for men.

Table 37

Mean Minutes Per Day of Total Travel Time

by Motor Vehicle Ownership

Motor Vehicles	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
None	1	25.0	-	27.5	-
One	43	42.7	39.4	63.4	46.8
Two	126	50.1	37.1	63.4	45.3
Three +	40	54.9	66.4	64.1	62.9
Level of significance		.59		.91	

[a]N = Number of respondents

When comparing the families with one motor vehicle to those with three or more, the amount of time spent on travel for leisure activities nearly doubled for both the homemaker and spouse (see Table 38). The differences between the time spent traveling related to leisure and number of motor vehicles owned was not statistically significant.

Table 38

Mean Minutes Per Day of Leisure Travel Time

by Motor Vehicle Ownership

Motor Vehicles	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
None	1	-	-	10.0	-
One	43	14.6	30.3	12.4	28.7
Two	126	13.9	21.8	13.0	26.0
Three +	40	25.5	62.5	22.9	56.6
Level of significance		.29		.43	

[a]N = Number of respondents.

When the family only owned one motor vehicle, the spouse spent more time on household errands than when they owned two or more. The difference, however, between one motor vehicle and three or more motor vehicles in the family was just 2 minutes. The homemaker spent the most time on household task related travel when the family owned two motor vehicles which could

mean that both the husband and wife had a vehicle at their disposal. The smallest amount of time spent in travel related to household tasks were recorded by the families with three or more motor vehicles. This could suggest that a teenager might be driving one of the vehicles and helping with household errands (see Table 39).

Table 39

Mean Minutes Per Day of Household Travel Time

by Motor Vehicle Ownership

Motor Vehicles	N[a]	Homemakers		Spouses	
		Mean	S. D.	Mean	S. D.
None	1	10.0	-	17.5	-
One	43	13.8	18.5	7.2	12.8
Two	126	18.4	17.9	6.6	10.0
Three +	40	13.5	14.2	5.2	8.9
Level of significance		.27		.60	

[a]N = Number of respondents.

Additional Findings

Respondents were asked to fill out a questionnaire which included, among other information, questions pertaining to the chauffeuring of other members of the family and the modes of transportation used during the past

7 days (see Appendix B). Data from the responses to these questions were included to give insight into the travel time of the families in the sample.

Chauffeuring

It should be noted that the means reported are only for trips chauffeuring another member of the household. They do not include trips for a shared activity.

1. On how many of the last 7 days did any household member chauffeur another household member to and/or from the doctor, dentist, or barber?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban		73	27	5					
Rural[b]		80	20	4					

[a]N. A. = Not applicable. (Applies to all questions in Additional Findings.)
[b]One rural family did not answer questionnaire. (Applies to all questions in Additional Findings.)

2. On how many of the last 7 days did any household member chauffeur another household member to and/or from school or classes?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	2	82	10	4	2	1	2	2	
Rural[b]		86	5	3	2	1	7		

3. On how many of the last 7 days did any household member chauffeur another household member to and/or from school or classes?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban		64	12	10	6	4	6	1	2
Rural[b]		63	12	8	4	3	14		

4. On how many of the last 7 days did any household member chauffeur another household member to and/or from a social function?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	1	60	23	14	6	1			
Rural[b]		78	18	3	1	1	2		1

5. On how many of the last 7 days did any household member chauffeur another household member to and/or from an organization, including church?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban		51	24	16	11	1	1	1	
Rural[b]		47	30	15	10	1			1

6. On how many of the last 7 days did any household member chauffeur another household member to and/or from an educational or athletic activity?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban		68	12	16	5	3	1		
Rural[b]		80	16	2	1	1	3	1	

7. On how many of the last 7 days did any household member chauffeur another household member to and/or from a store?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban		38	27	19	17	2	1	1	
Rural[b]		58	27	9	6	2		1	1

When combining the means of questions 1 through 7 for both groups, it was found that there was an average of 5.214 trips per week when one member of the household chauffeured another member.

Mode of Transportation

Respondents listed on a questionnaire what types of transportation had been used for the past 7 days. The actual figures are used for each group.

1. On how many of the last 7 days was the family car used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban					1	2	1	9	92
Rural[b]	2		2	2	1	3	4		90

2. On how many of the last 7 days was the company car used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	10	71	1				5	2	16
Rural[b]	48	14	3	3	2		8	6	20

3. On how many of the last 7 days was the school bus used by one or more household members for transportation?

	N.A.	0	1	2	3	4	5	6	7
Urban	11	72	3			2	15	1	1
Rural[b]	59	26	2	1	1	4	11		

4. On how many of the last 7 days was a car pool used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	8	81	3	2	2	3	5		1
Rural[b]	68	22	5	2	4	1	2		

5. On how many of the last 7 days was the city bus used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	3	86	6	6	1		2	1	
Rural[b]	84	20							

6. On how many of the last 7 days was the city taxi used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	3	101			1				
Rural[b]	83	21							

7. On how many of the last 7 days was a bicycle used by one or more household members for transportation?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	2	61	8	6	5	8	6	1	8
Rural[b]	20	42	9	4	6	1	3	1	18

8. On how many of the last 7 days was an other form of transportation used by one or more household members?

	N.A.[a]	0	1	2	3	4	5	6	7
Urban	6	95			1	1	1		1
Rural[b]	12	73	7	1	1	3	5	2	4

The information obtained from the questionnaire clearly indicated that the family car was the most common means of transportation and that the families studied were very dependent on the automobile as a means of transportation. It was interesting, however, to note how often company cars and bicycles were also used. The two least used modes of transportation were the city bus and the taxi. A possible reason for this is that in Washington and Iron Counties, where the rural sample lived, public transportation is extremely limited. Although public transportation is more available in Salt Lake County, it is still limited compared to large metropolitan cities.

SUMMARY AND CONCLUSIONS

The purpose of this study was to analyze time used for travel by the homemaker and spouse in two-parent/two-child families.

The sample consisted of 210 randomly selected families. Half of the sample, from Washington and Iron Counties, was considered rural. The other half, from Salt Lake County, was considered urban.

Data were analyzed according to environmental factors which included day of the week, geographic location, and season of the year; and family characteristics which included age of children, education of homemaker and spouse, family income, and number of motor vehicles owned.

Summary

Purpose of the Travel

Results of this analysis indicated that homemakers used approximately 49.39 minutes per day for travel and spouses used 63.38 minutes.

The largest block of travel time for spouses, 30.54 minutes per day, was for the purpose of paid employment. Homemakers used their largest amounts of travel time for travel related to household duties and leisure time activities, 16.5 and 16.2 minutes per day, respectively.

Day of the Week

Two statistically significant results--household travel time and travel for paid employment--were found for homemakers in relation to time used for travel and day of the week. There were statistically significant results in two categories for spouses; travel time by day of the week related to paid employment, and to organizational participation.

Geographic Location

Some statistically significant results were found when travel time in relation to urban-rural differences was analyzed. Homemakers had only one significant activity category, organizational participation. Spouses recorded significant differences in the categories of paid employment and eating.

Season of the Year

When travel time in relation to the season of the year was analyzed, there was only one statistically significant category, organizational participation for the spouses. There were no significant results found for the homemakers in relation to season of the year.

Age of Children

There was only one statistically significant result when age of children was analyzed in relation to amount of time used for travel by homemakers and spouses. This category was total travel time for the homemakers

when one teenager was present in the family. None of the analyses of the spouses' travel time produced significant results.

Education of Homemaker and Spouse

No significant differences for either the homemaker or the spouse were found when educational level was related to time used for travel.

Family Income

No statistically significant differences were found when amount of time used for travel was analyzed in relation to income level.

Motor Vehicles Owned by the Family

There were no statistically significant differences found when the number of motor vehicles owned by the family was analyzed according to the amount of time spent for travel by either homemaker or spouse.

Limitations

Limitations for this study include the following:

1. The housewife recorded the time use for all family members. Inaccurate information could have been recorded for other household members.

2. Only two-parent/two-child families were used. This is not the typical family size for the state of Utah.

3. Only the travel time of the homemaker and spouse were analyzed. Travel time of children was not included in this study.

4. The age span of the respondents studied was restricted due to the limitation of having two children living at home.

5. All results were presented in minutes and seconds and, therefore, might give the impression of appearing more precise than they actually are.

6. Only a limited number of independent variables were used. Additional variables could have affected travel time.

7. Telephone lists were used to verify names and those not listed in the telephone books were eliminated. This could be a possible source of bias.

Suggestions for Future Studies

Suggestions for further studies include the following:

1. Travel time for all members of the family should be included to provide a more accurate measure of the actual time used for travel by families.

2. Families of different sizes could be studied to determine if family size makes a difference in the amount of time used for travel, in total and in relation to different activities.

3. As the price of gasoline has increased greatly during the past year, a study of the same families could be carried out to determine whether time used for travel has decreased.

4. It would be interesting, in light of rising fuel costs, to determine if modes of transportation have changed and if public transportation and car pooling are being used more now.

5. A study could be carried out to analyze the impact of rising fuel costs on travel done in relation to various activities. Increasing gasoline prices could have reduced discretionary travel, such as travel related to leisure activities, more than travel related to employment.

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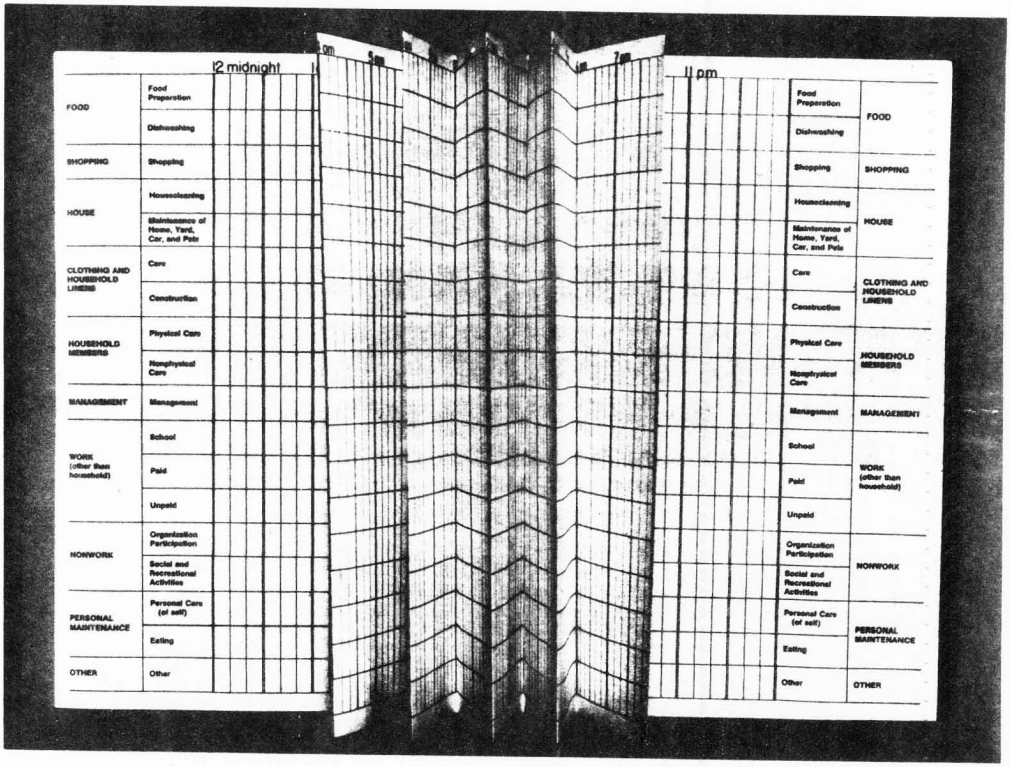
APPENDIXES

Appendix A: Time Diary


12 midnight
11 pm
FOOD
Food Preparation
Dishwashing
SHOPPING
Shopping
HOUSE
Housecleaning
Maintenance of Home, Yard, Car, and Pets
CLOTHING AND HOUSEHOLD LINENS
Care
Construction
HOUSEHOLD MEMBERS
Physical Care
Nonphysical Care
MANAGEMENT
Management
WORK (other than household)
School
Paid
Unpaid
NONWORK
Organization Participation
Social and Recreational Activities
PERSONAL MAINTENANCE
Personal Care (of self)
Eating
OTHER
Other

Appendix B: Questionnaire

HOUSEHOLD CODE: DO NOT WRITE IN THIS SPACE

112

Would you give me information about the meals prepared at home yesterday, whether they were eaten at home or elsewhere. If the total time for preparing the meal or snack was less than 3 minutes, do not include it. Start with the first meal of the day.

1. Recording Day I ○ Recording Day II ○
2. What meal was it? 1 morning 2 noon 3 evening 4 snack 5 packed lunch 6 other
3. How many persons were served? 1 2 3 4 5 6 7 8 9+
4. Time preparation started

5. Number of items prepared	6. What were the items prepared or eaten at this meal?	7. How much preparation was required for each item? None / Very limited / Simple / Moderate / Extensive	8. What kind of cooking was done? No cooking done / Top of range / Oven / Broiler / Microwave / Charcoal / Small Appliance
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		1 2 3 4 5	1 2 3 4 5 6 7

9. Recording Day I ○ Recording Day II ○
10. What meal was it? 1 morning 2 noon 3 evening 4 snack 5 packed lunch 6 other
11. How many persons were served? 1 2 3 4 5 6 7 8 9+
12. Time preparation started

13. Number of items prepared	14. What were the items prepared or eaten at this meal?	15. How much preparation was required for each item? None / Very limited / Simple / Moderate / Extensive	16. What kind of cooking was done? No cooking done / Top of range / Oven / Broiler / Microwave / Charcoal / Small Appliance
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		1 2 3 4 5	1 2 3 4 5 6 7

HOUSEHOLD CODE:

1. Yesterday did you or any household member eat a meal away from home that had NOT been prepared at home?
YES NO

2. IF YES, how many times were meals eaten away? 1 2 3 4 5 6 7 8 DK

(USE SEPARATE COLUMNS FOR EACH MEAL EATEN, WHETHER BY ONE OR MORE THAN ONE FAMILY MEMBER)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. Recording Day I Recording Day II		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
4. Starting with the first meal eaten away was it? a morning meal a noon meal an evening meal a snack	(1) (2) (3) (4)	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5. How many household members ate this meal?		1–8	1–8	1–8	1–8	1–8	1–8	1–8	1–8	1–8
6. From which of the following was this food obtained? fast food school cafeteria industrial cateteria private cafeteria a restaurant private club or resort social gathering friend's or relative's house D.K. ____________	 (1) (2) (3) (4) (5) (6) (7) (8) (9)	1–9	1–9	1–9	1–9	1–9	1–9	1–9	1–9	1–9
7. What was the approximate cost including the tip, of this meal for all household members who ate it?										

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114

HOUSEHOLD CODE

1. Do you own or rent your home?
   Own or buying Rent Other _____

2. About what year was your home built? _____

3. Is your household responsible for care of the yard? YES NO
   IF YES, what is the approximate size of the lot that you take care of? _____

4. How many rooms are in your home? (DO NOT COUNT BATHROOMS OR HALLS) 0 1 2 3 4 5 6 7 8 9+

5. How many full bathrooms do you have? 0 1 2 3 4+ 6. How many partial bathrooms do you have? 0 1 2 3 4+

7. What is the main source of heat for your home? Electric Gas Oil Coal Wood Other D.K.

8. What is the main source of heat for cooking? Electric Gas Oil Coal Wood Other

9. How many motor vehicles do you have that are used for transportation by members of your household? 0 1 2 3 4 5 6 7+

10. How many drivers are in your household? 0 1 2 3 4 5 6 7+ 11. Do you have any household pets? YES NO

12. What is approximate size of your refrigerator(s)?

a. Refrigerator 1	b. Refrigerator 2
small (less than 7 cu. ft.)	small (less than 7. cu. ft.)
medium (7-12 cu. ft.)	medium (7-12 cu. ft.)
large (12.1-19 cu. ft.)	large (12.1-19 cu. ft.)
extra large (19.1+ cu. ft.)	extra large (19.1+ cu. ft.)
not applicable	not applicable

13. Is your refrigerator(s) unit:

a. Refrigerator 1	b. Refrigerator 2
1 door model?	1 door model?
2 door model?	2 door model?
not applicable	not applicable

14. Is your refrigerator/freezer a frost-free model?

a. Refrigerator 1	b. Refrigerator 2
Yes, refrigerator only	Yes, refrigerator only
Yes, both freezer/ refrigerator	Yes, both freezer/. refrigerator
Not applicable	Not applicable
No	No

15. Do you have a separate freezer(s) (free-standing)? YES NO

16. IF YES, is your freezer space
    small (less than 12 cu. ft.)?
    medium (12-19 cu. ft.)?
    large (19.1+ cu. ft.)?
    not applicable

17. IF 1 OR MORE FREEZERS, ASK:
    How many of your free-standing freezers are frost-free? 0 1 2 3 4+

18. Is your oven continuous cleaning? self cleaning? neither?

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YEAR

SQ. FEET

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115

HOUSEHOLD CODE

1. On how many of the last seven days were the following done by someone in your household?

canning, pickling, making jams, and jellies
freezing food
preparing food for another day
shopping for food

2. On how many of the last seven days have the following been consciously used to avoid some dishwashing or laundry?

disposable cooking or serving dishes
alumimum foil or disposable baking pans
disposable diapers
disposable household textiles

3. Do you have a	YES	NO	4. IF YES, on how many of the last 7 days has it been used for your houeshold work?
microwave oven?			
dishwasher?			
garbage disposer?			
trash compactor?			
washing machine--automatic?			
washing machine--nonautomatic?			
clothes dryer?			
sewing machine?			
vacuum cleaner?			
power garden and/or yard equipment?			
air-conditioner?			

IF YES, identify: Central 1 2 3+ room units

5. How many loads of clothes were washed on Day I
on Day II
during last 7 days

6. Where was washing done?

Day I home someone else's house apartment house laundromat other
Day II home someone else's house apartment house laundromat other

7. On how many of the last seven days did someone in your household:
take items to commercial laundry or dry cleaner?
use coin operated laundry or dry cleaning equipment?
do hand washing?
iron?
do sewing?

116

HOUSEHOLD CODE:

1. On how many of the last seven days were the following done by a household member for your family:

shopping for items or services priced over $100?	0	1	2	3	4	5	6	7 NA
special housecleaning?	0	1	2	3	4	5	6	7 NA
painting, redecorating?	0	1	2	3	4	5	6	7 NA
washing or waxing motor vehicles?	0	1	2	3	4	5	6	7 NA
repairing appliances?	0	1	2	3	4	5	6	7 NA
working in the yard, garden, including harvesting?	0	1	2	3	4	5	6	7 NA
working on outside areas of the house or property?	0	1	2	3	4	5	6	7 NA

2. On how many of the last seven days was any household member ill? 0 1 2 3 4 5 6 7

3. On how many of the last seven days did any household member chauffeur another household member:

to and/or from doctor, dentist or barber?	0	1	2	3	4	5	6	7
to and/or from paid work?	0	1	2	3	4	5	6	7
to and/or from school or classes?	0	1	2	3	4	5	6	7
to and/or from a social function?	0	1	2	3	4	5	6	7
to and/or from an organization, including church?	0	1	2	3	4	5	6	7
to and/or from an educational or athletic activity?	0	1	2	3	4	5	6	7
to and/or from a store?	0	1	2	3	4	5	6	7

4. On how many of the last seven days were the following modes of transportation used by one or more household members:

family car?	0	1	2	3	4	5	6	7 NA
company car?	0	1	2	3	4	5	6	7 NA
school bus?	0	1	2	3	4	5	6	7 NA
car pool?	0	1	2	3	4	5	6	7 NA
city bus?	0	1	2	3	4	5	6	7 NA
taxi?	0	1	2	3	4	5	6	7 NA
bicycle?	0	1	2	3	4	5	6	7 NA
other, ? _____	0	1	2	3	4	5	6	7 NA

5. In the last seven days, did you or any family member have someone from outside the household do any of the following:	YES	NO	NA	6. How many hours did it take?	7. How much did it cost?
take care of your children -- in your home?					
take care of your children -- in someone else's home?					
take care of your children -- in day care center?					
take care of other household member(s)?					
do housecleaning?					
do lawn or yard work?					
do painting, redecorating?					
service appliances?					
work on your motor vehicles?					
do house maintenance?					
other services? _____					

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117

HOUSEHOLD CODE:

1. How many of your children, 12-17 years of age, worked for pay last week? 0 1 2 3 4 5 6 NA

If none or NA, go to next page.

		CHILD I	CHILD II	CHILD III
2.	What is the age and sex of the child?	M 12 13 14 F 15 16 17	M 12 13 14 F 15 16 17	M 12 13 14 F 15 16 17
3.	What kind of work did he/she do?			
4.	How many hours did he/she work last week?	_____hrs	_____hrs	_____hrs
5.	Approximately how much did he/she earn last week?	$_____	$_____	$_____

		CHILD IV	CHILD V	CHILD VI
2a.	What is the age and sex of the child?	M 12 13 14 F 15 16 17	M 12 13 14 F 15 16 17	M 12 13 14 F 15 16 17
3a.	What kind of work did he/she do?			
4a.	How many hours did he/she work last week?	_____hrs	_____hrs	_____hrs
5a.	Approximately how much did he/she earn last week?	$_____	$_____	$_____

DO NOT WRITE BELOW THIS LINE--FOR OFFICE USE ONLY

WAGES

1.
2.
3.
4.

HOURS

1.
2.
3.
4.

WAGES

5.

HOURS

5.

WAGES

6.
6.

PB 8370 CBF (7980)

118

HOUSEHOLD CODE:

(FOR EACH ADULT ASK THE FOLLOWING QUESTIONS)

	HOMEMAKER	ADULT II	ADULT III
1. What was the highest grade in school you completed? (IF DEGREE MENTIONED NOTE)			
2. Last week were you employed? FOR EACH EMPLOYED ASK:	YES NO	YES NO	YES NO
3. Was this for pay? (CODE 1) For pay, but not at work, example, illness or vacation? (CODE 2) Without pay, example, family farm or business? (CODE 3)	1 2 3 4	1 2 3 4	1 2 3 4
4. What kind of work did you do? (IF MORE THAN 1 JOB, ASK FOLLOWING QUESTIONS ABOUT THE FIRST OR PRIMARY JOB			
5. What kind of industry or business were you employed in?			
6. How many hours did you work for pay last week? H II III			
7. What is the usual number of hours you work for pay a week?			
8. Are you: an hourly wage earner? (CODE 1) salaried? (CODE 2) on commission? (CODE 3) self-employed? (CODE 4) other?_____ (CODE 5) GO TO Q. 9 GO TO Q. 10	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
9. What is your hourly wage rate?	$_____	$_____	$_____
10. If you were salaried, self-employed, or on commission, what amount did you earn last week? (USE INCOME BEFORE DEDUCTIONS)	$_____	$_____	$_____

H II III

119

HOUSEHOLD CODE:

	HOMEMAKER	ADULT II	ADULT III
1. Did you have more than one paid job last week? (IF NO, GO TO Q. 9)	YES NO	YES NO	YES NO
2. (IF YES,) What kind of work was this?			
3. What industry or business was it in?			
4. How many hours did you work for pay last week on this job?	10 20 30 40 50 60 70 80 90	10 20 30 40 50 60 70 80 90	10 20 30 40 50 60 70 80 90
5. What is the usual number of hours you work for pay per week on this job?	10 20 30 40 50 60 70 80 90	10 20 30 40 50 60 70 80 90	10 20 30 40 50 60 70 80 90
6. For this second job are you: an hourly wage earner (CODE 1) salaried? (CODE 2) on commission? (CODE 3) self-employed? (CODE 4) other? (CODE 5) GO TO Q. 7 GO TO Q. 8	1 2 3 4 5	1 2 3 4 5	
7. What is your hourly wage for your second job?	$	$	$
8. If you were salaried, self-employed, or on commission for a second job, what amount did you earn last week? (USE INCOME BEFORE DEDUCTIONS)	$	$	$

9. If you worked without pay in family business or farm, how many hours did you work last week?	10 20 30 40 50 60 70 80 90	10 20 30 40 50 60 70 80 90	

10. Which category on this card represents the total income before taxes for your household in the past twelve months? This includes wages and salaries, net income from business or farm, pensions, dividends, interest, rent, Social Security payments and any other money received by members of your household?

BLOCK OUT ONE LETTER ONLY

A B C D E F G H I J K L M N DK

120

HOUSEHOLD CODE:_____

Were there unusual weather conditions that affected household members' time use?

on the 1st day _____

_____

on the 2nd day_____

_____

Were there any unusual physical conditions or situations regarding your residence that affected household members' time use?

on the 1st day _____

_____

on the 2nd day_____

_____

Were there any unusual activities of your family or household members that affected household members' time use?

on the 1st day _____

_____

on the 2nd day_____

_____

Are there any special situations in your home, for example: handicapped or chronically ill family members, that affected household members' time use?

_____

_____

_____

_____

Are there special ways your household members "save" time on household activities? _____

_____

_____

_____