

Volume and Characteristics of Intercity Travel During Winter 1963

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• PRELIMINARY estimates from the National Travel Survey, a part of the 1963 Census of Transportation, reveal that about 90 percent of all intercity travel during the first three months of 1963 was by highway, by automobile or bus. Roughly one-half of this highway travel was to places more than 100 miles away from home.

DEFINITION OF TERMS

"Intercity travel" for purposes of this paper is equated to the number of person-trips estimated by the National Travel Survey. A "trip" is defined as any travel in which one or more members of a household either (a) went out of town at least for one night, or (b) went to a place at least 100 miles away and returned home the same day.

Inasmuch as some trips were taken by only one member of a household, and other trips were taken by more than one member, two units of measure were used—"trip" and "person-trip". A person-trip represents the number of persons times the number of trips. For example, if Mr. Brown went to New York alone, his travel was counted as one trip and one person-trip; but if Mr. and Mrs. Brown went together, their travel was counted as one trip, but as two person-trips.

Those definitions have a direct bearing on the significance of the National Travel Survey data as measures of intercity travel. The inclusion of all overnight trips irrespective of distance or nature of destination may be too sweeping for some definitions of intercity. On the other hand, the limitation of one-day trips to those involving travel to places at least 100 miles away from home one-way clearly excludes short one-day intercity trips that doubtless are numerically large. If those short one-day trips had been included, the relative importance of highway transport would have exceeded the 90 percent mentioned earlier.

In this paper, the general measures of travel are based on person-trips. If the general measures had been based on the total number of trips (irrespective of size of party), the highway share would have been much lower because most automobile trips are taken by two or more members of the household, while most travel by common carrier involves only one person.

SURVEY METHODS

The basic information in the Travel Survey was obtained by personal interview at a probability sample of about 6,000 households in the United States. The interviewing was done shortly after April 1 to obtain the details about trips taken since "last New Years" (1, 2) and demographic information about each household.

Before discussing the highlights of the findings, a word of caution is appropriate. All of the data developed by the survey are based on a probability sample of households, and therefore are subject to sampling variability. The term "sampling variability" refers to the differences that would be expected between the results of this sample survey and the results that would have been obtained from a complete enumeration of all households. It does not include response errors that may arise from misinterpretation of questions, unwillingness or inability of people to give reliable answers, or similar sources of error.

Estimates of sampling variability are not available at this time, but will be computed and published at a later date. Furthermore, the preliminary data are subject to revision. In general, estimates based on a small proportion of the 6,000 households (such as percentage distributions of trips by households with annual incomes of more than \$15,000) are likely to have greater sampling errors than estimates based on a large proportion of the total households.

With respect to response error, an evaluation program was built into this survey to estimate the probable character and extent of errors arising from reliance upon a personal recollection of events. The author's personal impression is that the quality of response has been good; however, a final judgment should be reserved until the analysis of the evaluation program is completed.

DISTRIBUTIONS OF PERSON-TRIPS BY MEANS OF TRANSPORT

With respect to the distribution of person-trips by means of transportation, automobiles accounted for about 91 percent of the person-trips taken primarily for the purpose of visiting friends and relatives. The automobile share was slightly lower for other pleasure trips and trips for personal or family affairs. In contrast, the automobile share of business trips was substantially lower—about 78 percent of the person-trips for business was by automobile.

About one-half of all person-trips by automobile travel involved trips to places that were within a radius of 100 miles from home. Almost one-third of the automobile person-trips was to places between 100 and 200 miles from home, and the remaining 15 percent was for trips beyond a radius of 200 miles (including foreign trips).

As compared with other means of transportation, automobiles were the dominant mode in all of the broad mileage classes tabulated. The proportion of total person-trips taken by automobile ranged from about 92 percent for trips within a radius of 200 miles from home to 51 percent for trips beyond a 500 mile radius of home.

APPARENT RELATIONSHIP BETWEEN RELATIVE USE OF AUTOMOBILE AND DURATION OF TRIP

About 92 percent of all person-trips of one or two nights' duration were taken by automobile. The automobile share declined as the duration of the trip increased. The automobile share dropped to 80 percent for trips of three to five nights' duration; to 73 percent for trips of six to nine nights' duration; and to 62 percent for trips that lasted ten or more nights. Since time-duration probably is only moderately related to distance of trip, the decline in automobile use associated with an increase in duration of trip may be largely a reflection of competing demands for the automobile among members of the household who did not go on the trip. This is purely conjectural at this time, but it might be worthwhile to test this hypothesis.

INCIDENCE OF TRAVEL BY FAMILY INCOME CLASS AND KIND OF TRIP

Even during the winter months, the incidence of travel was widespread. The incidence was measured in terms of whether someone in the specified household took one or more trips during the first quarter of 1963. On that basis, trips were taken by about one out of three households in the nation. This varied substantially by income and by primary reason for trips (Table 1).

More specifically, about 24 percent of the households having incomes of less than \$2,000 annually took at least one trip, and their trips were almost exclusively for pleasure. At the other extreme, about 71 percent of the households with incomes in excess of \$15,000 took at least one trip. Of all households that took trips, about three-fourths of them took only pleasure trips, while the remaining quarter is about equally divided between those households that took trips only for business and those that took trips for both pleasure and business (that is, at least one pleasure and at least one other for business).

TABLE 1
INCIDENCE OF TRAVEL

Family Income Class	All Families	Families Taking No Trips	Families Taking Trips			
			Total	Pleasure	Business	Pleasure and Busi- ness Trips
All incomes	100	64	36	28	4	4
Under \$2,000	100	76	24	22	2	—
\$2,000 to \$3,999	100	73	27	24	2	1
\$4,000 to \$5,999	100	67	33	28	3	2
\$6,000 to \$7,499	100	55	45	35	6	4
\$7,500 to \$9,999	100	54	46	33	8	5
\$10,000 to \$14,999	100	47	53	29	13	11
\$15,000 and over	100	29	71	37	17	17
Income not available	100	73	27	23	2	2

FUTURE TABULATIONS PLANS

The next step in this program will be the tabulation of data for the second quarter in essentially the same manner as for the first quarter. Since the survey is breaking new ground, the processing program is being kept as flexible as possible, and advice will be appreciated concerning specific types of tabulations that will be of major public interest.

A detailed description of the layout of the four punch cards used in the survey is given in the Appendix to serve as a guide for analyzing the potential tabulations that can be run and for selecting the ones that are believed to be of broad, public interest. Incidentally, the information in the Appendix also may be useful for judging the feasibility and usefulness of special tabulations that may be prepared under the Bureau's general program for special services on a reimbursable cost basis.

The Bureau of the Census will be pleased to receive suggestions, especially with respect to the specific types of tables that are most urgently needed for general public purposes in the final publication.

REFERENCES

1. "National Travel Survey—Its Concepts and Methods." Transportation Division, Bureau of the Census, Washington (Aug. 1963).
2. "National Travel Survey—First Quarter 1963." Transportation Division, Bureau of the Census, Washington (Dec. 1963).

Appendix

CARD LAYOUT USED FOR RAW DATA INPUT

General:

Four interrelated IBM punch cards are used for raw data input.

Card 1—Household card—contains data for each household in the sample, irrespective of whether any trips were taken by the household. This card will be useful for tabulations that involve "no-trip" households as well as those that report one or more trips.

Card 2—Household-trip card—contains a positive identification or reference to the household card (1) so that each trip card can be matched with its household card, if information on both cards is needed for a specific tabulation. The trip card contains details concerning one reported trip. There will be one household-trip card for each trip reported.

Card 3—Person-trip card—carries details concerning each person on each trip, plus positive reference to the household (card 1) and the trip (card 2). There are as many person-trip cards as there are person-trips reported in the survey.

Card 4—Person-lodgings-and-States card—contains details for each person-trip with respect to the distribution of nights (excluding nights spent outside of the United States), by type of lodgings and by States, by type of lodgings and by States for each person-trip. Reference codes may be used to relate the details in card 4 with each of the other cards.

Card Layout Form: Card 1—Household Card

<u>Item</u>	<u>Description</u>	<u>Columns</u>
1	<u>Control number (household identification)</u>	2-11
	Household number—1 digit	
	PSU —3 digits	
	Rotation —1 digit	
	Segment —3 digits	
	Serial number —2 digits	
2	Residence city and State (7-digit geographic code).....	12-18
3	Number of autos owned	19
4	Occupation of head of household	20-21
5	Industry of head of household	22-23
6	<u>Trip control number:</u>	
	Total number of trips taken by household	24-25
	Number of business trips	26-27
	Number of trips for all other purposes	28-29
7	Interview quarter code	1
8	Family income	30-31
9	Population and SMSA information for residence city and State	32-33
10	Farm/nonfarm	34
11	Education of head of household	35-36
12	Census region and State and SMSA of origin	40-44
13	Household weight (expansion).....	45-49
14	Actual count of number of persons in household	50-51

One card to be punched for each household in the survey regardless of whether or not trips were taken by the household.

Card Layout Form: Card 2—Household-Trip Card

<u>Item</u>	<u>Description</u>	<u>Columns</u>
1	<u>Control number (household identification)</u>	2-11
	Household number—1 digit	
	PSU —3 digits	
	Rotation —1 digit	
	Segment —3 digits	
	Serial number —2 digits	

Card 2 (cont'd.)

<u>Item</u>	<u>Description</u>	<u>Columns</u>
2	Residence city and State (7 digit geographic code)	12-18
3	Trip number (2-digit consecutive number to identify trips, beginning with "01" for each quarter)	19-20
4	Destination city and State (7 digit geographic code if in U. S.).....	21-27
5	Purpose of trip (1-digit code)	28
6	Month trip ended (1-digit code).....	29
7	Number of persons on trip.....	30
8	Transport code (2-digit code).....	31-32
9	Length of trip: number of nights away from home	33-35
10	Interview quarter	1
11	Origin: Region and State)	36-37
	SMSA)	38-40
12	Destination: Region and State)	41-42
	SMSA)	43-45
13	Straight-line miles between origin and destination.....	46-49
14	Household weight (expansion)	50-54

One card to be punched for each trip taken by each household in the survey. If a household took three trips during the survey period, three Card 2(s) would be punched. If a household took no trips during the survey period, there would be no Card 2(s) punched for that household.

Card Layout Form: Card 3—Person-trip Card

<u>Item</u>	<u>Description</u>	<u>Columns</u>
1	Control number (household identification)	2-11
2	Trip number code	12-13
3	Line number of person on trip	14-15
4	Interview quarter code	1
5	Age	16-17
6	Race (i. e., white or non-white)	18
7	Sex	19
8	Relationship to head of household	20
9	Person weight (expansion)	21-25

One card to be punched for each person on each trip taken by each household in the survey. If a household took two trips during the quarter and one person went on one of the trips and five persons went on the other trip, six Card 3(s) would be punched for that household.

Card Layout Form: Card 4—Person States and Lodgings Card

<u>Item</u>	<u>Description</u>	<u>Columns</u>
1	Control number (household identification).....	2-11
2	Trip number	12-13
3	Line number on trip (identification of person on trip by "Line No." assigned by QHS)	14-15
4	<u>Overnight in States: Space is to be allowed for 8 States, each of which takes 5 columns: Census region and State—first two columns and three columns for number of nights in that State. So, the first State on the coding sheet is to be punched in column</u>	16-17
	and the number of nights spent in that State in column	18-20
	Second State where nights were spent	21-22
	Number of nights in that State	23-25
	etc. through 8 States, which will use columns up through	26-55
	NOTE: In most instances less than 8 States will be needed for one trip and the balance of the columns through 55 should be left blank. If more than 8 States are needed, use a trailer card.	
5	<u>Overnight in lodgings:</u>	
	Commercial (number of nights).....	56-58
	Friends and relatives (number of nights)	59-61
	Own cottage " " "	62-64
	In recreation area ... " " "	65-67
	En route (in auto, boat, plane, train, etc.)	68-70
	Other.....	71-73
	NOTE: In most instances, only one or two of these types of lodgings will be coded for one trip, in which case the other columns should be left blank.	
6	Person weight (expansion)	47-48
7	Interview quarter code	1

There will not be a Card 4 punched for persons on one-day trips, nor for persons on foreign trips where all nights and lodgings are spent outside of the U. S. There will be a Card 4 for each person on each trip where one or more nights were spent in States and lodgings in the U. S.