

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

**1990 NPTS DATABOOK
VOLUMES I AND II**

BASED ON DATA FROM THE
1990 NATIONWIDE PERSONAL TRANSPORTATION SURVEY (NPTS)

PREPARED BY:

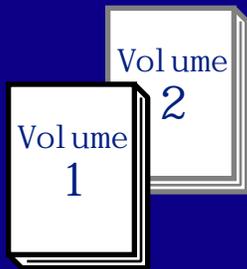
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OCTOBER 1994

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Chapters belonging to Volume 2 appear dimmed.

1990 NPTS Publications Series:

User's Guide for the Public Use Tape
(for tape or diskette users)

Summary of Travel Trends

Travel Behavior Issues in the 90's

1990 NPTS Databook

NPTS Urban Travel Patterns

NPTS Special Subject Reports

Abbreviations used in this report:

MSA—metropolitan statistical area

NPTS—Nationwide Personal Transportation Survey

PMT—person miles of travel

POV—personally operated vehicle/privately owned vehicle

VMT— vehicle miles of travel

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1. Report No. FHWA-PL-94-010A		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle 1990 NPTS Databook Nationwide Personal Transportation Survey			5. Report Date November 1993		
			6. Performing Organization Code		
7. Author(s) Patricia S. Hu, Jennifer Young Graphics: Christopher Gray			8. Performing Organization Report No.		
			10. Work Unit No. (TRAVIS)		
9. Performing Organization Name and Address Center for Transportation Analysis, Energy Division Oak Ridge National Laboratory P.O. Box 2008, Oak Ridge, Tennessee 37831			11. Contract or Grant No.		
			13. Type of Report and Period Covered		
12. Sponsoring Agency Name and Address Office of Highway Information Management Federal Highway Administration, HPM-40 Washington, D.C. 20590 Contract Manager: Susan Liss			14. Sponsoring Agency Code		
			15. Supplementary Notes For more information on the NPTS survey, contact the Office of Highway Information Management, Federal Highway Administration, HPM-40, (202) 366-0160, FAX (202) 366-7742. To obtain the public use data file on tape or diskettes, contact the Volpe National Transportation Systems Center, Cambridge, Massachusetts, (617) 494-2450, FAX (617) 494-3633.		
16. Abstract This report presents data on the amount, nature and characteristics of personal (non-commercial) travel by all modes of transportation in the U.S. The data is from a survey of individuals conducted throughout 1990. A large number of data relationships are presented and, therefore, the report is printed in two volumes. Volume I contains information on the survey itself, a comparison of estimates of miles of travel taken from different portions of the survey, data on households, drivers and vehicles, and an extensive chapter on person trips and person miles of travel by all modes of transportation. Volume II includes data on vehicle trips and vehicle miles of travel, journey-to-work trips, vehicle occupancy, long trips, commercial driving and highway accidents. To the degree possible, each chapter within the report is organized to present results in the order of:					
17. Key Words occupancy person trips/person miles of travel trips/travel vehicle trips/vehicle miles of travel vehicles			18. Distribution Statement This report is available from the Federal Highway Administration - see item 15.		
19. Security Classif. (of this report) Not applicable		20. Security Classif. (of this page) Not applicable		21. No. of Pages	22. Price

U.S. Department of Transportation
Federal Highway Administration

1990 NPTS Data book Volume I

Based on Data from the
1990 Nationwide Personal Transportation Survey (NPTS)

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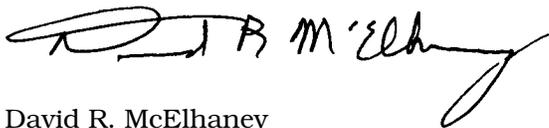
November 1993

Foreword

THE 1990 Nationwide Personal Transportation Survey (NPTS) provides a comprehensive look at personal travel in the U. S. The 1990 survey and the three earlier surveys in the NPTS series yield important data on the travel behavior of the American population. The NPTS series provides data to examine the relationship among social and demographic change, land development patterns, and transportation. This series is an essential tool for those seriously interested in understanding travel behavior and transportation planning issues.

The NPTS data is intended to address a number of issues in transportation, ranging in scope from the impacts of gas tax changes to trip generation rates needed to calibrate travel demand models. Along the way there are a number of issues that relate to how we, as a nation, are evolving — the changing roles of women and men within the family structure, the growth and increased mobility of the older driver population, the continued increase in vehicle ownership, and the continued decentralization of our metropolitan areas. This Databook presents the 1990 survey findings we believe to be most useful in analyzing these issues. Despite the volume and coverage of this Databook, the contents only touch on the data potential of the NPTS series.

We hope that this Databook and the other publications in the NPTS report series contribute to a better understanding of the complex relationships associated with America's travel behavior. Even as these data are published, FHWA, in a cooperative effort with other Department of Transportation agencies, is planning an update of this data series during calendar year 1995.



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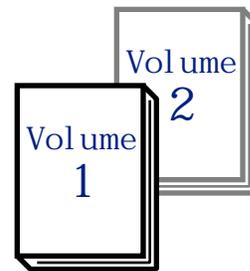
Acknowledgements

The authors wish to thank the following individuals for their careful review and valuable suggestions regarding this publication:

Alan Pisarski, Peter Koltnow, Charles Lave of the University of California at Irvine, Lee Schipper of Lawrence Berkley Laboratory, and Russell Lee, David Greene, Jerry Hadder, Shaw-Pin Miaou, Mike Bronzini, Glen Harrison, and Frank Southworth of Oak Ridge National Laboratory.

The contributions of these individuals are greatly appreciated.

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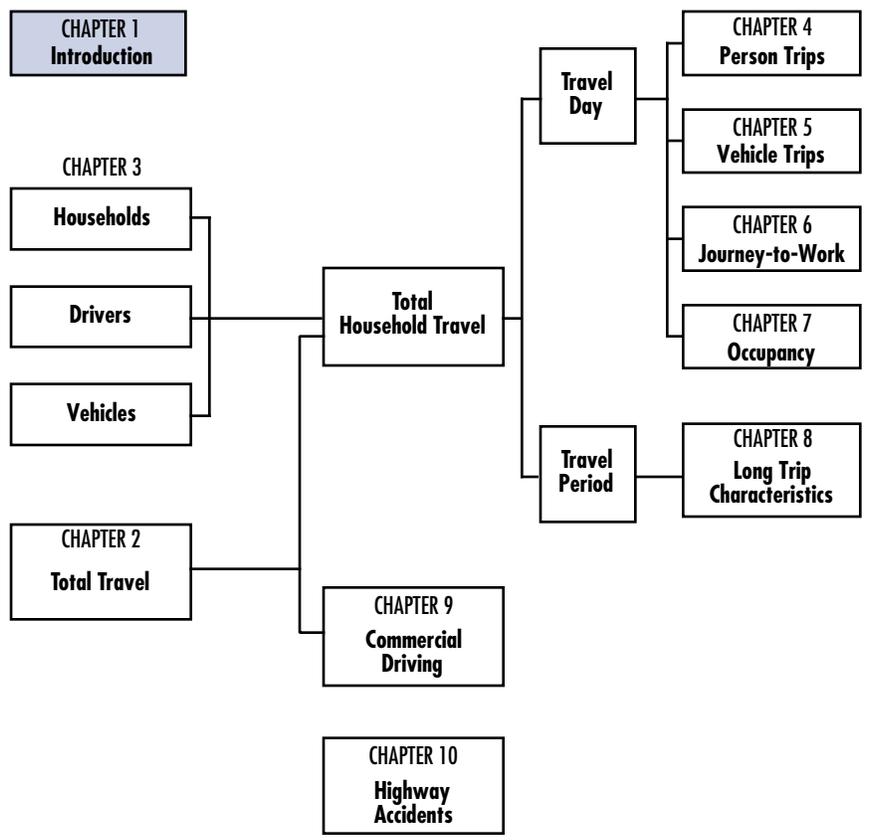
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Chapter 1

Introduction



Chapter 1 Introduction

1. History of the Survey

Policymakers rely on transportation statistics, including data on personal travel behavior, to formulate strategic transportation policies, and to improve the safety and efficiency of the U.S. transportation system. Data on personal travel trends are needed to examine the reliability, efficiency, capacity, and flexibility of the Nation's transportation system to meet current demands and accommodate future demands; to assess the feasibility and efficiency of alternative congestion-alleviating technologies (e.g., high-speed rail, magnetically levitated trains, intelligent vehicle and highway systems); to evaluate the merits of alternative transportation investment programs; and to assess the energy-use and air-quality impacts of various policies.

To address these data needs, the Department of Transportation (DOT) initiated an effort in 1969 to collect detailed data on personal travel. The 1969 survey was the first Nationwide Personal Transportation Survey (NPTS). The survey was conducted again in 1977, 1983, and 1990. The 1990 survey was co-sponsored by five DOT agencies: Federal Highway Administration (FHWA), Federal Transit Administration (FTA), National Highway Traffic Safety Administration (NHTSA), Office of the Secretary of Transportation (OST), and Federal Railroad Administration (FRA). The primary objective of the survey was to collect trip-based data on the nature and characteristics of personal travel. Commercial and institutional travel were not part of the survey.

2. Brief Description of the Survey Method

The target population for the 1990 NPTS consisted of all persons 5 years and older who resided in the 50 States and the

District of Columbia during the data collection period (March 1990 to March 1991). The survey design was based on a stratified two-stage cluster sampling plan. All counties in the United States were stratified into geographic areas based on (1) the nine U.S. Bureau of the Census divisions, (2) presence or absence of a subway or an elevated-rail public transportation system, and (3) three metropolitan size categories. To capture seasonal variation in travel, the sample was further stratified into four strata over a 12-month period. The sampling was also controlled by day of the week to capture the variation in personal travel during the course of a week.

The survey was conducted by telephone, using a computer-assisted telephone interviewing system (CATI). The advantages of CATI for the NPTS are that it

- allows the interviewers to enter data as the respondent is speaking;
- allows for a certain amount of on-line checking for data consistency (e.g., the respondent says that she made a trip in the pickup truck she owns; however, there is no pickup truck recorded as a household vehicle for this household);
- allows a number of edits, such as range checks, to be performed while the interview is in progress, thereby giving the interviewer the opportunity to correct problems while still on the phone with the respondent.

Households included in the NPTS sample were identified by random-digit-dialing procedures. Of more than 73,000 randomly selected telephone numbers, a total of 26,172 households were eligible to be included in the sample. From these, a total of 21,869 household interviews were completed, for a response rate of 84 percent.

A set of basic information on demographics, household composition, household vehicles, availability of public transportation, household location, and household income was first obtained to provide a general profile of American households. Data were then collected from each person, including education, driver information, typical travel activities, and accident experience, as well as data on all travel during the sampled day. From 54,313 eligible household residents, 47,499 personal interviews were completed, for a within-household response rate of 87 percent.

As in the previous surveys, in the 1990 survey everyone 14 years or older in the household was asked to report detailed information, such as mode and purpose, on every trip taken during the sampled day. This designated sampled day was referred to as the travel day.

Because longer trips are a rare event, the NPTS survey sponsors decided that trip data on a one-day sample would not be sufficient to adequately represent longer trips (defined in the NPTS as trips of 75 miles or more one way). Therefore, the recall period for longer trips was extended to 2 weeks and was referred to as the travel period.

Questions about trips taken by household members between the ages of 5 and 13 were answered by an adult household member serving as a proxy, or substitute, for the respondent. However, unlike the previous NPTS surveys, proxy interviews were allowed in the 1990 survey for household members 14 years or older under certain circumstances: if the person was (1) unavailable during the entire period allowed for interviewing the household; or (2) not contacted for interview after

repeated attempts. Proxy interviews for persons 14 and older occurred in approximately 17 percent of the cases in the 1990 survey. Trips and travel reported by proxies accounted for 11.8 percent of total vehicle trips and 15.1 percent of total vehicle miles of travel.

3. Data Editing Procedures

A number of quality control measures were used during data collection. In addition to on-site supervision to assist in problem solving, the interview process was monitored by a “silent” audiovisual system. Neither the interviewer nor the respondent was aware that the interview was being monitored. The monitoring system allowed the monitor to hear the interview and observe a copy of the interviewer’s computer screen to see how the responses were entered. The monitoring ensured that all data collection procedures were followed and that interviewing standards were met and also identified problems with the questionnaire or with the interview procedures.

In addition, a built-in real-time data editing procedure was used during the interview to perform range checks and logic and consistency checks. These checks allowed interviewers to correct erroneous data while the respondent was still on the phone and minimized the amount of imputation and estimation needed after data were collected. Postprocessing edits were also performed on all files (e.g., household, person, travel day). A more detailed description of the sample design and survey procedures is available in a Research Triangle Institute report.¹

¹ Research Triangle Institute, *1990 Nationwide Personal Transportation Survey: Report of Survey Operations*, RTI/256-4334-11. Research Triangle Park, North Carolina. October 1991.

4. Differences Among NPTS Surveys and Data Compatibility

Changes in travel behavior and characteristics can be determined by comparing NPTS data for 4 survey years: 1969, 1977, 1983, and 1990. However, to properly compare NPTS data over time, differences in survey methodology and terminology must be clearly identified and evaluated.

Unfortunately, changes in travel that may actually be a result of differences in methodology and terminology cannot be quantified without further detailed analysis.

The main differences in methodology and terminology between the 1990 NPTS and earlier surveys can be summarized as follows:

- The 1990 survey was a telephone survey, while the earlier surveys used in-person home interviews. Limiting the sample framework to households with telephones may result in an undercount of lower income households. Data from the 1990 Census indicate that 4.7 percent of U.S. households do not have telephones, and those households are largely found in the South and West.
- The 1990 survey allowed another household member (proxy) to report an individual's trips if the individual (14 and older) could not be contacted after several attempts, while the earlier surveys did not allow such proxy interviews. This type of proxy interviews, which occurred in approximately 17 percent of the cases in the 1990 survey, may contribute to a greater number of trips being reported than in earlier surveys. However, the increased tripmaking reported in the 1990 NPTS still falls short of trip generation rates in some urban travel surveys, even after the NPTS sample and procedures are adjusted to be comparable to the urban travel surveys. In terms of miles of travel, the percentage of total travel reported by proxy cannot be quantified unless a procedure is developed to

reweight the survey data without data reported by proxy.

- In the 1969 survey, "vehicles" were automobiles, station wagons, and passenger vans. In later surveys, vehicles also included pickup trucks, other light trucks, utility vehicles, motorcycles, and mopeds. Footnotes have been added throughout this publication to remind readers of this difference.
- Other terminology differences between the 1990 NPTS and earlier surveys are in the coverage of geographical boundaries, such as metropolitan statistical area and central city. Some tables in this Databook show considerable growth in households and workers in the central city between 1983 and 1990. This growth is primarily a result of a change in the definition of "central city" between the two survey years. See Appendix B for definitions of geographical boundaries used in the 1983 and 1990 surveys.
- The 1990 survey data were edited by CATI during the data collection process, while data from the earlier surveys were edited manually after the interview. The advantage of CATI over conventional home interviews is that many data inconsistencies and data quality problems can be immediately identified and corrected.
- The sample size of the surveys varied considerably: 15,000 households for the 1969 survey, 18,000 for 1977, 6,500 for 1983, and 22,000 for 1990. The small sample size in the 1983 survey (less than one-third that of 1990) contributed to a larger sampling error.

Recognition of the differences between the 1990 NPTS and earlier surveys are important because NPTS data show that the number of miles driven for personal travel increased by 50 percent between 1983 and 1990. This 50 percent increase reflects a combination of typical daily tripmaking

TABLE 1.1

PERSONAL VMT ESTIMATES, 1983 AND 1990
(MILLIONS)

	Highway Statistics ¹	NPTS ²	Percent NPTS of Highway Statistics Estimate
1983	1,403,696	1,076,169	77%
1990	1,864,386	1,613,153	87%
Percent increase	33%	50%	
¹ The sum of VMT for personal passenger vehicles (automobiles and motorcycles) and part of VMT for 2-axle 4-tire trucks as reported in Table VM-1. Based on data from the 1982 and 1987 Truck Inventory and Use		Surveys, the percentages of travel that pickups were used for personal transportation are extrapolated at 60.1% in 1983 and 73.3% in 1990.	
		² Includes travel period trips (75 miles or longer).	

(from travel day) and longer, intercity trips (from travel period). The NPTS data were compared with data reported in FHWA's annual publication, Highway Statistics, which show an increase of only 33 percent during the same period. The Highway Statistics data are based on traffic counts, and therefore some definitional differences exist between the NPTS and Highway Statistics.²

1.1 shows 1983 and 1990 personal VMT estimates by NPTS and by Highway Statistics. Data in Table 1.1 confirm the possibility that the 1983 NPTS underestimated VMT. The 1983 NPTS estimated VMT is 77 percent of that in Highway Statistics, while the 1990 NPTS is 87 percent of the corresponding Highway Statistics estimate.

One possible explanation for the large increase in personal vehicle miles of travel (VMT) between 1983 and 1990 is that the 1983 NPTS underestimated VMT because of its smaller sample size and less well-controlled survey implementation. Table

² Highway Statistics data include travel by all vehicles on the road, whereas NPTS data from travel day and travel period exclude "commercial driving" done by cab drivers, truck drivers, delivery persons, and others.

5. Limitations of Data on Transit

The NPTS dataset permits analysis of user characteristics, such as demographic and socio-economic characteristics, by various modes of transportation. These data are rarely available, especially on a national level, outside of NPTS. However, the reader is cautioned that the sample of transit trips in the 1990 NPTS may not be sufficient to draw specific conclusions regarding transit use, particularly assumptions regarding policy and funding of transit programs. The remainder of this section provides further information on issues that may contribute to the differences in transit use between NPTS and the Section 15 reporting system of the Federal Transit Administration (FTA).

Transit Trip Data

The NPTS data on transit use are based on information from 2,872 transit trips on travel day that were collected in the survey. The breakout of these trips is:

- 1,909 by bus,
- 639 by subway or elevated rail,
- 294 by commuter rail, and
- 30 by streetcar or trolley.

Using these 2,872 trips, the NPTS results differ considerably from data in the Section 15 reporting system. The reader is cautioned that differences in the way the data are generated between NPTS and Section 15 make direct comparisons difficult. The Section 15 data are based on reports submitted by each transit operator to the FTA as part of the requirements for receiving Federal funding. Transit operators generally obtain the Section 15 information using a combination of farebox receipts and on-board surveys. The Section 15 data do not include demographic or socio-economic characteristics of transit users or trip purpose, distance,

travel time or other trip attributes available from the NPTS. The basic NPTS/Section 15 comparisons for unlinked trips in 1990 are:

Unlinked Transit Trips (millions)			
	NPTS	Sec. 15	NPTS as % of Sec.15
Bus	4,352	4,576	95.1%
Rail/Subway	1,889	2,675	70.6%
Total Transit	6,241	7,250	86.1%

This table uses unlinked transit trips as a basis of comparison because the Section 15 data are reported as unlinked trips. An unlinked trip is basically defined as a boarding. For example, you take a bus and a subway to work; this is one linked trip and two unlinked trips (i.e., the bus boarding and the subway boarding). In NPTS, unlinked trips were collected only if one portion of the trip was on transit. Thus the NPTS data for modes other than transit are presented as linked trips. The data on person trips in Chapters 4 and 6 of this Databook uses the linked trips so that a comparable trip definition is used across modes.

These comparisons show that NPTS data report 6.24 billion unlinked transit trips, while Section 15 data report 7.25 billion unlinked trips, for a difference 1.01 billion unlinked trips. A likely explanation for this difference is that travel data collected by memory recall often result in an undercount. For example, the vehicle miles of travel generated from NPTS trip level data are 13% lower than the comparable vehicle miles estimate based on traffic counts. (See Section 4 of this Chapter on NPTS Data Comparability.)

This discussion has used the unlinked trip definition in order to seek comparability between NPTS and Section 15. However, the transit data presented in the remainder of this Databook are for linked trips. The following comparison of linked and unlinked transit trips in NPTS is provided to show how the two relate:

NPTS Transit Trip Counts (millions)			
	Unlinked	Linked	Ratio Unlinked/ Linked
Bus	4,352	3,543	1.23
Rail/Subway	1,889	1,349	1.40
Total Transit	6,241	4,892	1.28

Another issue regarding NPTS transit trips is that there clearly appears to be confusion on the part of the survey respondents between commuter rail and subway/elevated rail. Data from the 25 largest urbanized areas show that many trips were coded as commuter rail trips in an area where there was a subway/elevated rail system, but no commuter rail, such as Atlanta or Cleveland. Additionally, in areas that had both commuter rail and subway/elevated rail, the NPTS data show considerably more commuter rail trips than Section 15 and considerably fewer subway trips. This occurred most notably in New York, which has a sufficient proportion of the nation's transit trips to skew the national totals if subway/elevated rail trips are misclassified as commuter rail. Because of this confusion between commuter rail and subway, the transit trip data are categorized as:

Bus - which includes bus & streetcar,
and

Rail/Subway - which includes commuter
rail, subway and elevated rail.

Trips made by Amtrak are not considered to be public transit trips and are included in the "Other Modes" category, rather than the "Rail/Subway" category.

Coverage of Low-Income Households

There is concern that the NPTS data collection resulted in an undercount of low-income households. As a result, there may have been an undercount of transit use in NPTS. The reader should be aware of the differences in the numbers of households between the NPTS estimates and the 1990 Decennial Census, shown in Table 1.2.

The income distributions in Table 1.2 indicate that the NPTS may have undersampled very low-income households. The potential for an undercount of low-income households cannot be clearly defined because 28 percent of all households interviewed for the NPTS refused to report household income. There is a strong possibility that those who refused to provide income data were lower income households, but this cannot be proved. A comparison of the household characteristics did not identify any significant differences between those that did and those that did not report income (see Appendix F).

It should also be noted that when the weighting factors were developed for the 1990 NPTS, the 1990 Decennial Census data were not yet available. Thus, the NPTS sample was expanded using the Current Population Survey projections. The sample was expanded based on: Census Region, household size, MSA status, race (Black, nonblack), and ethnicity (Hispanic, nonhispanic). The sample was not expanded based on household income.

Transit Tripmaking by Size of Area

Table 1.3 shows the number of transit trips by urbanized area population size. A rather clear trend emerges in that the largest areas show a smaller ratio of NPTS to Section 15 trips and the smaller areas

TABLE 1.2

COMPARISON OF NUMBER OF HOUSEHOLDS BY HOUSEHOLD INCOME, RACE, AND ETHNICITY
NPTS & CENSUS

Household Income	1990 NPTS Weighted(000)	1990 Census (000)	NPTS as a % of Census
All Households			
Less than \$5,000	2,757	5,685	48.5
\$5,000-9,999	6,495	8,530	76.1
\$10,000-14,999	6,331	8,133	77.8
\$15,000-24,999	12,398	16,124	76.9
\$25,000-34,999	12,361	14,575	84.8
\$35,000-49,999	12,489	16,428	76.0
\$50,000 and over	14,754	22,519	65.5
Total	67,585	91,994	73.4
White Households			
Less than \$5,000	1,785	3,727	47.9
\$ 5,000- 9,999	4,851	6,611	73.4
\$10,000-14,999	4,843	6,540	74.1
\$15,000-24,999	10,020	13,295	75.4
\$25,000-34,999	10,180	12,375	82.3
\$35,000-49,999	10,730	14,274	75.2
\$50,000 and over	13,030	20,086	64.9
Total	55,439	76,908	72.1
Black Households			
Less than \$5,000	662	1,514	43.7
\$ 5,000- 9,999	1,098	1,412	77.8
\$10,000-14,999	789	1,090	72.4
\$15,000-24,999	1,495	1,878	79.6
\$25,000-34,999	1,318	1,408	93.6
\$35,000-49,999	951	1,324	71.8
\$50,000 and over	909	1,316	69.1
Total	7,222	9,942	72.6
Hispanic Households			
Less than \$5,000	318	520	61.2
\$ 5,000- 9,999	532	653	81.5
\$10,000-14,999	637	644	98.9
\$15,000-24,999	945	1,205	78.4
\$25,000-34,999	633	963	65.7
\$35,000-49,999	747	937	79.7
\$50,000 and over	569	949	60.0
Total	4,381	5,871	74.6

TABLE 1.3

**COMPARISON OF PERSON TRIPS IN NPTS AND SECTION 15
BY URBANIZED AREA SIZE**

Urbanized Area Size	Unlinked Trips (000)		NPTS as a% of Sec. 15
	1990 NPTS	Section 15	
All Trips			
Group 1 ¹	2,779,125	4,006,132	69.4
Group 2 ²	1,431,043	1,754,642	81.6
Group 3 ³	852,520	1,031,252	82.7
Group 4 ⁴	788,120	458,185	172.0
Total	5,850,809⁵	7,250,211	80.7
Bus Trips			
Group 1 ¹	1,501,340	2,030,054	74.0
Group 2 ²	1,011,716	1,095,421	92.4
Group 3 ³	807,995	991,884	81.5
Group 4 ⁴	780,721	458,163	170.4
Total	4,101,772	4,575,522	89.6
Rail/Subway Trips			
Group 1 ¹	1,277,785	1,976,078	64.7
Group 2 ²	419,327	659,221	63.6
Group 3 ³	44,525	39,368	113.1
Group 4 ⁴	7,399	22	33631.8
Total	1,749,037	2,674,689	65.4
¹ Group 1 represents New York, Los Angeles and Chicago. ² Group 2 represents the next 9 largest urbanized areas - Philadelphia, Detroit, San Francisco, Washington D.C., Dallas, Houston, Boston, San Diego & Atlanta. ³ Group 3 represents the 21 remaining urbanized areas of 1 million or more population.		⁴ Group 4 represents all urbanized areas with populations between 200,000 and 1 million. ⁵ Does not include 390,000 transit trips made by persons residing outside urbanized areas of 200,000 or more.	

show a larger ratio. It appears that the NPTS sampling captured less transit trips in the largest urbanized areas than Section 15. This would affect not only the total number of trips, but also the specific modes used. If fewer trips were reported by residents of the largest urbanized areas, the number of subway trips would be lower relative to Section 15. In fact, this is where the largest discrepancy occurs between the two datasets.

The reader should be aware of another distinction between Section 15 and NPTS. In NPTS, the only locational data known about the respondent is his area of residence. In analyzing NPTS data, there is no way of knowing which trips on travel day were outside of the area of the respondent's residence. Therefore, all of the respondent's travel is attributed to his place of residence. By contrast, the Section 15 data are collected at the point of tripmaking and would reflect the actual location of the travel. There is no way to quantify the impact of this difference between the NPTS and Section 15 datasets.

6. Key NPTS Data Terms

Appendix A of this Databook contains a full glossary of terms used in this report; however, a few basic terms and concepts need to be introduced before data are presented.

Person Trip is used to describe and quantify travel for all modes of transportation. The definition of person trip—a trip by one person in any mode of transportation—is versatile enough to allow this measure to be applied to any mode. Unless otherwise specified, the tables on person trips contain all travel data collected in the NPTS by all modes (private vehicle, public transportation, walking, bicycle, airplane, etc.). A person trip is counted regardless of whether the person is a driver or a passenger. Two people travelling together in one car are counted as 2 person trips.

Person Miles are the number of miles travelled by each person on a trip. A 3-mile vehicle trip made by 2 people travelling together would count as 6 person miles.

Vehicle Trip is a trip by a single privately owned vehicle (POV), regardless of the number of persons in the vehicle. The trip defined above (two people travelling together in one vehicle) would be considered 1 vehicle trip. To be counted as a vehicle trip in the NPTS reports, a trip must be made in a POV and the driver must be a member of a household in the NPTS sample. The 1969 survey was not constrained this way and included all vehicle trips reported by the surveyed household, even those in which the driver was not a household member. Although there are vehicle trips made by modes other than POV, such as bus and streetcar, these are excluded in the NPTS because the survey traces individuals' movements throughout a day, rather than vehicle movements. The distinction among person trip, person miles of travel, vehicle trip and vehicle miles of travel is better illustrated in Figure 1.1.

Travel Day and Travel Period sections refer to two sections of the NPTS questionnaire designed to complement each other. In the travel day section, the respondent is asked to report all trips of any length by any mode of travel during a 24-hour period. This reporting provides data on the types of trips made on a daily basis, such as trips to work, to stores, running errands, and visiting friends. Because most people make out-of-town trips less frequently, respondents are asked to report any long trips (defined as 75 miles or more one way) for a 2-week period. This is known as the travel period and includes the travel day as well as the preceding 13 days (Figure 1.2).

Chapter 2 contains a more complete description of travel day and travel period data and presents the estimates of travel generated from each. The purpose of this

discussion is to alert the reader that the great majority of tables in this Databook are based on travel day data only. Thus, the longer trips are not fully represented in those tables. See Chapter 2, “Estimates of Travel”, for more information on combined estimates from travel day and travel period data, and Chapter 8, “Characteristics of Longer Trips”, for more information on travel period trips.

Commercial Driving. The focus of the NPTS is to obtain a profile of personal travel as opposed to commercial travel. For NPTS purposes, personal travel is defined as travel made for all purposes except

- driving a commercial vehicle, such as a bus, airplane, or train;
- driving a car or truck when delivering goods or passengers for hire;
- working at a job that involves too much driving to report on a trip-by-trip basis (e.g., a police officer on patrol duty).

These types of driving are considered “commercial driving” in the NPTS and are not included in travel day or travel period estimates because a significant burden would have been placed on the respondent to report detailed information on each such trip. Instead, respondents were asked to provide separate estimates of the number of miles driven in a typical day and the number of days per week that commercial driving was done. NPTS data on commercial driving are in Chapter 9. Because commercial driving is not included in travel day or travel period sections, there are consistent differences between NPTS data from travel day and travel period sections and data from other sources, particularly traffic count data.

The reader should note that it is beyond the scope of the NPTS project to obtain a fully representative sample of commercial drivers and/or commercial driving. It is highly likely that the estimate of commercial driving in the NPTS is underestimated.

FIGURE 1.1
DISTINCTION BETWEEN PERSON TRIP, PERSON MILES OF TRAVEL, VEHICLE TRIP, AND VEHICLE MILES OF TRAVEL

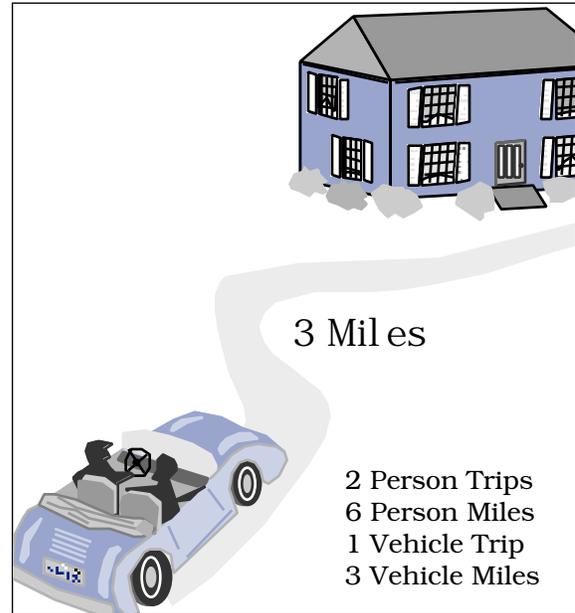


FIGURE 1.2
DISTINCTION BETWEEN TRAVEL DAY AND TRAVEL PERIOD

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

The table shows a 5x7 grid of days. Dashed lines separate the grid into three horizontal sections. In the first section, a dashed arrow points from cell 3 to cell 2. In the second section, a solid grey bar covers cells 10 and 11. In the third section, a dashed arrow points from cell 16 to cell 17.

Estimates of Total Travel. Chapter 2 includes an estimate of total travel from all three sections combined — travel day, travel period, and commercial driving sections. When data from all three sources are combined, travel day trips account for 66 percent of total VMT; travel period trips for 18 percent; and commercial travel for 16 percent. As discussed in Chapter 2, combining data from travel day with data from travel period is not straightforward and one should not add the number of trips reported in the travel day section to those reported in the travel period section, as the definition of a “trip” was not the same in the two sections.

7. Data Considerations

Data considerations in comparing 1983 data and earlier survey data are carefully described in the 1983 report series. Nevertheless, to maintain the self-contained nature of this report, pertinent data considerations are repeated here. Also included are data considerations regarding the 1990 survey that users of this publication are advised to bear in mind when using or comparing data from different NPTS surveys

Workers

“Workers” in this survey series include part-time workers. For consistency, 1977 data have been revised to include part-time workers, and therefore differ from those reported in the 1977 report series.

Number of drivers per household

A total of 22,317 households completed interviews in 1990. However,

- In 101 households with more than one member, only one household member was interviewed.
- In 6,983 households, not all members were interviewed.
- In 3,479 households, not all adult members were interviewed.

The impact of not interviewing all household members is that not all licensed drivers were enumerated in the survey; thus, the number of licensed drivers on a per household basis is misleading and is not reported in this publication. However, weighting factors at the individual level were developed to take this nonresponse into account; thus, the statistics on the total number of licensed drivers are valid.

Number of persons by household composition

In this publication, the number of one-person households does not equal the total number of persons in one-person households because different weighting schemes were used to develop the weighting factors at the household level and at the person level.

Income

Historically, income information was collected by income categories, and these categories varied from one survey to the next. To group income categories into consistent categories between surveys and to accurately reflect inflation, a mathematical procedure was developed to aggregate income categories and compare 1983 and 1990 data by income category. This procedure is described in Appendix E.

Work trips

Questions on the journey to work were asked in two different sections of the 1990 questionnaire. In one section the respondent was asked about the typical or usual trip to work during the week preceding the interview. In that section, only information on the modes that were usually used for work trips and the mode used for the longest distance were identified. In travel day section, more information was collected on work trips that actually occurred during the designated sampled day (travel day), such as trip duration, trip length, and travel modes used. The statistics on

work trips in this report were primarily based on data in the travel day section. Any tabulations from the usual work trip section are so identified.

Segmented trips

Certain trips reported in the travel day section were given “segmented” treatment (broken into components) to get improved data on transit use. A trip was segmented when more than one mode was used on that trip and one of the modes was public transit (bus, subway, elevated rail, commuter train, or streetcar). A trip was also segmented when there was a transfer on the same public transit mode (e.g., bus to bus). When a trip was given segmented treatment, certain data, such as mode and travel time, were collected for each segment. For a complete discussion of segmented trips, see the material preceding Table 4.29 in Chapter 4.

Trip purpose

The 1977 survey collected much more detail than the other surveys on trip purpose - 21 purposes in 1977 compared with 11 in other surveys. For trip purposes that are not easily coded—such as the return home portion of a trip that had several purposes—a procedure was developed to classify those trips based on the purposes of trips that immediately preceded them.

Vehicle age

Vehicle age in this publication is calculated as the difference between the model year and the survey year. For example, if the model year of a vehicle is 1986, this vehicle was 4 years old for the 1990 survey. If the difference between the model year of a vehicle and the survey year was less than zero, the vehicle age was categorized as “1 year old or younger.” All earlier data related to vehicle age were revised by this approach and therefore may not agree with data published earlier.

Accident experience

Information on accident experience was collected only for the most recent highway crash that resulted in property damage or personal injury; thus, accident data reported in the 1990 NPTS do not reflect all highway crashes. Chapter 10 contains the accident data collected as part of the NPTS interview.

8. Report Organization

The primary purpose of this Databook is to serve as a statistical compendium of the 1990 NPTS.

In Chapter 2, different approaches to estimate annual travel data from the 1990 NPTS are discussed. For example, one can estimate the average annual miles driven per driver by “annualizing” the total number of miles driven on the travel days or by using the self-reported estimate on the total number of miles driven (this information was asked at the person section of the questionnaire). Chapter 2 outlines justifications for and comparisons of these different approaches.

Chapter 3 contains demographic characteristics and household vehicle ownership patterns that shape travel activities at the individual and the household level. The remainder of the Databook consists of the following:

- Chapter 4 discusses data on person trips and travel.
- Chapter 5 includes analysis of vehicle travel, in terms of the number of vehicle trips and VMT.
- Chapter 6 presents data on journey-to-work and work-related trips.
- Chapter 7 reports on ride-sharing and vehicle occupancy distributions.
- Chapter 8 reports characteristics of trips at least 75 miles long that occurred during the travel period.

- Chapter 9 presents trends in commercial driving.
- Chapter 10 focuses on highway accidents that occurred during the five-year period prior to the 1990 NPTS and on the differences between reported and unreported accidents.

The appendices contain material needed by the NPTS data users, as follows:

- Appendix A: Glossary
- Appendix B: Differences in Geographical Definitions, 1983 to 1990
- Appendix C: Weighting Procedures
- Appendix D: Estimated Standard Errors of Key Statistics
- Appendix E: Procedures for Adjusting Income Categories over Time
- Appendix F: Comparison of Households Not Reporting Income with Those Reporting Income

Because of the size of this Databook, it is published in two volumes: Chapters 1 through 4 are in Volume 1, Chapters 5 through 10 and the appendices are in Volume 2.

Each chapter has a similar format. Within each chapter the reader will find the following elements:

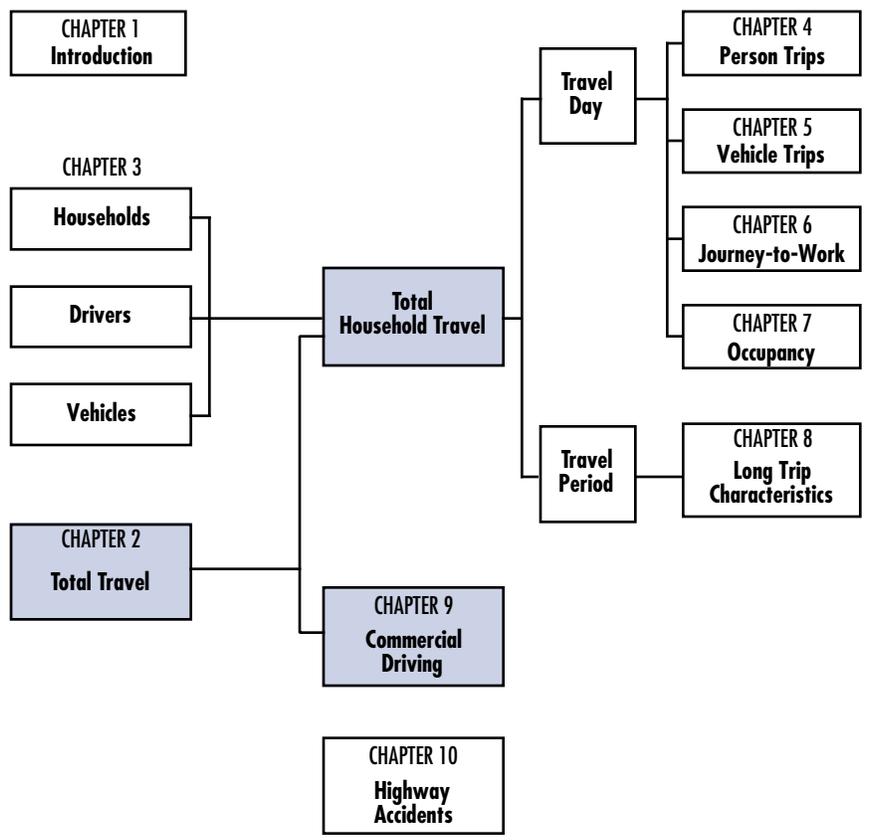
- A diagram identifies the main subject of the chapter in the context of all NPTS data. Among other things, the diagram informs the reader of the source of the data presented in the chapter (e.g., travel day trips or another source).
- Key statistics are displayed in a tree format. For example, the chapter on person trips and person miles has two trees—one by trip purpose and the other by mode.

- A chapter table of contents, list of tables, and list of figures are next. Because of the number of tables and figures in the Databook, they are listed at the chapter level.
- Tables, figures, and accompanying analysis are presented, in subsections of each chapter, following the order below (as much as possible):

- Person characteristics (e.g., age, sex, driver license status)
- Household characteristics (e.g., income, place of residence)
- Trip characteristics (e.g., mode, purpose, length)
- Temporal patterns (e.g., time of day, day of week).

Totals in some tables may not add due to rounding.

The title of the chapter and the subsections within each chapter are indicated on the edge of each page alongside the thumb tab. The chapter title is in black, and the subsection title is in blue.



Chapter 2

Estimates of Total Travel



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Chapter 2 Estimates of Total Travel

1. Introduction

TRAVEL estimates are among the most important information that can be generated from the NPTS data. Data on travel are needed to analyze and describe the use of each mode of transportation and to plan for future infrastructure investment in that mode. In the NPTS interviews, all respondents were asked about trips they had taken on the sampled day (designated travel day), longer trips they had taken over a two-week period prior to the sample day (designated travel period), how much they drove in a year, and how much their household vehicles were driven in a year. In addition, if respondents drove as part of their work, they were asked for a weekly estimate of this type of driving. Because these five data items measure travel somewhat differently, various estimates of total person miles or total vehicle miles of travel may be generated from the 1990 NPTS.

The survey was designed to produce differing estimates because having more than one source for travel data reduces imputation of missing data. For instance, if people did not report on each travel day or travel period trip, the estimate of annual miles driven provides an independent estimate of driving. Another benefit of having several estimates is for validation purposes. The user of this Databook should be aware of the various travel estimates and how these estimates differ from each other.

Travel data were collected in two ways in the NPTS interview:

- Trip level data collected for
 - travel day, and
 - travel period.
- Aggregate estimates of driving collected for:
 - annual estimate for each household driver,
 - annual estimate for each household vehicle, and
 - commercial driving.

2. Trip Level Data

In the 1990 NPTS questionnaire, two sections contain questions on individual trips. These sections and the relevant data are:

2.1 Travel Day Section

For the NPTS, data were collected from each respondent on the trips taken on a specific day (which, once designated, remained the travel day for all members of the household). The travel day for each household encompassed a 24-hour period from 4 a.m. of the designated day until 3:59 a.m. of the following day.

NPTS follows other travel surveys, which have historically relied upon collecting data from all respondents on one or two designated days' worth of their travel. While the travel on that day may not be representative of an individual respondent's typical travel, the aggregation of travel reported by a number of respondents provides a representative look at overall travel behavior.

Data on all trips taken on the designated travel day were collected, including trips of all lengths, all modes, and all purposes. Of course, the trips most often taken on travel day were short trips for purposes such as going to work, to school, to the store, and to visit a friend. For each trip on the designated travel day, a wide variety of characteristics were collected, including trip purpose, mode used, time of day, trip length (miles), trip duration (minutes), vehicle used, number of people on the trip, and identity of the driver.

Data on travel day trips were collected for each household member aged 5 and older. Those aged 14 and older reported the trips for themselves, while an adult household member reported trips for those aged 5 to 13. In the 1990 survey, data for approximately 150,000 travel day trips were collected. Given the amount and richness of the data, the travel day section forms the core of the NPTS dataset. Another reason that travel day data are the most widely used estimates from NPTS is primarily because of the high degree of interest in average daily travel and because trip data on travel day come closest to replicating the data in urban travel surveys.

Consequently, there is a heavy reliance on travel day data throughout the Databook. Of the eight remaining chapters in this Databook, four rely exclusively on travel day data. Travel day data estimate:

- 1,409,600 million annual national vehicle miles of travel, and
- 2,315,300 million annual national person miles of travel.

Converting these figures to a per person basis, the average American drove 8,650 miles in household-based vehicles in 1990 and travelled 9,670 person miles by all modes of transportation (including private vehicles).

2.2 Travel Period Section

In addition to the trips reported on travel day, NPTS included separate questions on long trips (defined as trips of 75 miles or more one-way) over a two-week period. The two weeks were the thirteen days preceding the travel day plus the travel day. This is called travel period data. The purpose of reporting longer trips over this extended period is to identify intercity trips that occur infrequently.

2.3 Combining Travel Day Data and Travel Period Data

If a long trip occurred on the travel day, it was reported in both the travel day and the travel period sections. Trips reported in both sections are referred to as the travel day-travel period overlap. When data from travel day are used in combination with data from the travel period, those overlap trips are removed from the travel day estimates to avoid double-counting. The tables in this Databook that present travel day data with the overlap trips removed are labeled “Travel Day Adjusted.”

Data from travel day and travel period sections are combined to generate estimates of total person miles of travel and total vehicle miles of travel. However, one should not add the number of trips reported for travel day to those reported for travel period, since the definition of a “trip” was not the same in these two sections. In the travel day section, a trip was defined as any one-way travel from one place (address) to another by any means of transportation. When travel was to more than one destination, a separate trip was generated each time the purpose for one destination was different from that of another or when the travel time between two destinations exceeded five minutes. In the travel period section, a trip is defined as travel to a destination at least 75 miles from home, with the return trip within the two-week travel period.

3. Aggregate Estimates of Travel

Three different aggregate estimates of driving collected in the 1990 NPTS are described as follows:

3.1 Annual Estimate of the Miles Driven by Each Licensed Driver

In addition to the trip-level data, an annual estimate of miles driven was obtained for each household driver. For the driver, the estimate should include driving done in all vehicles, whether the vehicles belong to the household or not. The sum of all annual estimates of driving should be comparable to total vehicle miles travelled (VMT) estimates from other sources. Based on annual estimates made by individual drivers, the 1990 NPTS estimates the annual national vehicle miles of travel at 2,139,700,000, while the estimate based on traffic counts submitted by the State highway agencies to the Federal Highway Administration (FHWA) as reported in its publication *Highway Statistics*, Table VM-1 was 2,144,360,000 miles, which is within 1 percent of the NPTS estimate. Note that the annual estimates by each driver include any commercial driving that the driver did and is closer to the *Highway Statistics* estimate than any other data in the NPTS survey. Table 1.1 compares NPTS data to *Highway Statistics* estimates and shows a 15 percent difference in total personal VMT. Notice that the Chapter 1 comparison is based on NPTS travel day and travel period data, which excludes commercial driving. On the other hand, the comparison in this chapter uses annual driving estimates made by each driver, which include commercial driving.

Some data users believe that data collected on a single day may undercount actual travel, and that an annual estimate, particularly if presented by driver characteristics such as age and sex, serves as an important cross-check on travel day data. Likewise, where data from earlier NPTS surveys are derived from the annual estimates, they would be compared to the annual estimate from the 1990 data.

3.2 Annual Estimate of Miles Driven in Each Household Vehicle

The annual estimate of miles driven in each vehicle owned by or available to the household was obtained by asking for all miles driven in that vehicle, whether driven by household members or not. If a vehicle had been owned less than a year, the respondent was asked to estimate the miles driven from the time the vehicle was acquired by this household and to provide the number of months since it was acquired. Thus, an annual estimate was generated for those vehicles acquired within the past year.

As with the driver's estimate, an estimate of vehicle use may be derived from travel day data or travel day plus travel period data. However, it should be emphasized that the basic approach in NPTS is to track people movement, not vehicle movement. Therefore, any use of the vehicle by people outside the surveyed household would not be collected in the travel day section or the travel period section.

3.3 Commercial Driving

For people who drive as an essential part of their work (e.g., truck drivers, bus drivers, delivery persons, and police assigned to patrol duty), it is unreasonable to expect them to remember and list the individual trips they have made in their commercial driving. Instead, they were asked to estimate total miles driven as part of their work during an average week. The other data collected on commercial driving included the type of vehicle used and the number of days in a typical week that this type of driving was done. All of the mileage estimates reported for commercial driving are for work-related travel. For their other travel, such as trips to the store, picking up children from school, going to a movie, or commuting between home and their place of work, they were asked to report information for each individual trip.

Using multiple approaches to the question of miles travelled permits a clearer analysis of the impact of long, infrequent trips

and commercial travel relative to usual daily travel. For example, while trips of 75 miles or more account for a small proportion of all vehicle trips, they comprise 18 percent of the total vehicle miles. Likewise, when all three sources of vehicle miles are considered, commercial travel accounts for nearly 16 percent of the total driving.

The combined estimates from travel day data plus travel period data plus commercial driving are used most often when comparing NPTS data to sources that are designed to reflect the full universe of travel, such as the total VMT estimate in Highway Statistics. They are also used when the longer-trip component of travel is a critical element of the travel inventory.

4. Estimate of Total Travel

4.1 Calculation of Person Miles of Travel (PMT)

Total person miles of travel may be estimated from the individual trip data — travel day data, or travel day data adjusted (i.e., without the overlap trips) combined with travel period data. However, person miles of travel for commercial driving can not be estimated since information on the average number of persons on a typical trip is unavailable.

4.2 Calculation of Vehicle Miles of Travel (VMT)

As discussed earlier, five sections of the NPTS questionnaire contain questions on the number of vehicle miles travelled. If the respondent was a driver on a trip reported in the travel day or travel period section, then an estimate of VMT could be calculated by annualizing the individual trip data. In addition, the 1990 NPTS collected aggregate estimates of driving from three different sections— the driver section, the vehicle section, and the commercial driving portion of the driver section.

These three estimates do not provide travel estimates at the individual trip level.

The chart at the top of the facing page identifies the sections of the NPTS questionnaire from which data can be used to estimate person miles and vehicle miles travelled.

5. Data Sources

As mentioned earlier, data reported in the travel day section serve as the core data source of the Databook simply because the high degree of interest in average daily travel patterns and the level of detail on individual trips. However, in some instances, a given data source is used for the convenience of comparing 1990 data with those from earlier NPTS surveys. Table 2.1 lists the main data sources of material in each chapter. In the remainder of this chapter, estimated total travel using data from different sections is presented.

Section of the 1990 NPTS Questionnaire	Person Miles	Vehicle Miles
Travel Day	X	X
Travel Period	X	X
Travel Day Adjusted plus Travel Period	X	X
Commercial Driving		X
Travel Day Adjusted plus Travel Period plus Commercial Driving		X
Annual Miles Driven Estimated by Driver		X
Estimated Annual Miles Driven per Vehicle		X

TABLE 2.1
DATA SOURCES FOR EACH CHAPTER OF THIS DATABOOK

	Travel Day Section	Travel Period Section	Driver Section	Vehicle Section	Commercial Driving Section
Chapter 2	X	X	X	X	X
Chapter 3			X	X	
Chapter 4	X				
Chapter 5	X				
Chapter 6	X				
Chapter 7	X				
Chapter 8		X			
Chapter 9					X

Table 2.2 provides an order-of-magnitude comparison of person miles and vehicle miles of travel, which are estimated by using data from different sections of the questionnaire. Note that the information on commercial driving was collected only as vehicle

miles travelled. Since no information was collected on the average number of persons on a typical commercial trip, the total person miles travelled for commercial driving could not be estimated.

TABLE 2.2

**TRAVEL SUMMARY STATISTICS BY DATA SOURCE
1990 NPTS
(MILLIONS)**

	Estimate of Annual Miles Based on Various Data Sources				Driver Section	Vehicle Section
	Travel Day Section Adjusted ¹	Travel Period Section	Commercial Driving Section	TOTAL		
Person Miles Travelled (PMT)	1,982,068 (333,205)	886,235	**	2,868,303	**	**
PMT/Person	8,279 (1,392)	3,701	**	11,980	**	**
Vehicle Miles Travelled (VMT)	1,275,792 (133,784)	337,332	302,824	1,915,948	2,139,703	2,058,323
VMT/Driver	7,826 (821)	2,069	13,625 ²	11,754	13,125	12,626

¹ The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips is referred to as the "Travel Day Section Adjusted".

² Denominator includes the number of commercial drivers only.
** Indicates no data available.

Table 2.3 reports two sets of estimates of person miles of travel by trip purpose using data from different sections of the questionnaire — the travel day section, and the travel period section. As expected, the area that shows the largest impact by including data from the travel period section is social and recreational travel, vacation travel in particular. More than 80 percent of the total vaca-

tion travel is accounted for by trips that are 75 miles or longer, with an increase of 168 million miles (calculated as 218,567 miles that represent the total vacation travel for travel period minus 50,450 miles that were collected in both the travel day and travel period sections) which would not have been counted if data from only the travel day section were considered.

FIGURE 2.1

DISTRIBUTION OF PERSON MILES OF TRAVEL BY DATA SOURCE AND TRIP PURPOSE
1990 NPTS

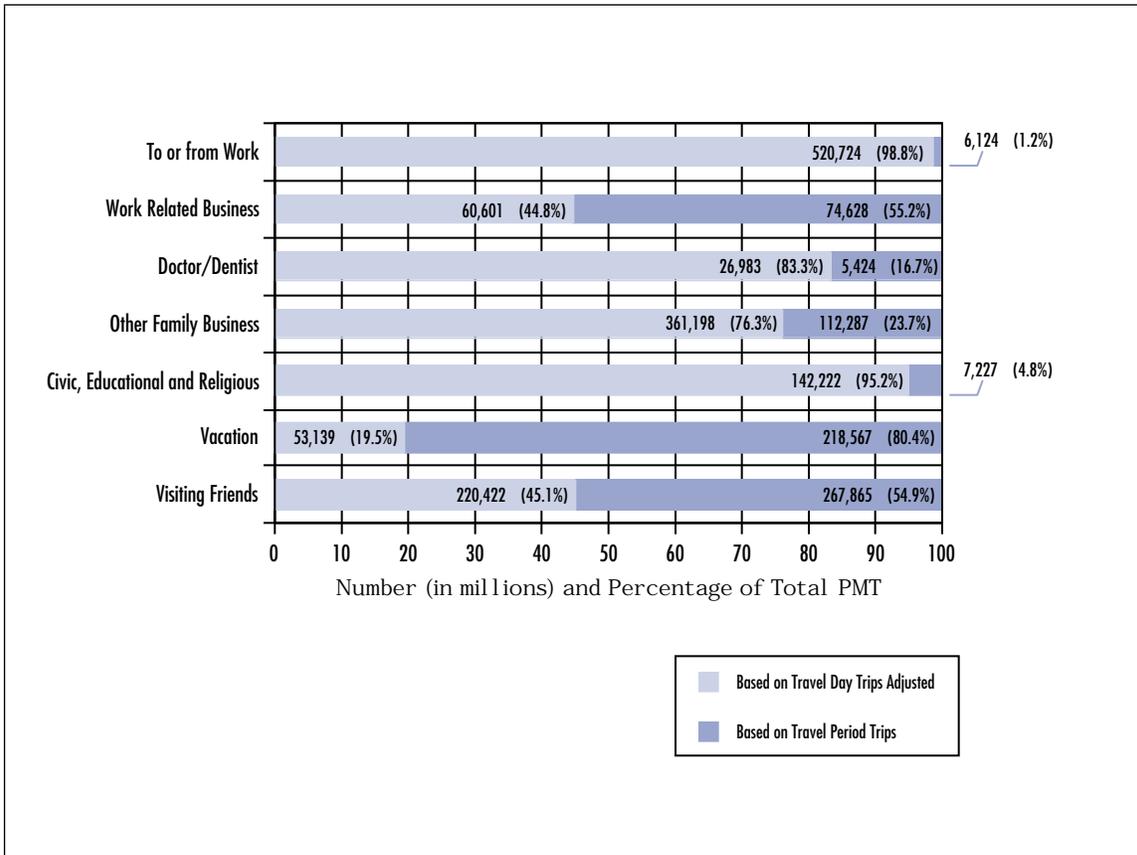


TABLE 2.3

**NUMBER OF TOTAL PERSON MILES OF TRAVEL BY DATA SOURCE AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

Purpose	Travel Day Section Adjusted ¹	Travel Period Section	TOTAL
Earning a Living			
To or from Work	520,724 (5,432)	6,124	526,848
Work Related Business	60,601 (36,779)	74,628	135,229
Subtotal	581,325 (42,211)	80,752	662,077
Family and Personal Business			
Shopping	237,146 (12,475)	11,342	248,488
Doctor/Dentist	26,983 (1,330)	5,424	32,407
Other Family Business	361,198 (84,980)	112,287	473,485
Subtotal	625,327 (98,785)	129,053	754,380
Civic, Educational, and Religious			
Subtotal	142,222 (7,050)	7,227	149,449
Social and Recreational			
Vacation	53,139 (50,450)	218,567	271,706
Visiting Friends	220,422 (58,634)	267,865	488,287
Pleasure Driving	14,436 (2,784)	12,105	26,541
Other Social/Recreational	329,791 (70,019)	161,894	491,685
Subtotal	617,788 (181,887)	660,431	1,278,219
Other²			
Subtotal	15,406 (3,273)	8,772	24,178
TOTAL	1,982,068 (333,205)	886,235	2,868,303
Percent	69.1%	30.9%	100.0%

¹ The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips is referred to as the "Travel Day Section Adjusted".

² Includes miles of travel where trip purpose was unreported.

As a survey design issue, it is important to include data on long-distance travel so as to account for travel on many commonly used intercity modes (such as airplane, train, and bus). For example, data on person miles collected in the travel period section of the

questionnaire accounted for 76.9% of all passenger miles by air, 56.4% of all Amtrak passenger miles, and 22.0% of all bus passenger miles (including local bus service).

TABLE 2.4

**NUMBER OF TOTAL PERSON MILES OF TRAVEL BY DATA SOURCE AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Travel Day Section Adjusted ²	Travel Period Section	TOTAL
Private Vehicles			
Auto	1,397,810 (190,993)	460,471	1,858,281
Van	119,130 (29,138)	84,267	203,397
Truck	262,907 (26,029)	64,421	327,328
Other POV	8,454 (5,520)	15,241	23,695
Subtotal	1,788,301 (251,680)	624,400	2,412,701
Public Transportation			
Bus, Streetcar	28,151 (7,038)	7,937	36,088
Rail/Subway ³	17,681 (177)	416	18,097
Subtotal	45,832 (7,215)	8,353	54,185
Other Means			
Amtrak	4,300 (808)	5,552	9,852
Airplane	72,878 (72,016)	242,198	315,076
Bike	3,413 (58)	4	3,417
Walk	11,328 (90)	**	11,328
School Bus	33,060 (382)	877	33,937
Other	22,955 (956)	4,851	27,806
Subtotal	147,934 (74,310)	253,482	401,416
TOTAL⁴	1,982,068 (333,205)	886,235	2,868,303
Percent	69.1%	30.9%	100.0%

¹ Estimates of transit use are based on approximately 3000 travel day and travel period trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

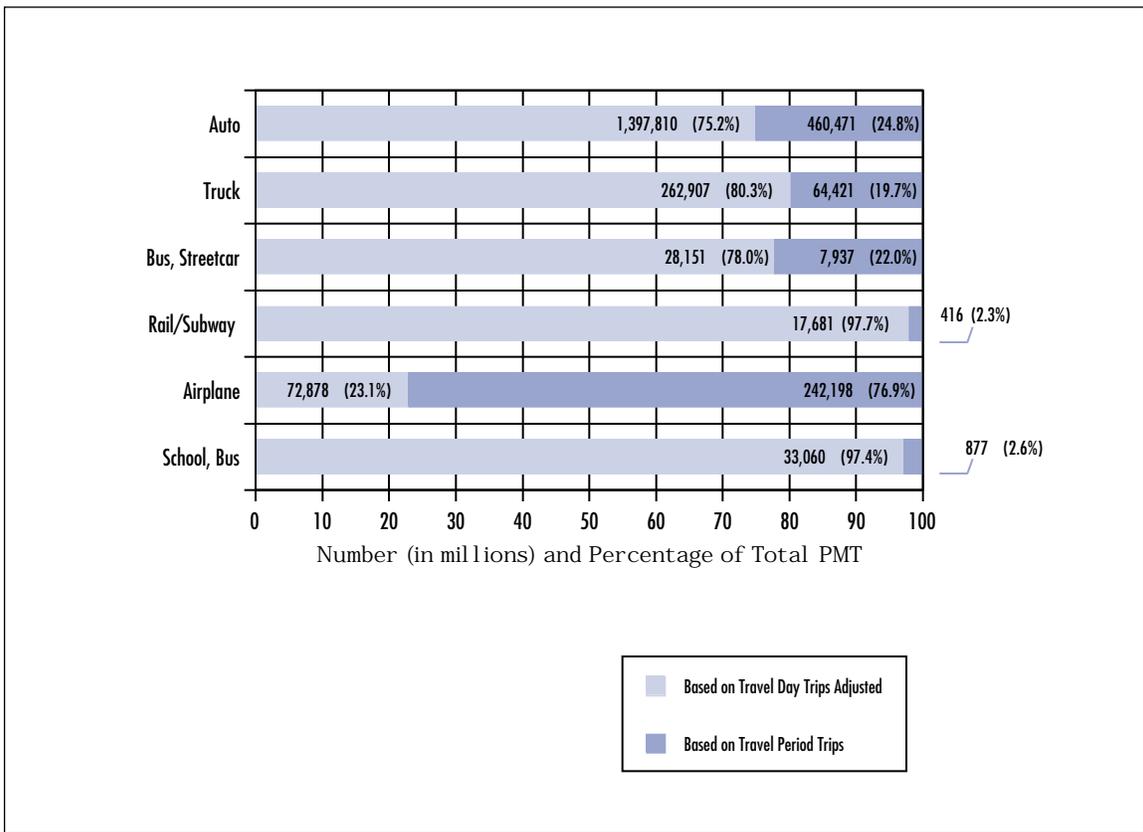
² The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips is referred to as the "Travel Day Section Adjusted".

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where mode of transportation was unreported.

** Indicates no data reported.

FIGURE 2.2
DISTRIBUTION OF PERSON MILES OF TRAVEL BY DATA SOURCE AND MODE OF TRANSPORTATION
1990 NPTS



DATA from the travel period section of the survey account for over 30% of all person miles of travel, or 886 billion person miles. Tables 2.5 and 2.6 examine the impacts of including longer trips on the overall estimate of travel. By far the greatest impact of including longer trips is on estimates of non-vacation social and recreational travel by private vehicles — 188,257 million miles as the drivers of the vehicles and 161,410 million miles as the passengers of the vehicles (Table 2.5).

As expected, longer trips dominated the use of Amtrak, with 56% of all person miles travelled in longer trips; and air travel, with 77% of all person miles travelled in longer trips. Social and recreational travel was the central purpose for these two modes. Travel period trips

comprise 68% of all social and recreational person miles on Amtrak and 78% of all social and recreational miles by air (Table 2.5).

Table 2.6 presents the number of person miles of travel, categorized by mode of transportation and trip length. Separate estimates are reported for the travel day section and for the travel period section. By definition, travel period trips must be 75 miles or more one-way. Thus, there are no data for travel period trips in the trip-length categories of 50 miles or less. Travel-period trips accounted for 78% of all trips over 100 miles long. Ninety-eight percent of these trips were private vehicle trips and airplane trips estimated from data in the travel period section.

TABLE 2.5

NUMBER OF PERSON MILES OF TRAVEL BY DATA SOURCE, MODE OF TRANSPORTATION AND TRIP PURPOSE
1990 NPTS (MILLIONS)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Private Vehicle- Driver	Private Vehicle- Passenger	Amtrak	Commuter Train	Other Public Transit ²	Airplane	Other ³	TOTAL ⁴
To Or From Work								
Travel Day Adjusted ⁵	448,337	45,197	1,166	5,645	16,288	**	3,987	520,724
Travel Period	5,206	669	145	104	**	**	**	6,124
Work Related Business								
Travel Day Adjusted	34,257	5,088	673	371	406	18,885	703	60,601
Travel Period	17,802	5,975	540	5	281	49,655	355	74,628
Family And Personal Business								
Travel Day Adjusted	419,048	183,862	295	398	6,113	8,542	7,039	625,327
Travel Period	61,283	40,037	247	4	510	26,851	122	129,053
Civic, Educational And Religious								
Travel Day Adjusted	59,169	43,127	**	250	7,075	**	32,425	142,222
Travel Period	4,141	2,124	**	3	722	59	178	7,227
Vacation								
Travel Day Adjusted	6,835	6,921	2,135	1,340	**	23,716	12,192	53,139
Travel Period	57,237	73,747	2,325	14	975	82,002	1,758	218,567
Other Social And Recreational⁶								
Travel Day Adjusted	299,439	222,592	32	578	6,770	21,736	13,174	564,649
Travel Period	188,257	161,410	2,294	286	5,373	81,710	2,425	441,864
TOTAL⁷								
Travel Day Adjusted	1,275,553	512,748	4,300	8,581	37,251	72,878	69,896	1,982,068
Travel Period	337,332	287,068	5,552	416	7,937	242,198	5,100	886,235

¹ Estimates of transit use are based on approximately 3000 travel day and travel period trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes bus, streetcar/trolley and elevated rail/subway.

³ Includes taxi, bicycle, walk, school bus and other.

⁴ Includes miles of travel where mode of transportation was unreported.

⁵ Travel day estimates without overlap trips are referred to as "Travel Day Adjusted".

⁶ Includes visiting friends or relatives, pleasure driving and other social or recreational activities.

⁷ Includes the other category and miles of travel where trip purpose was unreported.

** Indicates no data available.

TABLE 2.6

NUMBER OF PERSON MILES OF TRAVEL BY DATA SOURCE, MODE OF TRANSPORTATION AND TRIP LENGTH
1990 NPTS (MILLIONS)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Private Vehicle- Driver	Private Vehicle- Passenger	Amtrak	Commuter Train	Other Public Transit ²	Airplane	Other ³	TOTAL ⁴
5 Miles Or less								
Travel Day Adjusted ⁵	216,690	77,451	25	243	5,551	**	23,779	323,833
Travel Period	**	**	**	**	**	**	**	**
6 - 10 Miles								
Travel Day Adjusted	232,123	80,537	12	323	6,741	**	11,528	331,269
Travel Period	**	**	**	**	**	**	**	**
11 - 20 Miles								
Travel Day Adjusted	322,637	112,438	271	922	8,413	**	11,299	456,266
Travel Period	**	**	**	**	**	**	**	**
21 - 30 Miles								
Travel Day Adjusted	174,713	63,797	60	1,554	3,723	45	2,126	246,112
Travel Period	**	**	**	**	**	**	**	**
31 - 50 Miles								
Travel Day Adjusted	198,150	94,427	149	3,686	4,979	**	2,635	304,025
Travel Period	**	**	**	**	**	**	**	**
51 - 100 Miles								
Travel Day Adjusted	61,761	29,234	433	512	1,798	**	951	94,954
Travel Period	49,552	34,747	507	189	873	113	528	86,549
Over 100 Miles								
Travel Day Adjusted	69,480	54,864	3,352	1,340	6,046	72,834	17,577	225,608
Travel Period	287,780	252,321	5,045	227	7,064	242,085	4,571	799,686
TOTAL								
Travel Day Adjusted	1,275,553	512,748	4,300	8,581	37,251	72,878	69,896	1,982,068
Travel Period	337,332	287,068	5,552	416	7,937	242,198	5,100	886,235
¹ Estimates of transit use are based on approximately 3000 travel day and travel period trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.					⁴ Includes miles of travel where mode of transportation was unreported.			
² Includes bus, streetcar/trolley and elevated rail/subway.					⁵ Travel day estimates without overlap trips are referred to as "Travel Day Adjusted".			
³ Includes taxi, bicycle, walk, school bus and other.								

Table 2.7 shows the impacts of including longer trips (travel period trips) and commercial driving on the estimate of total annual miles driven. The impact of longer trips on vehicle miles is somewhat similar to the pattern shown on person miles — with relatively large increases in the amount of driving for other family and personal business and social and recreational travel. The impact

of including driving that is an essential part of work is entirely on travel for work-related business. By definition, all commercial travel is categorized as work-related. An increase of almost tenfold in the amount of driving in the work-related business category was due to longer trips and commercial driving.

FIGURE 2.3

**DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY DATA SOURCE AND TRIP PURPOSE
1990 NPTS**

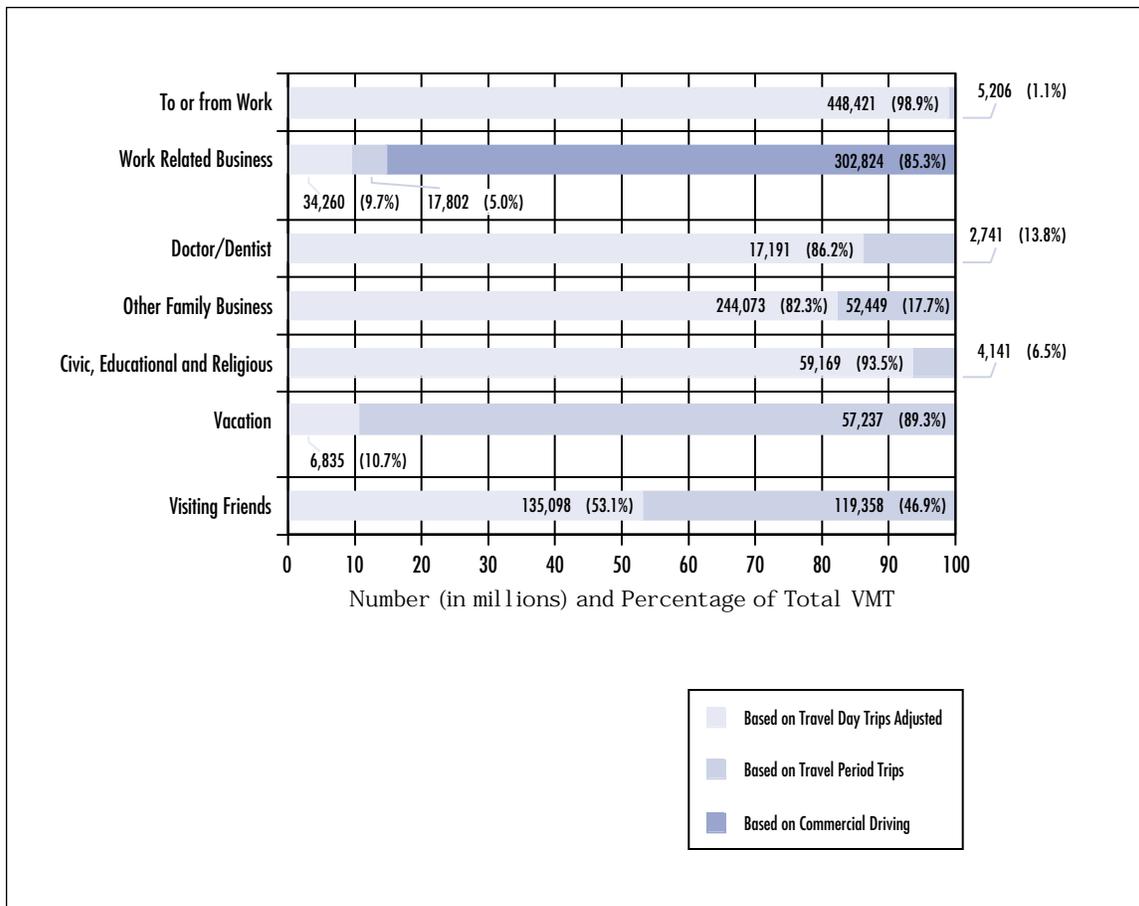


TABLE 2.7

NUMBER OF TOTAL VEHICLE MILES OF TRAVEL BY DATA SOURCE AND TRIP PURPOSE
1990 NPTS
(MILLIONS)

Purpose	Travel Day Section Adjusted ¹	Travel Period Section	Commercial Driving Section	TOTAL
Earning a Living				
To or from Work	448,421 (4,621)	5,206	**	453,627
Work Related Business	34,260 (8,075)	17,802	302,824	354,886
Subtotal	482,681 (12,696)	23,008	302,824	808,513
Family and Personal Business				
Shopping	157,801 (4,866)	6,092	**	163,893
Doctor/Dentist	17,191 (618)	2,741	**	19,932
Other Family Business	244,073 (37,317)	52,449	**	296,522
Subtotal	419,065 (42,801)	61,282	**	480,347
Civic, Educational, and Religious				
Subtotal	59,169 (3,032)	4,141	**	63,310
Social and Recreational				
Vacation	6,835 (13,696)	57,237	**	64,072
Visiting Friends	135,098 (28,882)	119,358	**	254,456
Pleasure Driving	7,692 (1,474)	6,905	**	14,597
Other Social/Recreational	156,783 (28,528)	61,993	**	18,776
Subtotal	306,408 (72,580)	245,493	**	551,901
Other²				
Subtotal	8,469 (2,674)	3,408	**	11,877
TOTAL	1,275,792 (133,784)	337,332	302,824	1,915,948
Percent	66.6%	17.6%	15.8%	100.0%

¹ The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips are referred to as the "Travel Day Section Adjusted".

² Includes miles of travel where trip purpose was unreported.

** Indicates no data reported.

If the NPTS was limited to collecting data on trips taken on travel day, total vehicle miles of travel (VMT) would be 1,409,600 million miles. However, with the inclusion of travel period trips and commercial driving, total vehicle miles of travel reached 1,915,900 million miles (Table 2.8). Travel period trips and commercial driving have considerable impacts on VMT estimates for all vehicle types. For example, 27% of all vehicle miles by automobiles were in longer trips and commercial driving. The corresponding rate for vans was 47%.

As expected, commercial driving comprises a significant amount of total truck travel, 37% or 150 million miles. Note that trucks used

in travel day travel and travel period travel probably were pickup trucks and other light trucks. However, trucks used for commercial driving were more likely to be heavier trucks, generally defined as those with gross vehicle weight over 10,000 pounds.

The inclusion of travel period trips is particularly important for estimates of the number of longer trips, especially trips more than 100 miles. More than 210 billion miles of driving would have been overlooked if travel period data on trips more than 100 miles were not collected (Table 2.9).

TABLE 2.8

**NUMBER OF TOTAL VEHICLE MILES OF TRAVEL BY DATA SOURCE AND MODE OF TRANSPORTATION
1990 NPTS
(MILLIONS)**

Mode	Travel Day Section Adjusted ¹	Travel Period Section	Commercial Driving Section	TOTAL
Auto	988,445 (102,408)	257,834	110,605	1,356,884
Van	68,578 (12,597)	32,789	28,004	129,371
Truck	211,506 (16,899)	39,225	149,641	400,372
Other Private Vehicle	7,024 (1,880)	7,484	604	15,112
Other ²	0 (0)	0	13,891	13,891
TOTAL³	1,275,792 (133,784)	337,332	302,824	1,915,948
Percent	66.6%	17.6%	15.8%	100.0%

¹ The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips are referred to as the "Travel Day Section Adjusted".

² Includes bus, school bus and other.

³ Includes miles of travel where mode of transportation was unreported.

TABLE 2.9

**NUMBER OF VEHICLE MILES OF TRAVEL BY DATA SOURCE¹ AND TRIP LENGTH
1990 NPTS
(MILLIONS)**

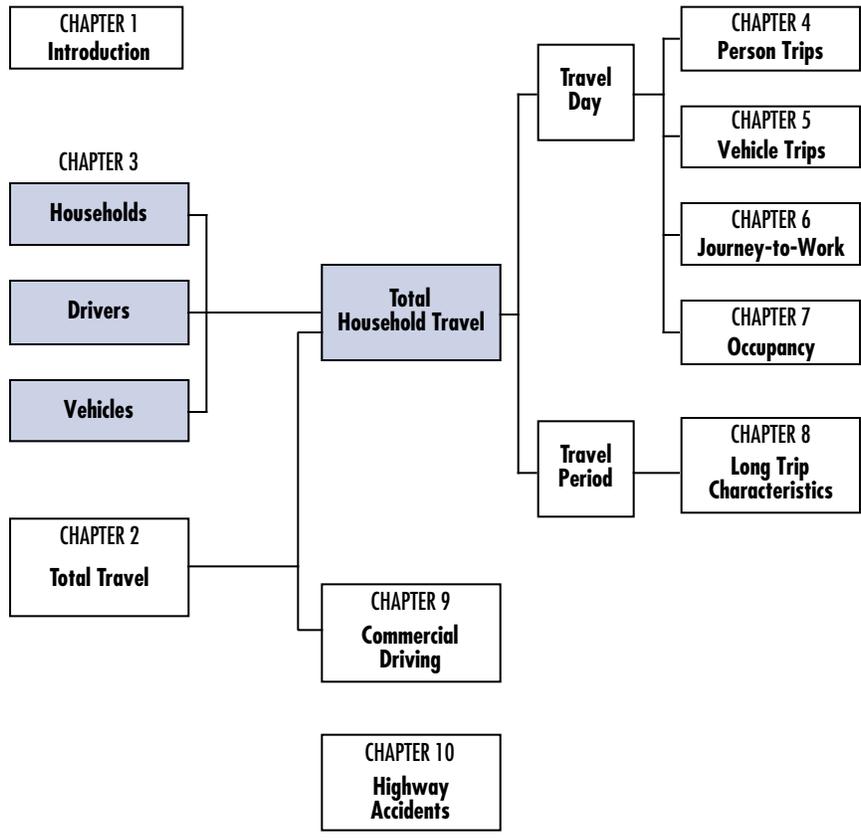
Trip Length	Vehicle Miles of Travel	
5 Miles Or Less		
Travel Day Adjusted	216,733	(1,084) ²
Travel Period		**
6 - 10 Miles		
Travel Day Adjusted	232,124	(1,448)
Travel Period		**
11 - 20 Miles		
Travel Day Adjusted	322,718	(2,375)
Travel Period		**
21 - 30 Miles		
Travel Day Adjusted	174,713	(2,494)
Travel Period		**
31 - 50 Miles		
Travel Day Adjusted	198,150	(7,289)
Travel Period		**
51 - 100 Miles		
Travel Day Adjusted	61,761	(40,681)
Travel Period	49,552	
Over 100 Miles		
Travel Day Adjusted	69,594	(78,413)
Travel Period	287,780	
Total		
Travel Day Adjusted	1,275,792 (133,784)	
Travel Period	337,332	

¹ The numbers in the parentheses are the travel estimated for overlap trips. These estimates are excluded from the travel day estimates to avoid double-counting. Travel day estimates without overlap trips are referred to as the "Travel Day Section Adjusted". Vehicle miles in commercial driving cannot be shown on this table because individual trip lengths were not collected for commercial driving data.

² Includes linking trips that are part of a travel-period trip. For example, an airplane trip from Washington, DC to Oak Ridge, TN taken on the

travel day, plus ground transportation to and from the airports are considered one trip in the travel period section. However, due to definitional differences, these trips are three separate trips recorded in the travel day section. All of the three trips are referred to as "overlap trips". Consequently, there are overlap trips recorded in the travel day section which are less than 75 miles long.

** Indicates no data available.



Chapter 3

Determinants of Travel : Drivers, Households and Vehicles

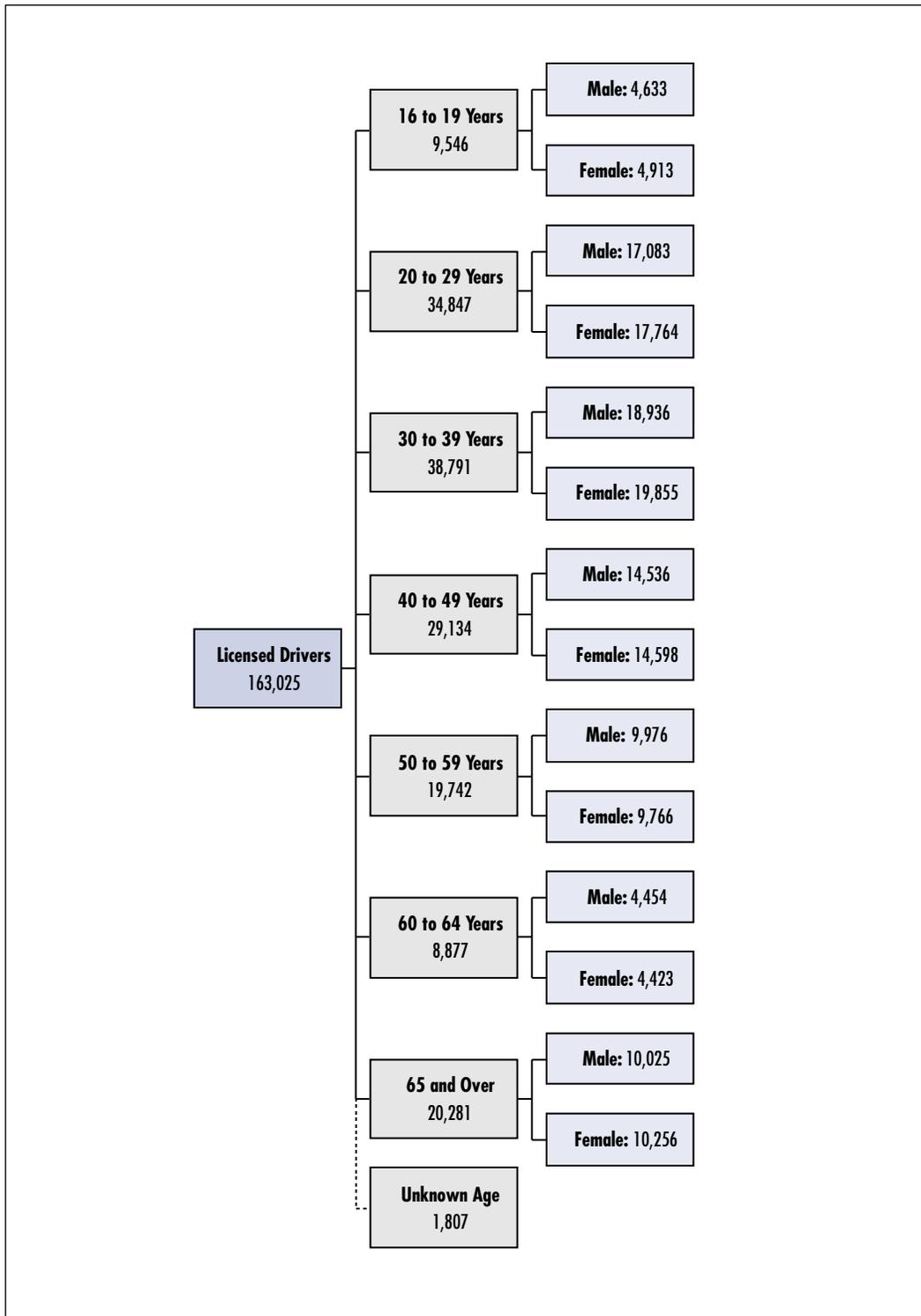


Between 1969 and 1990:

- There was a 58% (60 million) increase in the number of licensed drivers, 38 million of which were women.
- In 1990, women drove 76% more on average than they did in 1969. However, women still drove 7,000 miles less on average than men in a year.
- More vehicles per household and more licensed drivers per household contributed to the increase in total travel. By 1990 the number of household-based vehicles was greater than the number of licensed drivers.

1990 LICENSED DRIVERS BY AGE AND SEX

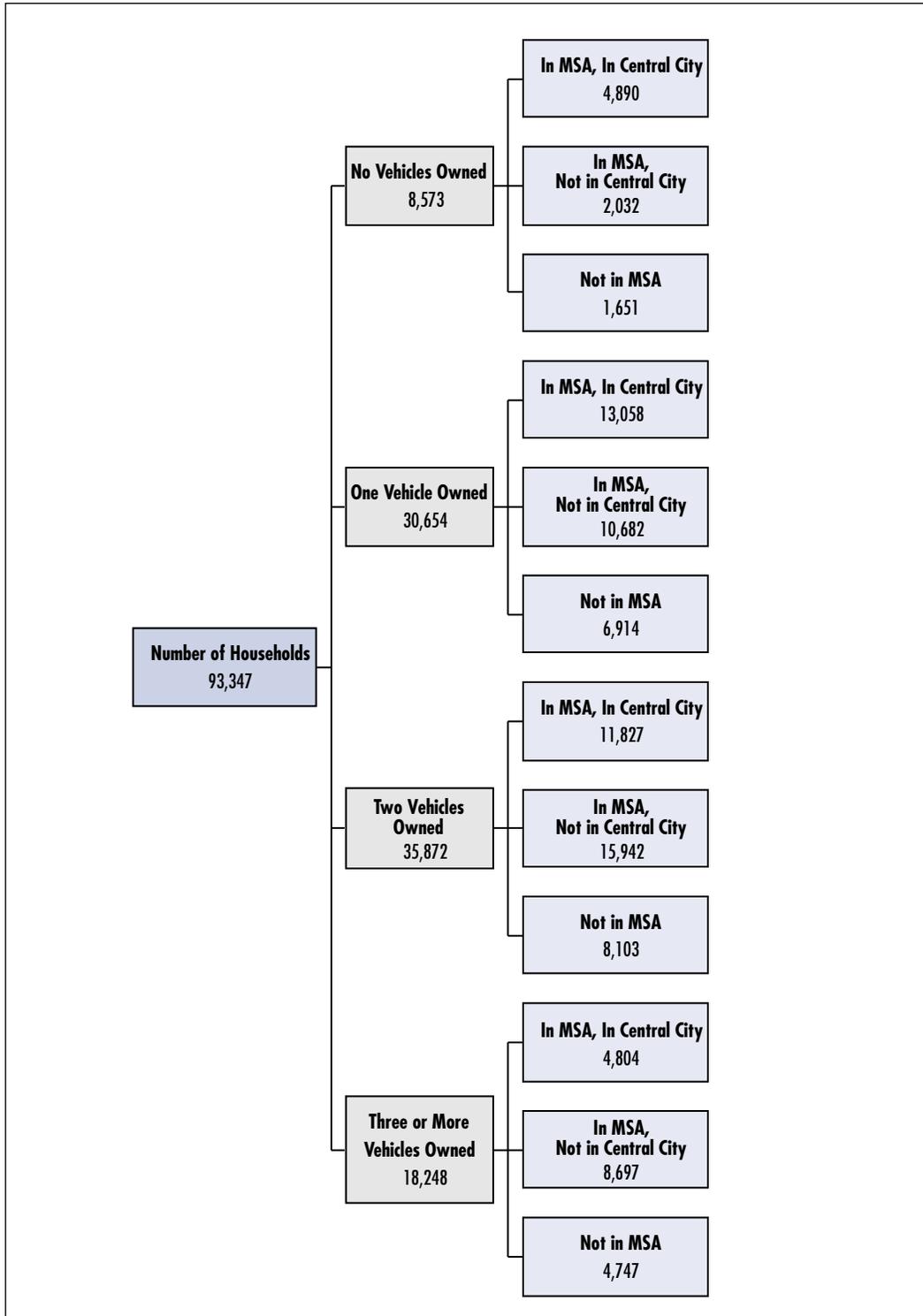
(THOUSANDS)



NATIONAL CENTER OF TRANSPORTATION STATISTICS

1990 HOUSEHOLDS BY NUMBER OF VEHICLES OWNED AND PLACE OF RESIDENCE

(THOUSANDS)



1990 VEHICLES BY VEHICLE TYPE

(THOUSANDS)

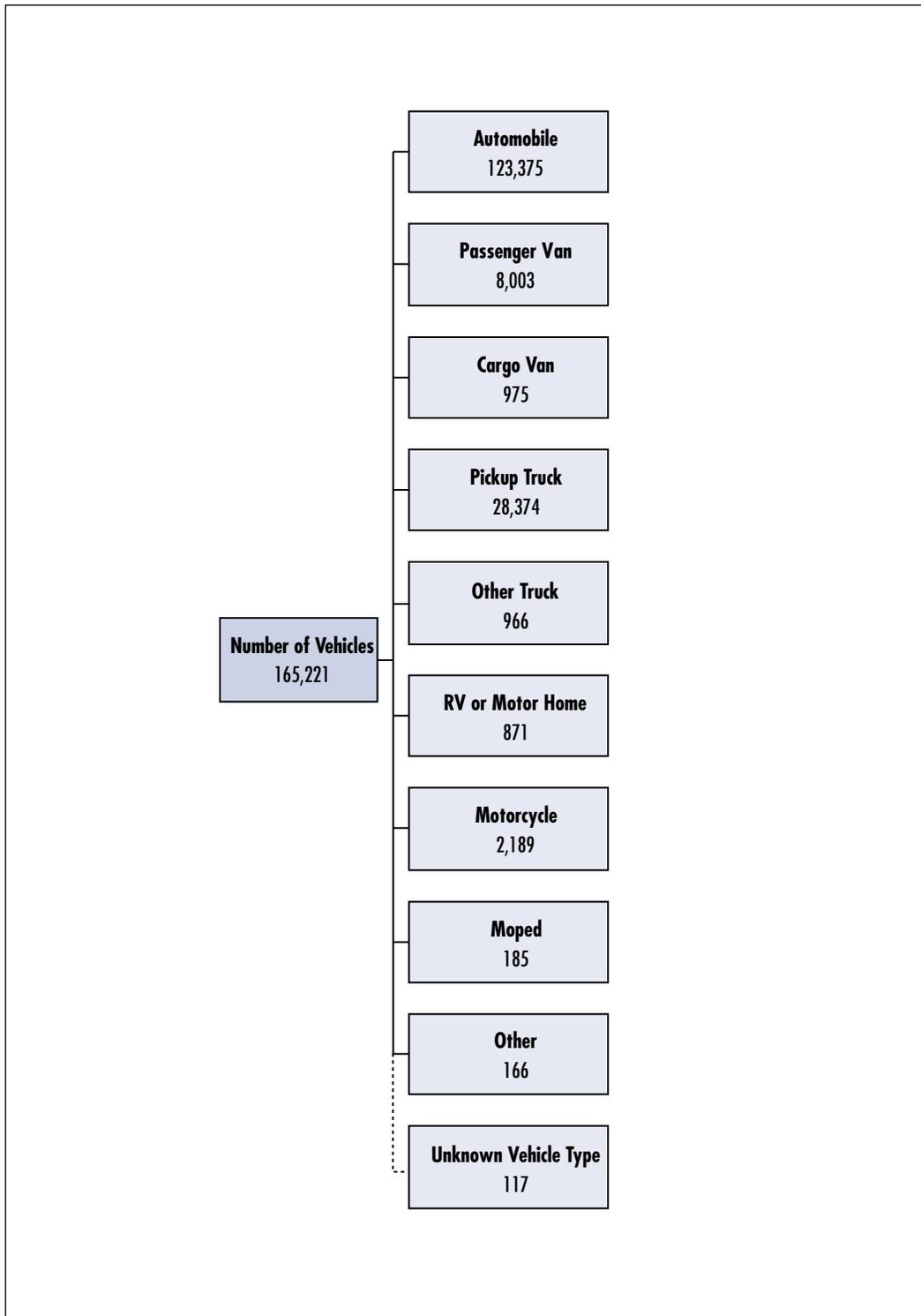


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Chapter 3 Determinants Of Travel

TRAVEL behavior is the result of a complex synthesis of cultural, technological, demographic, economic, and geographic factors. Demographic characteristics of the population bear particularly strong relationships to travel behavior because of the strong associations between demographics and lifecycle stage, roles and functions in society, and resulting activity patterns. Because almost all persons of driving age in the U.S. hold drivers' licenses, the population's age structure is directly related to levels of vehicle ownership and vehicle use. Other factors intervene in important ways. Location (whether in rural, suburban, or central city) determines the proximity of possible destinations and the travel mode options available. Income not only serves as a constraint on travel expenditures, but strongly influences locational choices. In this section we explore the relationships among demographics, income, location, vehicle ownership and travel behavior.

Persons

One of the major demographic trends in the last two decades was the aging of the American population. The percentage in the younger age groups (under 19 years old) decreased, especially for the group 16 years or younger. Conversely, the percentage in the middle age groups (over 35 years old) increased, reflecting the aging of the baby-boom generation. These changes resulted in an increase in the number of licensed drivers.

Another significant demographic change in the past two decades was the increased number of women in the labor force. The proportion of employed women 16 years or older increased by more than 50% between 1969 and 1990 — from 37.1% of the female population 16 years or older being

employed in 1969 to 56.4% in 1990. On the other hand, the employment rate in the male population 16 years or older remained relatively stable (about 73-74%). The increase in female workers contributed to the increase in the number of female drivers. While 61.2% of women 16 years or older were licensed drivers in 1969, this percentage increased to 85.8% in 1990.

Drivers and average annual miles driven

The increases in both female drivers and female workers from 1969 to 1990 contributed to the increase of 76% in driving by women, from 5,411 annual miles per female driver in 1969 to 9,528 miles in 1990. Male drivers also increased their driving but not as dramatically as female drivers. The amount of annual travel increased for all age groups, both female and male, with the largest increase being for drivers between 16 and 19 years old. Households with an annual income less than \$10,000 showed the largest percentage increase in annual miles per licensed driver.

Households

On average, the number of licensed drivers per household decreased, reflecting the decrease in household size. The percentage of households without a vehicle also dropped from 20.6% in 1969 to 9.2% in 1990, while the percentage of households that have three or more household-based vehicles quadrupled. In NPTS, household-based vehicles refer to those that were owned by or available on a regular basis to the household.

Vehicles and average annual miles per vehicle

The total number of household-based vehicles more than doubled between 1969 and 1990, from 72,500,000 vehicles in 1969 to 165,221,000 in 1990. The rate of increase in the number of vehicles surpassed the rate of increase in the number of households, resulting in an increased number of vehicles per household. There were 1.15 vehicles per household in 1969 and 1.77 vehicles per household in 1990.

Vehicles were driven more in 1990 than they were in earlier survey years — 11,600 miles per year in 1969 and 12,458 miles

in 1990. The use of vehicles 10 years and older increased by 41% from 1969 to 1990, the largest increase among all vehicle age groups.

Figure 3.1 better illustrates some of the changes in demographic characteristics and travel activities. Table 3.1 presents the summary statistics on demographic characteristics and on total travel during NPTS survey years (1969, 1977, 1983, and 1990).

FIGURE 3.1

CHANGES IN SUMMARY DEMOGRAPHIC AND TRAVEL PATTERNS
1969, 1977, 1983, AND 1990 NPTS¹

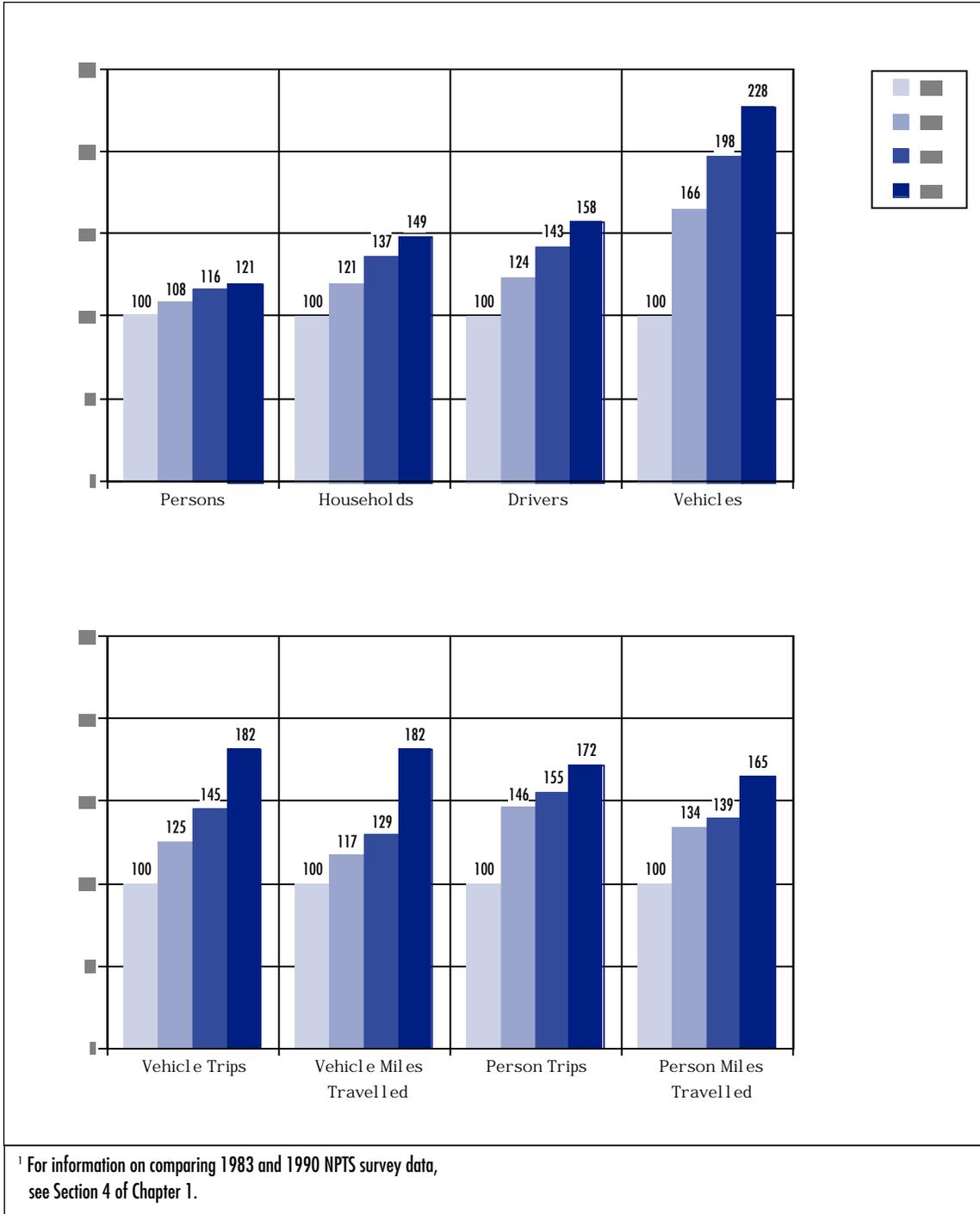


TABLE 3.1

SUMMARY STATISTICS ON DEMOGRAPHIC CHARACTERISTICS AND TOTAL TRAVEL
1969, 1977, 1983, AND 1990 NPTS¹

	1969	1977	1983	1990	Percent Change (69-90)	
					Annual Rate ²	Total Change ³
HOUSEHOLDS (000)						
All	62,504	75,412	85,371	93,347	1.9	49
1 person	10,980	16,214	19,354	22,999	3.6	109
2 persons	18,448	22,925	27,169	30,114	2.4	63
3 persons	10,746	13,046	14,756	16,128	2.0	50
4+ persons	22,330	23,227	24,092	24,106	0.4	8
PERSONS (000)						
All	197,213	213,141	229,453	239,416 ⁴	0.9	21
Under 16	60,100	54,958	53,682	54,303	-0.5	-10
16-19	14,598	16,552	15,268	13,851	-0.2	-5
20-34	40,060	52,252	60,788	59,517	1.9	49
35-64	62,982	66,988	75,353	82,480	1.3	31
65+	19,473	22,391	24,362	26,955	1.6	38
All Male	94,465	102,521	111,514	114,441	0.8	21
All Male - 16 and older	66,652	74,542	83,645	86,432	1.1	30
All Female	102,748	110,620	117,939	124,975	0.8	22
All Female - 16 and older	73,526	83,721	92,080	96,371	1.1	31
All - 5 and older	NA	198,434	212,932	222,101	0.9 ⁵	12 ⁵
LICENSED DRIVERS (000)						
All	102,986	127,552	147,015	163,025 ⁴	2.2	58
Male	57,981	66,199	75,639	80,289	1.6	38
Female	45,005	61,353	71,376	82,707	2.9	84
WORKERS (000)						
All	75,758	93,019	103,244	118,343 ⁴	2.1	56
Male	48,487	55,625	58,849	63,996	1.3	32
Female	27,271	37,394	44,395	54,334	3.3	99
HOUSEHOLD VEHICLES⁶ (000)						
	72,500	120,098	143,714	165,221	4.0	128
HOUSEHOLD VEHICLE TRIPS⁷ (000,000)						
	87,284	108,826	126,874	158,927	2.9	82
HOUSEHOLD VMT⁷ (000,000)						
	775,940	907,603	1,002,139	1,409,600	2.9	82
PERSON TRIPS^{7,8} (000,000)						
	145,146	211,778	224,385	249,562	2.6	72
PERSON MILES OF TRAVEL⁷ (000,000)						
	1,404,137	1,879,215	1,946,662	2,315,300	2.4	65

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Compounded annual rate of percentage change.

³ Percentage change for period.

⁴ Includes "don't know" and "refusals".

⁵ For years 1977 to 1990.

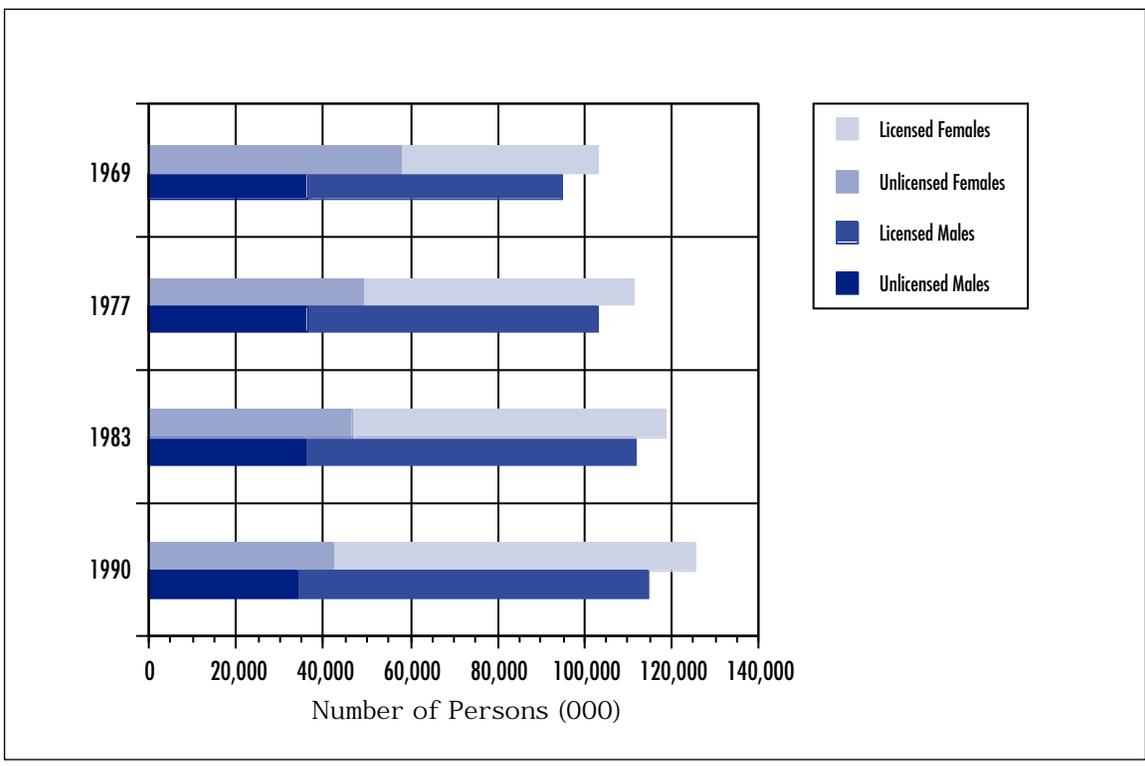
⁶ The 1969 survey includes only automobiles, station wagons, vans, and minibuses as household vehicles.

⁷ Includes trips and travel on sampled travel day only. See Chapter 2 for explanation.

⁸ The 1969 survey does not include walk and bicycle trips.

FIGURE 3.2

**NUMBER OF PERSONS AND NUMBER OF LICENSED DRIVERS BY SEX
1969, 1977, 1983 AND 1990 NPTS
(THOUSANDS)**



This table provides background demographic information by age and sex. The proportion of individuals younger than 30 years old decreased from 43.8% in 1983 to 40.5% in 1990. The proportion of people 65 years or

older increased from 11.4% in 1983 to 12.3% in 1990. These data reflect the aging of the American population. The ratio of male population to female population remained about the same.

TABLE 3.2

**NUMBER OF PERSONS BY AGE AND SEX
 1983 AND 1990 NPTS¹
 (THOUSANDS)**

	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65+	TOTAL ²
1983									
Male	18,994	7,733	20,266	17,219	12,325	10,990	5,397	9,802	102,726
Female	18,177	7,640	20,347	18,805	12,226	12,644	5,846	14,520	110,205
TOTAL	37,171	15,373	40,613	36,024	24,551	23,634	11,243	24,322	212,931
	(17.5%)	(7.2%)	(19.1%)	(16.9%)	(11.5%)	(11.1%)	(5.3%)	(11.4%)	(100.0%)
1990									
Male	18,997	6,727	18,471	19,821	15,035	10,400	4,649	11,325	105,425
Female	17,973	7,124	19,851	21,337	15,734	11,221	5,479	15,615	114,334
TOTAL	36,970	13,851	38,322	41,158	30,769	21,621	10,128	26,940	219,759
	(16.8%)	(6.3%)	(17.4%)	(18.7%)	(14.0%)	(9.8%)	(4.6%)	(12.3%)	(100.0%)
¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.					² Does not include persons whose age and sex were unreported.				

TABLE 3.3

**NUMBER OF PERSONS BY PLACE OF RESIDENCE, 1983 AND 1990 NPTS'
(THOUSANDS)**

	MSA, Central City ²	MSA, Non-Central City ²	Non-MSA	TOTAL
1983	64,225 (30.2%)	88,422 (41.5%)	52,819 (24.8%)	212,932³ (100.0%)
1990	80,030 (36.0%)	92,251 (41.5%)	49,820 (22.4%)	222,101 (100.0%)
Percent Change	24.6	4.3	-5.7	4.3

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² The definition for Central City has changed from the 1983 data to the 1990 data. See Appendix B for details.

³ Includes 3.5% of persons who live in MSA's, but the location in MSA is unknown.

FIGURE 3.3

**DISTRIBUTION OF PERSONS BY PLACE OF RESIDENCE, 1983 AND 1990 NPTS
(THOUSANDS)**

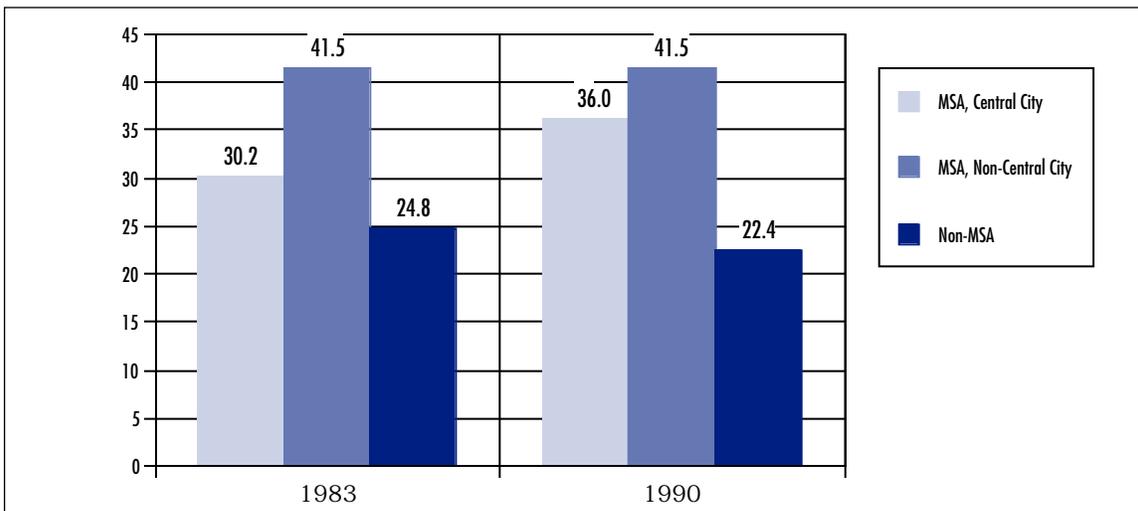


TABLE 3.4

**NUMBER OF PERSONS IN MSA BY MSA SIZE
1983 AND 1990 NPTS'
(THOUSANDS)**

	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000 and Over	TOTAL
1983	23,624 (14.8%)	21,655 (13.5%)	20,456 (12.8%)	45,633 (28.5%)	37,815 (23.6%)	160,113² (100.0%)
1990	21,048 (12.2%)	18,851 (10.9%)	20,429 (11.9%)	43,693 (25.4%)	68,260 (39.6%)	172,281 (100.0%)
Percent Change	-10.9	-12.9	-0.1	-4.3	80.5	7.6

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ² Includes 6.8% of persons living in MSA's, but MSA size is unknown.

FIGURE 3.4

**DISTRIBUTION OF PERSONS BY MSA SIZE
1983 AND 1990 NPTS**

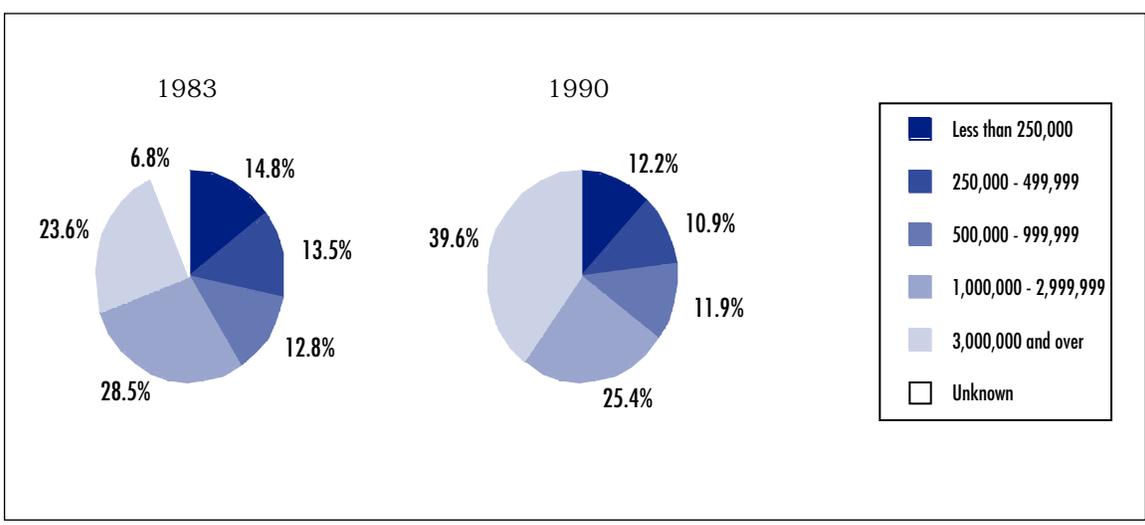


TABLE 3.5

NUMBER OF ADULTS AND LICENSED DRIVERS BY SEX
1967, 1977, 1983 AND 1990 NPTS¹
(THOUSANDS)

	Male			Female			All		
	Adults	Licensed Drivers	%	Adults	Licensed Drivers	%	Adults	Licensed Drivers	%
1969	66,652	57,981	87.0	73,526	45,005	61.2	140,178	102,986	73.5
1977	74,542	66,199	88.8	83,721	61,353	73.3	158,263	127,552	80.6
1983	83,831	73,079	87.2	92,135	70,201	76.2	175,966	143,280	81.4
1990	86,432	80,289 ²	92.9	96,371	82,707 ²	85.8	182,803	163,025 ²	89.2

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ² Includes licensed drivers whose age, sex, or both were unreported.

FIGURE 3.5

PERCENT OF ADULTS HOLDING A DRIVER'S LICENSE BY SEX
1983 AND 1990 NPTS

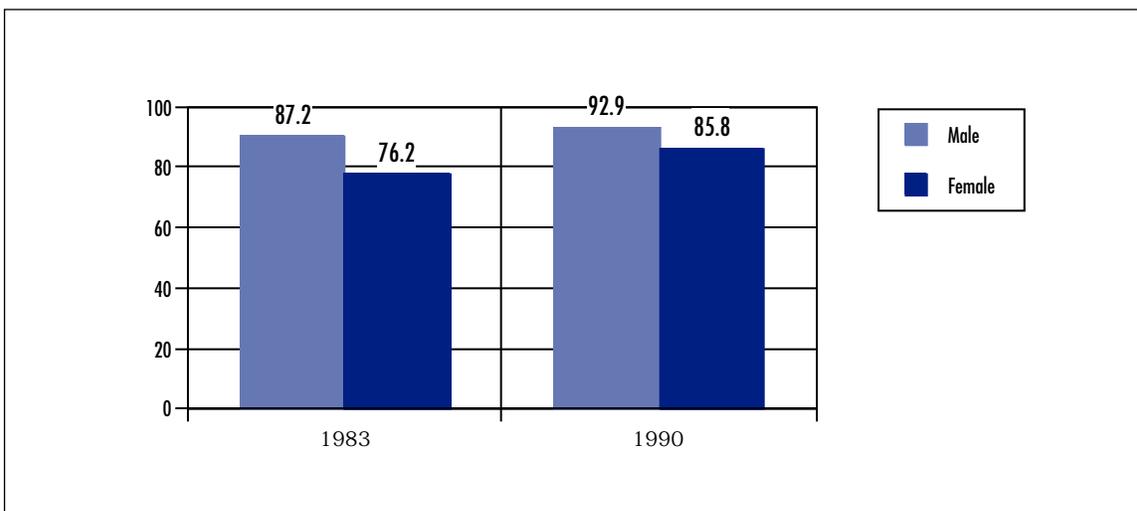


TABLE 3.6

**NUMBER OF ADULTS AND LICENSED DRIVERS BY EMPLOYMENT STATUS AND SEX
1983 AND 1990 NPTS¹
(THOUSANDS)**

Employment Status	1983			1990		
	Adults	Licensed Drivers	% Licensed Drivers	Adults	Licensed Drivers	% Licensed Drivers
Employed Full Time or Part Time						
Male	58,406 (56.5%)	56,010 (57.8%)	95.9	63,590 (54.2%)	61,240 (54.7%)	96.3
Female	44,884 (43.5%)	40,878 (42.2%)	91.1	53,660 (45.8%)	50,710 (45.3%)	93.5
TOTAL	103,290 (100.0%)	96,888 (100.0%)	93.8	117,255² (100.0%)	111,960² (100.0%)	95.5
Not employed						
Male	25,425 (35.0%)	17,069 (36.8%)	67.1	22,839 (34.8%)	19,050 (37.3%)	83.4
Female	47,251 (65.0%)	29,323 (63.2%)	62.1	42,709 (65.2%)	32,000 (62.7%)	74.9
TOTAL	72,676 (100.0%)	46,392 (100.0%)	63.8	65,548 (100.0%)	51,064² (100.0%)	77.9
TOTAL ADULTS	175,966	143,280	81.4	182,803	163,025	89.2

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

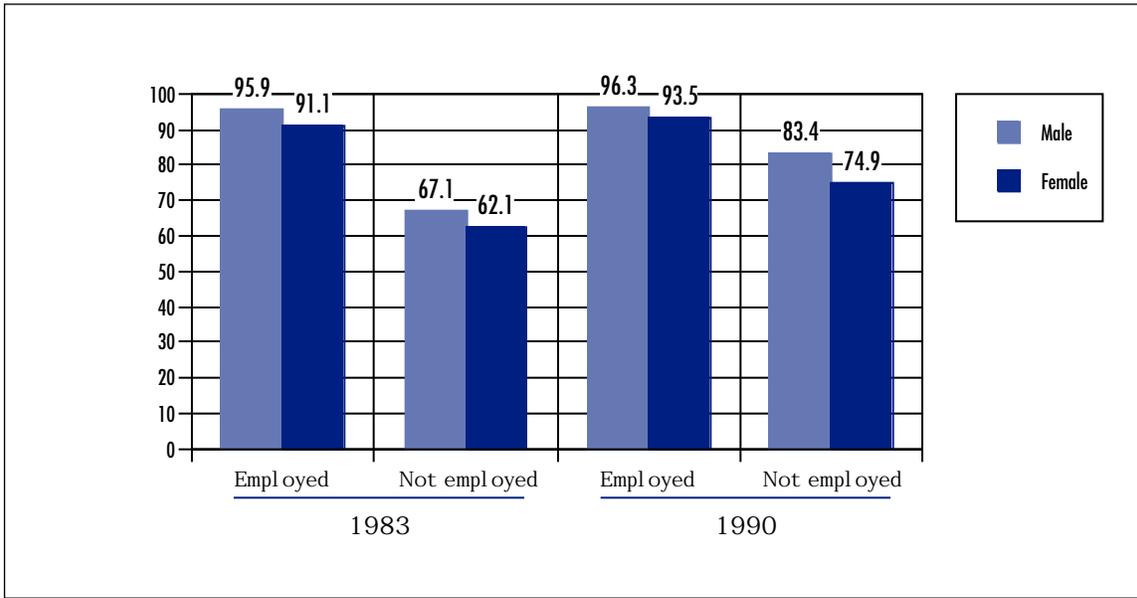
² Includes adults or licensed drivers whose sex was unreported.

A higher percentage of employed adults had a driver's license than those not employed. Between 1983 and 1990, the proportion of adults not employed having a driver's license

increased more prominently (from 63.8% in 1983 to 77.9% in 1990) than the increase in the proportion of employed adults having a driver's license (from 93.8% to 95.5%).

FIGURE 3.6

DISTRIBUTION OF ADULTS POSSESSING DRIVERS' LICENSES BY SEX AND EMPLOYMENT STATUS 1983 AND 1990 NPTS



The number of adults increased 3.9% from 176 million in 1983 to more than 182 million in 1990, while the number of licensed drivers increased by 13.8%. A significantly higher proportion of adults had drivers' licenses in 1990 than in 1983, 89% compared to 81%. Furthermore, a larger percentage of adults who lived outside the central city of an MSA or in non-MSA areas had

drivers' licenses than those who lived inside the central city of an MSA. This pattern may reflect the fact that distances between housing and work places, stores and services often allow central city residents to be less vehicle-dependent. Also, there is more public transportation available inside the central city, making drivers' licenses less essential.

TABLE 3.7

**NUMBER OF ADULTS AND LICENSED DRIVERS BY PLACE OF RESIDENCE
1983 AND 1990 NPTS¹
(THOUSANDS)**

Place of Residence	1983			1990		
	Adults	Licensed Drivers	% Licensed Drivers	Adults	Licensed Drivers	% Licensed Drivers
MSA, Central City	53,499 (30.4%)	39,331 (27.5%)	73.5	66,126 (36.2%)	56,180 (34.5%)	85.0
MSA, Non-Central City	72,554 (41.2%)	61,893 (43.2%)	85.3	76,080 (41.6%)	70,103 (43.0%)	92.1
Non-MSA	43,710 (24.8%)	36,704 (25.6%)	84.0	40,597 (22.2%)	36,742 (22.5%)	90.5
TOTAL	175,966² (100.0%)	143,280³ (100.0%)	81.4	182,803 (100.0%)	163,025 (100.0%)	89.2

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Includes 3.6% of adults living in MSA's but location unknown.

³ Includes 3.7% of licensed drivers living in MSA's but location unknown.

FIGURE 3.7
DISTRIBUTION OF ADULTS POSSESSING DRIVERS' LICENSES BY PLACE OF RESIDENCE
1983 AND 1990 NPTS

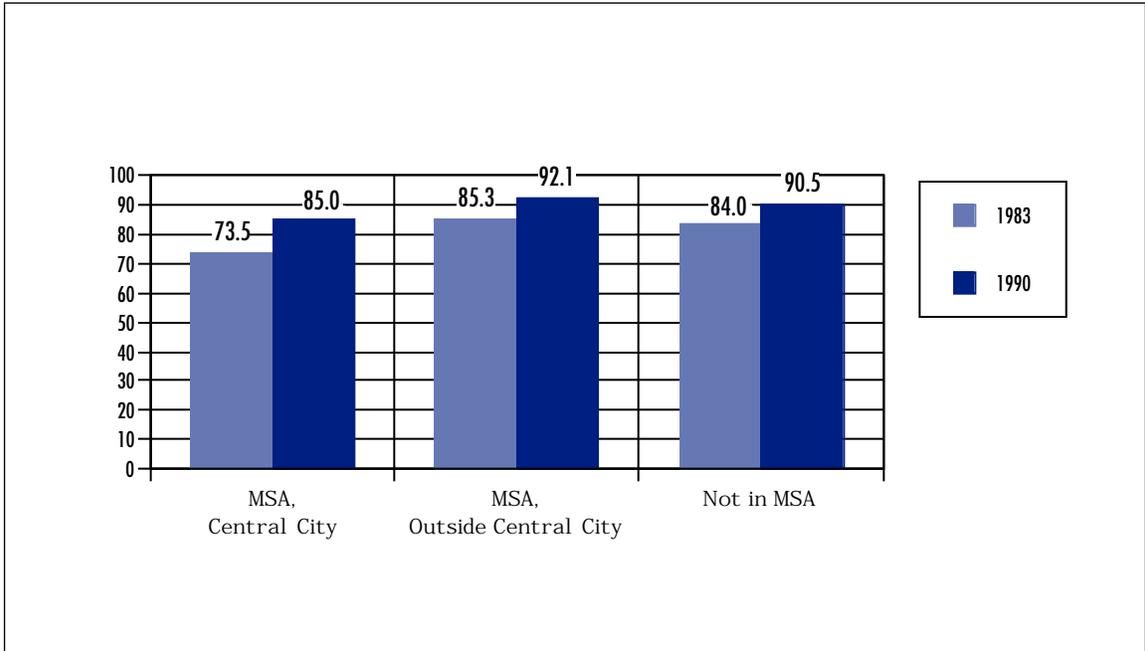


TABLE 3.8

**NUMBER OF ADULTS AND LICENSED DRIVERS BY HOUSEHOLD INCOME
1990 NPTS
(THOUSANDS)**

Annual Household Income (1990 Dollars)	1990		
	Adults	Licensed Drivers	% Licensed Drivers
Less than \$10,000	14,181 (7.8%)	10,300 (6.3%)	72.6
\$10,000 - \$19,999	22,950 (12.6%)	19,199 (11.8%)	83.7
\$20,000 - \$29,999	23,899 (13.1%)	21,628 (13.3%)	90.5
\$30,000 - \$39,999	23,611 (27.7%)	22,102 (13.6%)	93.6
\$40,000 and over	50,700 (12.9%)	48,296 (29.6%)	95.3
Unreported Income	47,462 (25.9%)	41,500 (25.4%)	87.4
TOTAL	182,803 (100.0%)	163,025 (100.0%)	89.2

On average, 89% of adults had a driver's license in 1990. The percentage of licensed drivers in the adult population increased as household income increased. For example, 95.3% of the adults in households with

income of more than \$40,000 had a driver's license, while only 72.6% of the adults in households with income less than \$10,000 had a driver's license.

FIGURE 3.8
DISTRIBUTION OF ADULTS POSSESSING DRIVERS' LICENSES BY HOUSEHOLD INCOME
1990 NPTS

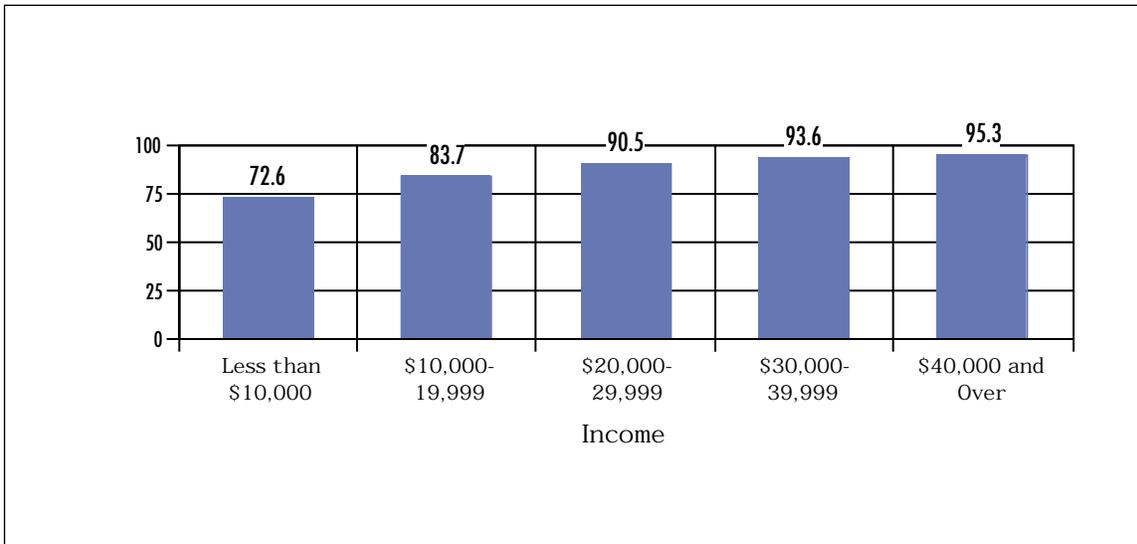


TABLE 3.9

**NUMBER OF LICENSED DRIVERS BY AGE AND SEX
1983 AND 1990 NPTS¹
(THOUSANDS)**

Age Group	Male			Female			All		
	Adults	Licensed Drivers	% Licensed Drivers	Adults	Licensed Drivers	% Licensed Drivers	Adults	Licensed Drivers	% Licensed Drivers
1983									
16 - 19	7,691	5,175	67.3	7,592	4,336	57.1	15,283	9,511	62.2
20 - 34	29,928	26,803	89.6	30,918	26,438	85.5	60,846	53,241	87.5
35 - 54	25,191	22,802	90.5	26,504	22,741	85.8	51,695	45,543	88.1
55 - 64	11,191	10,403	93.0	12,564	9,656	76.9	23,755	20,059	84.4
65+	9,830	7,896	80.3	14,556	7,030	48.3	24,387	14,926	61.2
TOTAL	83,831	73,079	87.2	92,135	70,201	76.2	175,966	143,280	81.4
1990									
16 - 19	6,727	4,633	68.9	7,124	4,913	69.0	13,851	9,546	68.9
20 - 34	28,563	26,727	93.6	30,954	28,021	90.5	59,517	54,748	92.0
35 - 54	30,168	29,029	96.2	31,782	29,328	92.3	61,950	58,357	94.2
55 - 64	9,645	9,229	95.7	10,885	9,057	83.2	20,530	18,285	89.1
65+	11,329	10,025	88.5	15,626	10,255	65.6	26,955	20,281	75.2
TOTAL	86,432	80,289^{2,3}	92.9	96,371	82,707^{2,3}	85.8	182,803	163,025^{2,3}	89.2

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Includes licensed drivers whose age, sex, or both were unreported.

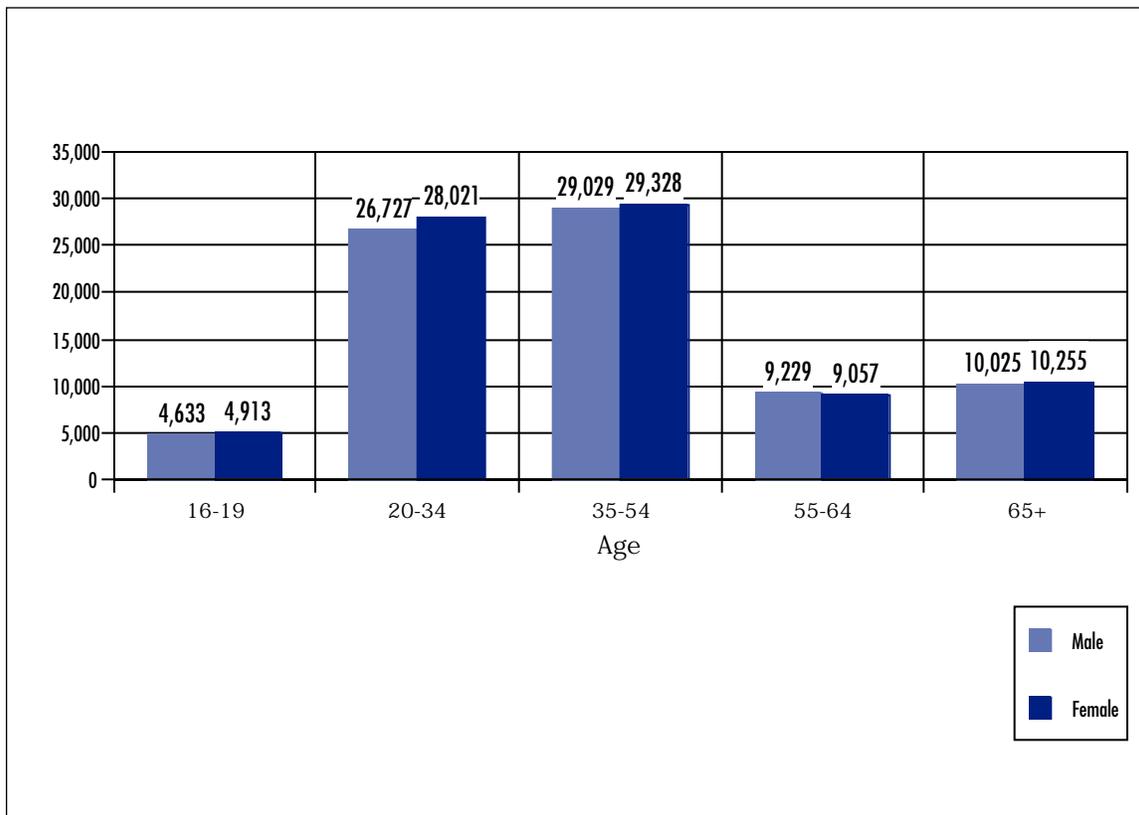
³ Figures are different from those reported in *Highway Statistics*. *Highway Statistics* reported 85,792,450 male drivers and 81,222,800 female drivers, resulting in a total of 167,015,250 drivers in 1990.

The number of females licensed to drive continues to expand over time. Between 1983 and 1990 the number of female drivers grew by 12.5 million while the comparable number for male drivers was 7.2 million. The percentage

of female adults licensed to drive grew from 76.2% in 1983 to 85.8% in 1990. For males, the corresponding data show only modest growth — from 87.2% licensed to drive in 1983 to 92.9% in 1990.

FIGURE 3.9

**NUMBER OF LICENSED DRIVERS BY DRIVER'S AGE AND SEX
1990 NPTS**



From 1969 to 1990, travel by women increased greatly, from 5,411 annual miles per female driver in 1969 to 9,528 miles in 1990 - a 76% increase. This increase can be explained partially by the increases in female workers during the same period. Male drivers also increased their driving but not as dra-

matically as female drivers. The amount of annual travel increased for all age groups, both females and males, with the largest increase being for drivers between 16 and 19 years old.

TABLE 3.10

**AVERAGE ANNUAL MILES PER LICENSED DRIVER BY DRIVER'S AGE AND SEX
1969, 1977, 1983, AND 1990 NPTS'
(MILES)**

Age	1969	1977	1983	1990	Percent Change 69-90	
					Annual Rate ²	Total Change ³
Male						
16-19	5,461	7,045	5,908	9,543	2.7	75
20-34	13,133	15,222	15,844	18,310	1.6	39
35-54	12,841	16,097	17,808	18,871	1.9	47
55-64	10,696	12,455	13,431	15,224	1.7	42
65+	5,919	6,795	7,198	9,162	2.1	55
Average	11,352	13,397	13,962	16,536	1.8	46
Female						
16-19	3,586	4,036	3,874	7,387	3.5	106
20-34	5,512	6,571	7,121	11,174	3.4	103
35-54	6,003	6,534	7,347	10,539	2.7	76
55-64	5,375	5,097	5,432	7,211	1.4	34
65+	3,664	3,572	3,308	4,750	1.2	30
Average	5,411	5,940	6,382	9,528	2.7	76

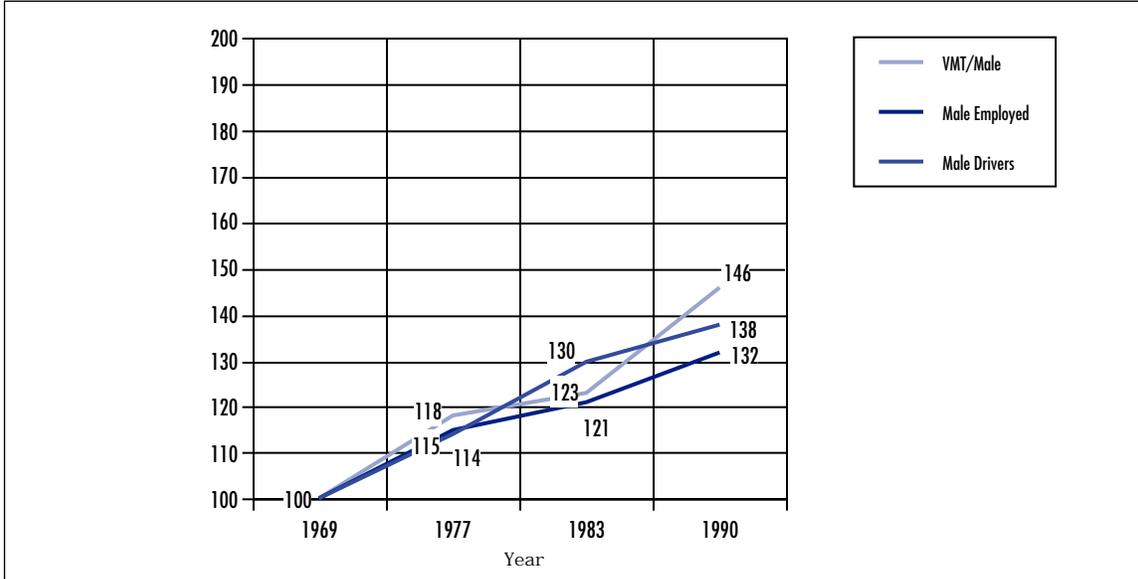
¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Compounded annual rate of percentage change.

³ Percentage change for period.

FIGURE 3.10

CHANGES IN ANNUAL MILES OF TRAVEL PER MALE DRIVER, NUMBER OF MALE LICENSED DRIVERS, AND NUMBER OF MALE WORKERS, 1969, 1977, 1983, AND 1990 NPTS



LICENSED DRIVERS DETERMINANTS OF TRAVEL

FIGURE 3.11

CHANGES IN ANNUAL MILES OF TRAVEL PER FEMALE DRIVER, NUMBER OF FEMALE LICENSED DRIVERS, AND NUMBER OF FEMALE WORKERS, 1969, 1977, 1983, AND 1990 NPTS

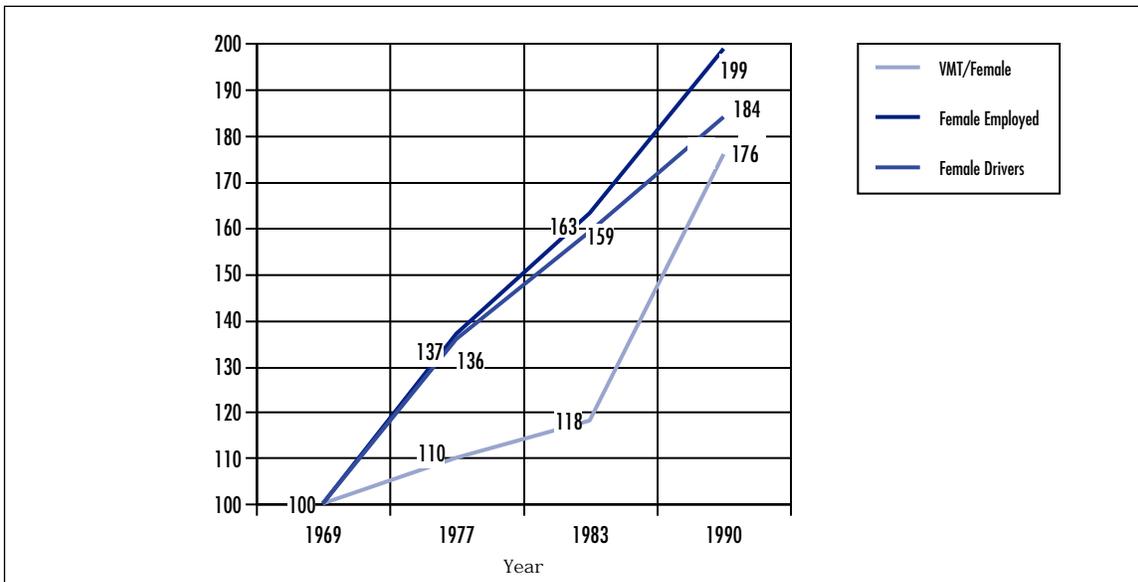


TABLE 3.11

**NUMBER OF LICENSED DRIVERS BY DRIVER'S AGE, SEX, AND ANNUAL MILES DRIVEN
1990 NPTS
(THOUSANDS)**

AGE	Annual Miles Driven						TOTAL ¹
	Less than 5,000	5,000 - 9,999	10,000 - 14,999	15,000 - 24,999	25,000 - 39,999	40,000 and Above	
Male							
16-19	2,035 (43.9%)	401 (8.7%)	517 (11.2%)	465 (10.0%)	159 (3.4%)	209 (4.5%)	4,633 (100.0%)
20-34	4,015 (15.0%)	2,160 (8.1%)	5,909 (22.1%)	6,329 (23.7%)	3,348 (12.5%)	2,165 (8.1%)	26,728 (100.0%)
35-54	3,277 (11.3%)	2,833 (9.8%)	6,467 (22.3%)	7,429 (25.6%)	3,436 (11.8%)	2,492 (8.6%)	29,030 (100.0%)
55-64	1,607 (17.4%)	1,097 (11.9%)	2,196 (23.8%)	1,989 (21.6%)	805 (8.7%)	439 (4.8%)	9,229 (100.0%)
65+	3,376 (33.7%)	1,640 (16.4%)	1,967 (19.6%)	1,316 (13.1%)	293 (2.9%)	108 (1.1%)	10,027 (100.0%)
TOTAL¹	14,451 (18.0%)	8,206 (10.2%)	17,137 (21.3%)	17,710 (22.1%)	8,076 (10.1%)	5,440 (6.8%)	80,289² (100.0%)
Female							
16-19	2,240 (45.6%)	229 (4.7%)	616 (12.5%)	375 (7.6%)	100 (2.0%)	89 (1.8%)	4,913 (100.0%)
20-34	7,572 (27.0%)	3,190 (11.4%)	6,548 (23.4%)	4,392 (15.7%)	1,243 (4.4%)	533 (1.9%)	28,021 (100.0%)
35-54	8,400 (28.6%)	3,983 (13.6%)	6,298 (21.5%)	3,820 (13.0%)	1,286 (4.4%)	567 (1.9%)	29,328 (100.0%)
55-64	3,745 (41.4%)	1,212 (13.4%)	1,426 (15.8%)	674 (7.5%)	164 (1.8%)	69 (0.8%)	9,057 (100.0%)
65+	5,318 (51.9%)	1,059 (10.3%)	967 (9.4%)	337 (3.3%)	28 (0.3%)	33 (0.3%)	10,255 (100.0%)
TOTAL¹	27,670 (33.5%)	9,795 (11.8%)	16,037 (19.4%)	9,689 (11.7%)	2,843 (3.4%)	1,295 (1.6%)	82,707² (100.0%)
¹ Includes licensed drivers whose age, annual miles driven, or both were unreported.				² Figures are different from those reported in Highway Statistics. Highway Statistics reported 85,792,450 male drivers and 81,222,800 female drivers, resulting in a total of 167,015,250 drivers in 1990.			

About a third (30%) of men and of women drive between 5,000 and 15,000 miles per year. However, the difference in the amount of driving between men and women becomes significantly noticeable at both ends of the annual mile distribution. Almost 40% of all men drove more than 15,000 miles per year, but only 17% of women drove that much. Conversely, driving less than 5,000 miles a year was the norm for women in all age groups; however, only most of the “youngest” and the “oldest” male drivers drove less than 5,000 miles a year (Table 3.11).

FIGURE 3.12

DISTRIBUTION OF LICENSED DRIVERS BY SEX AND ANNUAL MILES DRIVEN 1990 NPTS

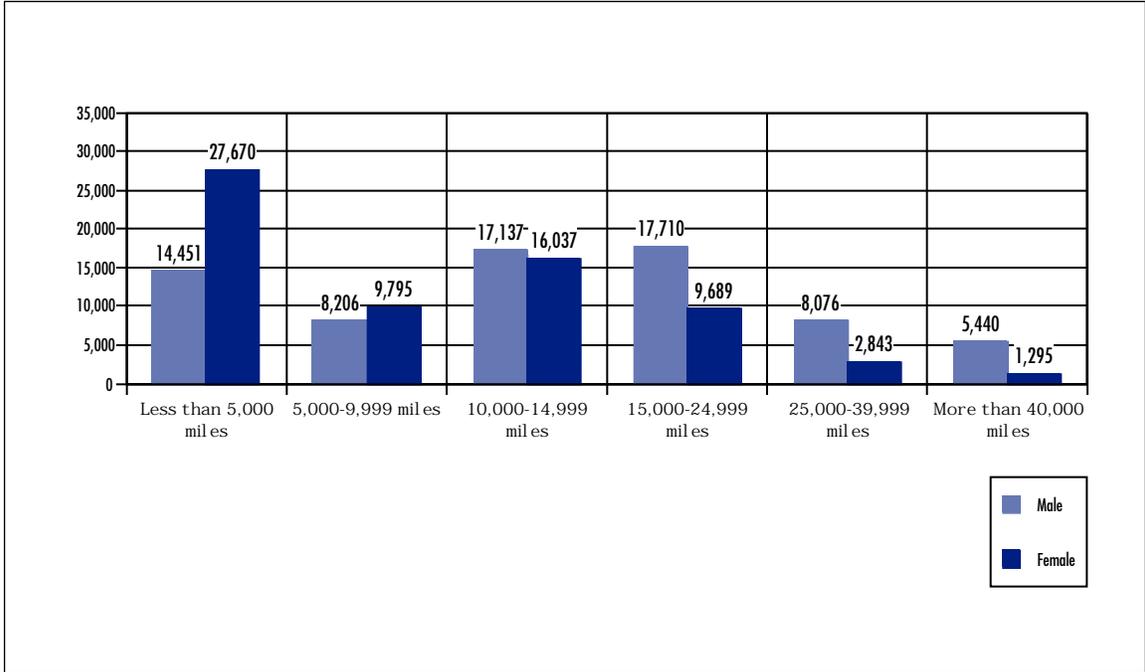


TABLE 3.12

**DISTRIBUTION OF LICENSED DRIVERS BY DRIVER'S AGE, SEX, AND ANNUAL MILES DRIVEN
1990 NPTS
(PERCENT)**

AGE	Annual Miles Driven						TOTAL ¹
	Less than 5,000	5,000 - 9,999	10,000 - 14,999	15,000 - 24,999	25,000 - 39,999	40,000 and Above	
Male							
16-19	14.1	4.9	3.0	2.6	2.0	3.8	5.8
20-34	27.8	26.3	34.5	35.7	41.5	39.8	33.3
35-54	22.7	34.5	37.7	42.0	42.5	45.8	36.2
55-64	11.1	13.4	12.8	11.2	10.0	8.1	11.5
65+	23.4	20.0	11.5	7.4	3.6	2.0	12.5
TOTAL¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female							
16-19	8.1	2.3	3.8	3.9	3.5	6.9	5.9
20-34	27.4	32.6	40.8	45.3	43.7	41.1	33.9
35-54	30.4	40.7	39.3	39.4	45.2	43.8	35.5
55-64	13.5	12.4	8.9	7.0	5.8	5.3	11.0
65+	19.2	10.8	6.0	3.5	1.0	2.5	12.4
TOTAL¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0
¹ Includes licensed drivers whose age, annual miles driven, or both were unreported.							

As expected, employment status has a significant influence in the number of miles driven annually. In 1990, employed men drove 8,400 miles more than those not employed. Likewise, employed women drove

4,500 miles more than their not employed counterparts. In spite of increases in women's driving over time, note that women still drove 7,000 miles less per year than men (Table 3.10).

TABLE 3.13

ESTIMATED AVERAGE ANNUAL MILES PER LICENSED DRIVER BY SEX AND EMPLOYMENT STATUS
1983 AND 1990 NPTS¹

Employment Status	1983	1990	Percent Change
Employed Full Time or Part Time			
Male	15,882	18,461	16.2
Female	7,738	11,180	44.5
TOTAL	12,480	15,280	22.4
Not Employed			
Male	7,654	10,090	31.8
Female	4,473	6,712	50.1
TOTAL	5,663	8,048	42.1
TOTAL DRIVERS	10,288	13,125	27.6

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

TABLE 3.14

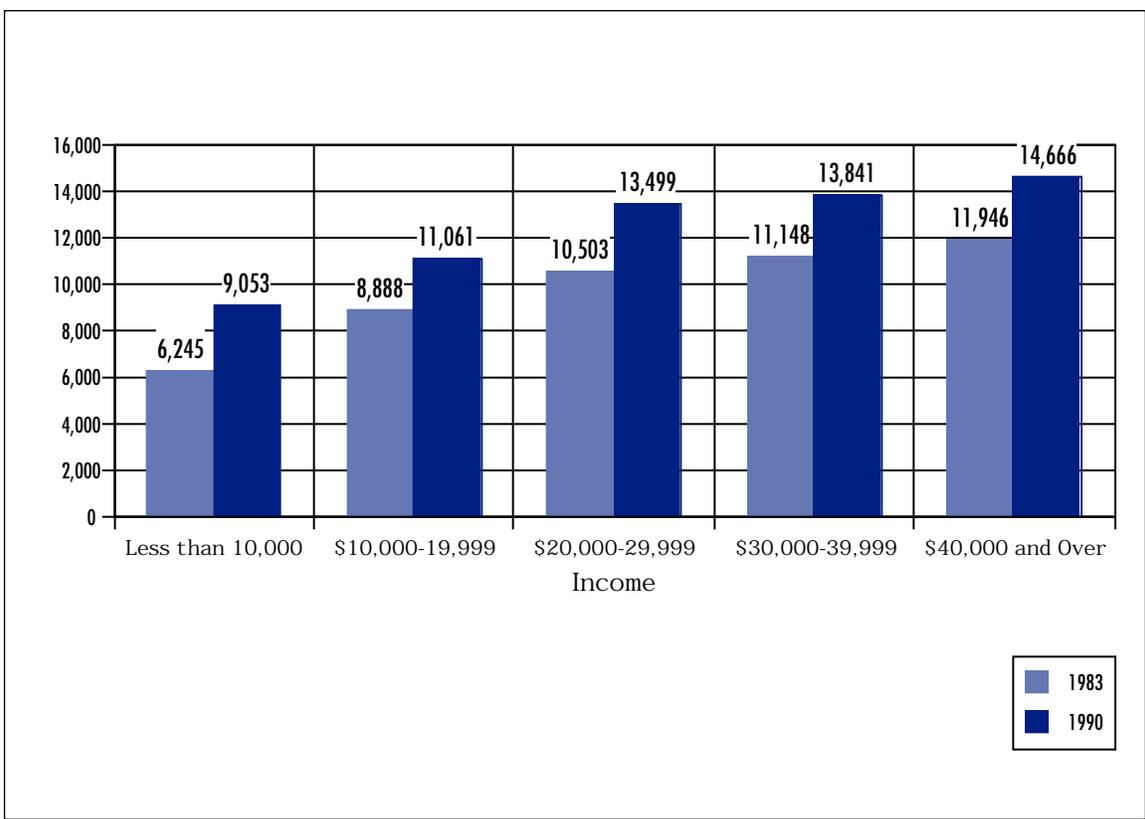
**ESTIMATED AVERAGE ANNUAL MILES DRIVEN PER LICENSED DRIVER BY HOUSEHOLD INCOME
1983 AND 1990 NPTS¹
(INCOME IN 1990 DOLLARS)**

Annual Income (1990 Dollars)	1983	1990	Percent Change
Under \$10,000	6,245	9,053	45.0
\$10,000 - \$19,999	8,888	11,061	24.4
\$20,000 - \$29,999	10,503	13,499	28.5
\$30,000 - \$39,999	11,148	13,841	24.2
\$40,000 and over	11,946	14,666	22.8
TOTAL HOUSEHOLDS	10,288	13,125	27.6

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 3.13

**ESTIMATED AVERAGE ANNUAL MILES DRIVEN PER LICENSED DRIVER BY HOUSEHOLD INCOME
1983 AND 1990 NPTS
(INCOME IN 1990 DOLLARS)**



Over the 1969 to 1990 period, the total number of households increased by 49% while the number of household vehicles increased by 128%. The number of house-

holds without a vehicle declined by 4 million over this time, while the number of households with three or more vehicles grew by 15 million.

TABLE 3.15

HOUSEHOLD VEHICLE OWNERSHIP¹
1969, 1977, 1983, AND 1990 NPTS²
(THOUSANDS)

Number of Household-based Vehicles	1969 ³	1977	1983	1990	Percent Change 69-90	
					Annual Rate ⁴	Total Change ⁵
No vehicle	12,876 (20.6%)	11,538 (15.3%)	11,548 (13.5%)	8,573 (9.2%)	-1.9	-33
One vehicle	30,252 (48.4%)	26,092 (34.6%)	28,780 (33.7%)	30,654 (32.8%)	0.1	1
Two vehicles	16,501 (26.4%)	25,942 (34.4%)	28,632 (33.5%)	35,872 (38.4%)	3.8	117
Three or more vehicles	2,875 (4.6%)	11,840 (15.7%)	16,411 (19.2%)	18,248 (19.5%)	9.2	535
Total Households	62,504	75,412	85,371	93,347	1.9	49
Total Household Vehicles	72,500	120,098	143,714	165,221	4.0	128
Vehicles Per Household	1.16	1.59	1.68	1.77	2.0	53

¹ Includes all vehicles owned by or available on a regular basis to the household.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

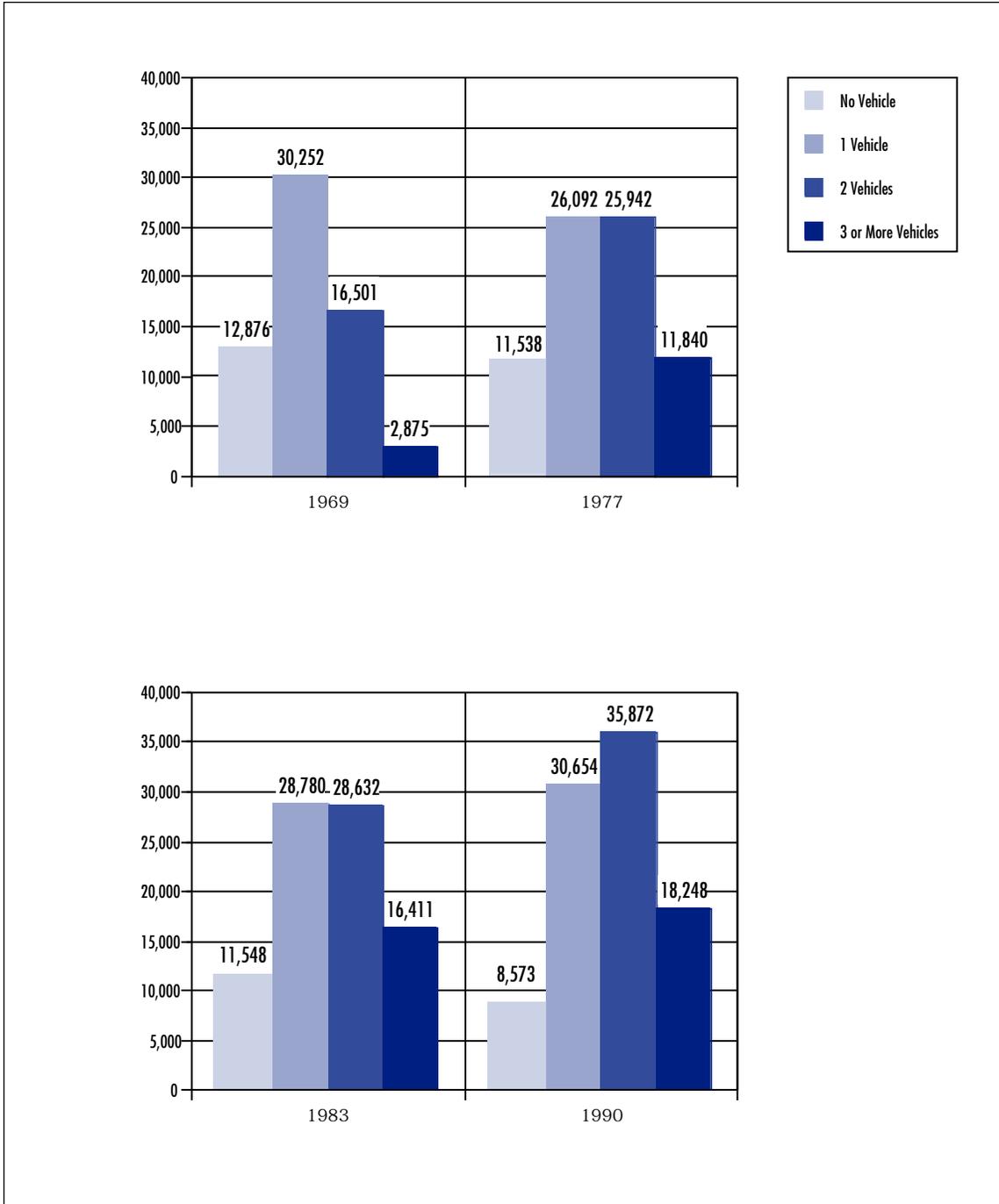
³ The 1969 survey does not include pickups or other light trucks as household vehicles.

⁴ Compounded annual rate of percentage change.

⁵ Percentage change for period.

FIGURE 3.14

HOUSEHOLD VEHICLE OWNERSHIP
1969, 1977, 1983, AND 1990 NPTS



Household vehicle ownership keeps increasing as household size declines. By 1983, the majority of households had at least one vehicle per adult. For example, in 1969,

30.3% of the two-adult households had two or more vehicles, but by 1983 this percentage increased to 65%, and by 1990 it reached 76%.

TABLE 3.16

DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF ADULTS AND
NUMBER OF HOUSEHOLD-BASED VEHICLES¹
1969, 1977, 1983, AND 1990 NPTS²
(PERCENTAGE)

	1969 ³	1977	1983	1990
One-Adult Households				
No vehicle	56.2	39.2	34.0	21.4
One vehicle	42.3	53.2	57.1	63.7
Two vehicles	1.5	5.7	7.1	11.4
Three or more vehicles	.0	1.9	1.8	3.5
TOTAL	100.0	100.0	100.0	100.0
No. of Households (000)	NA	19,381	23,360	28,045
Two-Adult Households				
No vehicle	12.4	7.5	5.8	3.6
One vehicle	57.3	33.1	29.2	20.4
Two vehicles	29.1	48.2	49.7	54.8
Three or more vehicles	1.2	11.2	15.3	21.2
TOTAL	100.0	100.0	100.0	100.0
No. of Households (000)	NA	40,270	45,065	53,407
Three- or More Adult Households				
No vehicle	8.2	5.9	5.6	4.7
One vehicle	32.2	15.9	13.4	14.3
Two vehicles	42.6	34.4	27.1	28.5
Three or more vehicles	17.0	43.8	53.9	52.5
TOTAL	100.0	100.0	100.0	100.0
No. of Households (000)	NA	15,761	16,914	11,119
ALL HOUSEHOLDS (000)	62,504	75,412	85,371⁴	93,347⁴

¹ See Footnote 1 of Table 3.15.

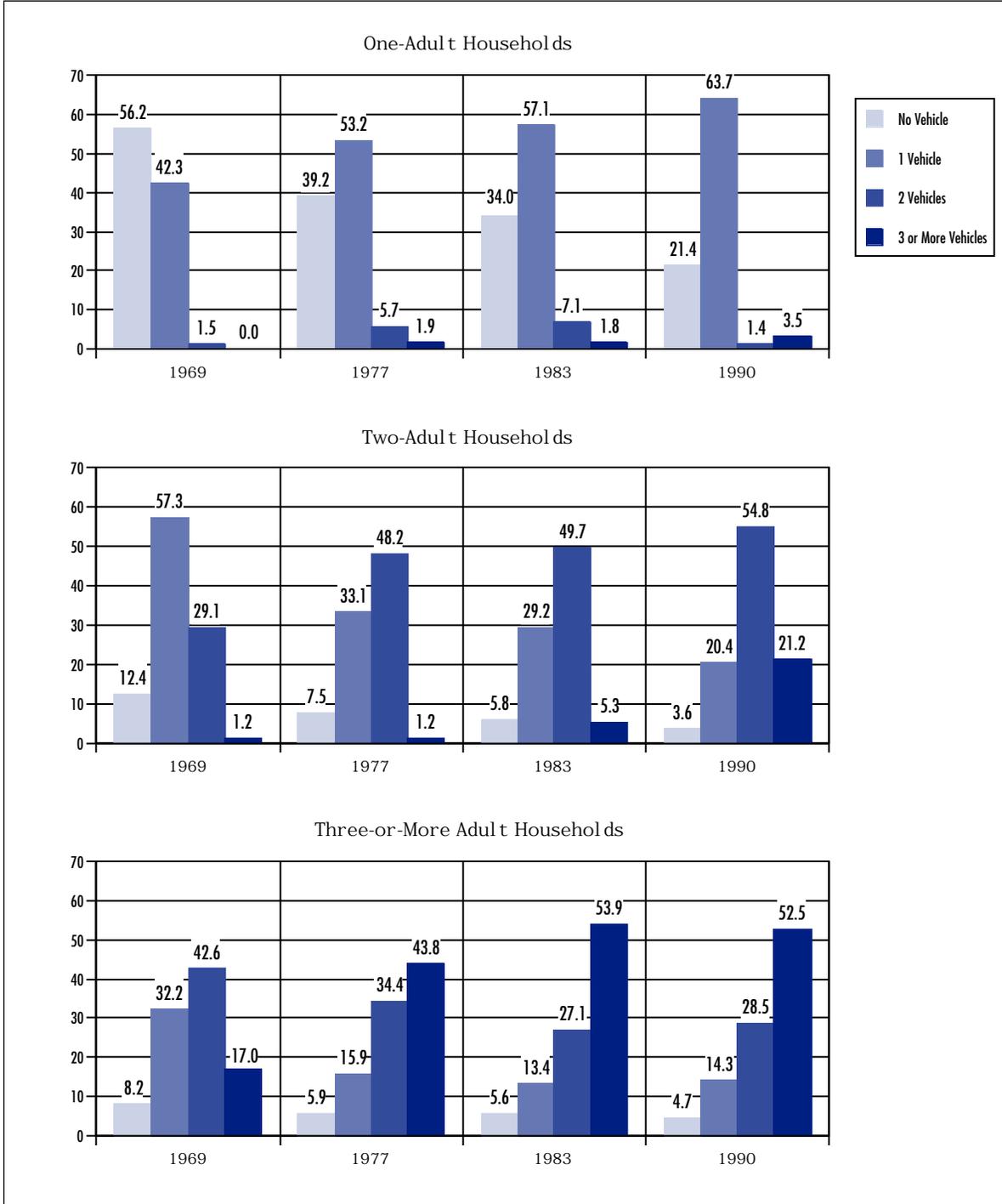
² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ The 1969 survey does not include pickups or other light trucks as household vehicles.

⁴ Includes households where no household adults were reported.

FIGURE 3.15

DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF ADULTS AND NUMBER OF HOUSEHOLD-BASED VEHICLES 1969, 1977, 1983, AND 1990 NPTS



While 9.2% of American households were without any vehicle, households owned an average of 1.77 vehicles in 1990. In the

majority of one-person and two-person households, there was at least one vehicle available per household member.

TABLE 3.17

**DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF HOUSEHOLD MEMBERS AND
 NUMBER OF HOUSEHOLD-BASED VEHICLES¹
 1990 NPTS
 (PERCENT)**

No. of Household-based Vehicles	No. of Household Members							TOTAL
	One	Two	Three	Four	Five	Six-Seven	Eight-Ten	
None	22.2	5.5	5.3	3.1	4.6	6.4	7.3	9.2
One	65.7	27.8	21.5	15.4	16.0	13.4	19.6	32.8
Two	9.4	52.1	42.7	48.8	44.2	39.7	32.9	38.4
Three +	2.7	14.6	30.5	32.7	35.2	40.5	40.2	19.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Households (000)	22,999	30,114	16,128	14,069	6,742	2,831	464	93,347
Vehicles per Household	0.94	1.81	2.07	2.29	2.29	2.49	2.48	1.77

¹ See Footnote 1 of Table 3.15.

In 1990, of the households that reported income, about one-third had incomes of \$20,000 or less. Another third made between \$20,000 and \$40,000, and the final third made over \$40,000. The number of

vehicles per household increased as household income increased. The average number of vehicles per household increased from 1.7 vehicles in 1983 to 1.8 in 1990.

TABLE 3.18

NUMBER OF HOUSEHOLDS AND NUMBER OF VEHICLES PER HOUSEHOLD BY HOUSEHOLD INCOME
1983 AND 1990 NPTS¹
(INCOME IN 1990 DOLLARS)

	1983		1990	
	Number of Households (000)	Number of Vehicles per Household	Number of Households (000)	Number of Vehicles per Household
Under \$10,000	18,016 (21.1%)	0.8	9,252 (9.9%)	1.0
\$10,000 - \$19,999	18,437 (21.6%)	1.4	13,011 (13.9%)	1.4
\$20,000 - \$29,999	15,694 (18.4%)	1.8	12,294 (13.2%)	1.7
\$30,000 - \$39,999	12,065 (14.1%)	2.1	11,323 (12.1%)	2.0
\$40,000 and over	21,167 (24.8%)	2.4	21,704 (23.3%)	2.3
Unreported	NA ²	NA ²	25,762 (27.6%)	1.7
TOTAL	85,371 (100.0%)	1.7	93,347 (100.0%)	1.8

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Includes 6.8% of persons living in MSA's, but MSA size is unknown.

TABLE 3.19

**NUMBER OF HOUSEHOLDS BY HOUSEHOLD COMPOSITION
1983 AND 1990 NPTS¹
(THOUSANDS)**

Household Composition	1983	1990
Single Adult, No Children	16,955 (19.9%)	15,505 (16.6%)
Two or More Adults, No Children	22,629 (26.5%)	24,182 (25.9%)
Single Adult, Youngest Child Under 6	1,942 (2.2%)	1,698 (1.8%)
Two or More Adults, Youngest Child Under 6	13,776 (16.1%)	13,791 (14.8%)
Single Adult, Youngest Child 6-15	3,394 (4.0%)	2,382 (2.6%)
Two or More Adults, Youngest Child 6-15	12,277 (14.4%)	12,332 (13.2%)
Single Adult, Youngest Child 16 or Older	838 (1.0%)	819 (0.9%)
Two or More Adults, Youngest Child 16 or Older	4,618 (5.4%)	4,444 (4.8%)
Single Adult, Retired, No Children	2,400 (2.8%)	7,642 (8.2%)
Two or More Adults, Retired, No Children	6,546 (7.7%)	9,777 (10.5%)
TOTAL	85,375 (100.0%)	93,347² (100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

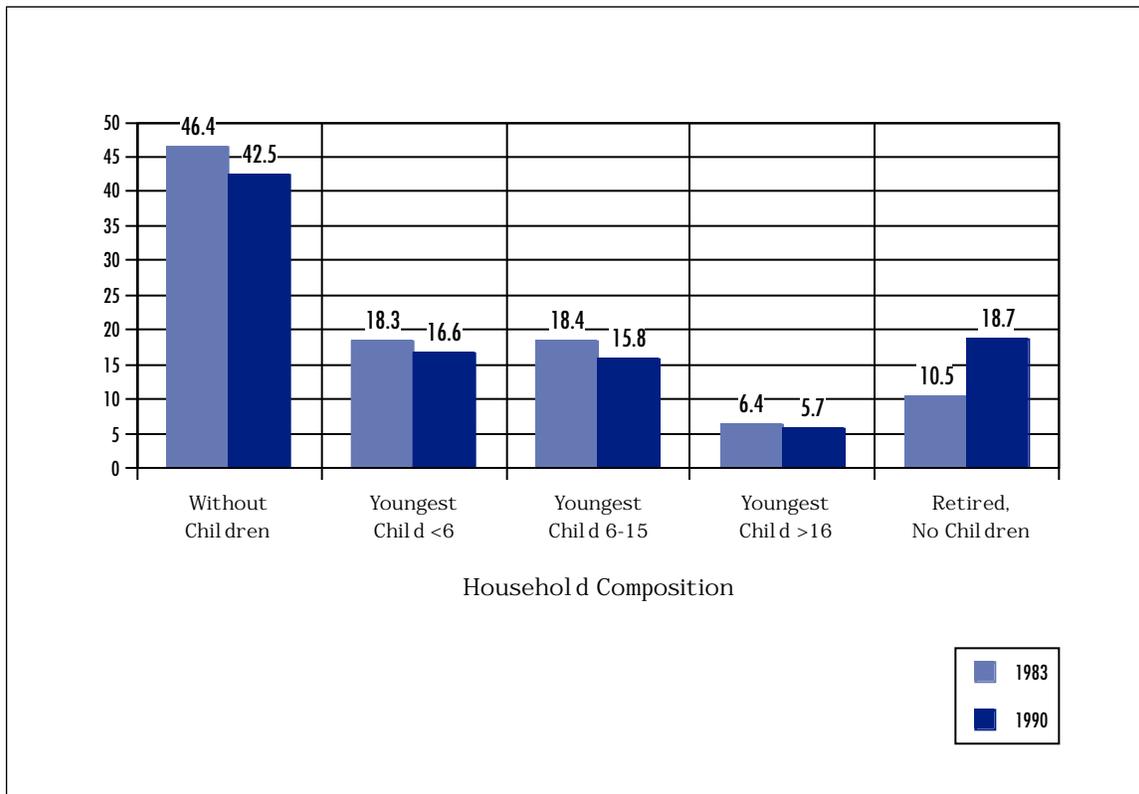
² Includes 775 households for which household composition was unreported.

There were more than 93,000 households in 1990, an increase of 9% from 1983. Households with retired adults and no children increased from 10.5% of all households in 1983 to 18.7% in 1990. In general, households with a single non-retired adult

decreased between 1983 and 1990 both in number of households and in relative percent. However, households with two or more non-retired adults increased slightly in the number of households, but decreased in relative percent.

FIGURE 3.16

DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD COMPOSITION 1983 AND 1990 NPTS



In 1990, approximately 50% of American households were located in metropolitan areas with a population of more than

1 million. Twenty-three percent of the households were outside metropolitan areas.

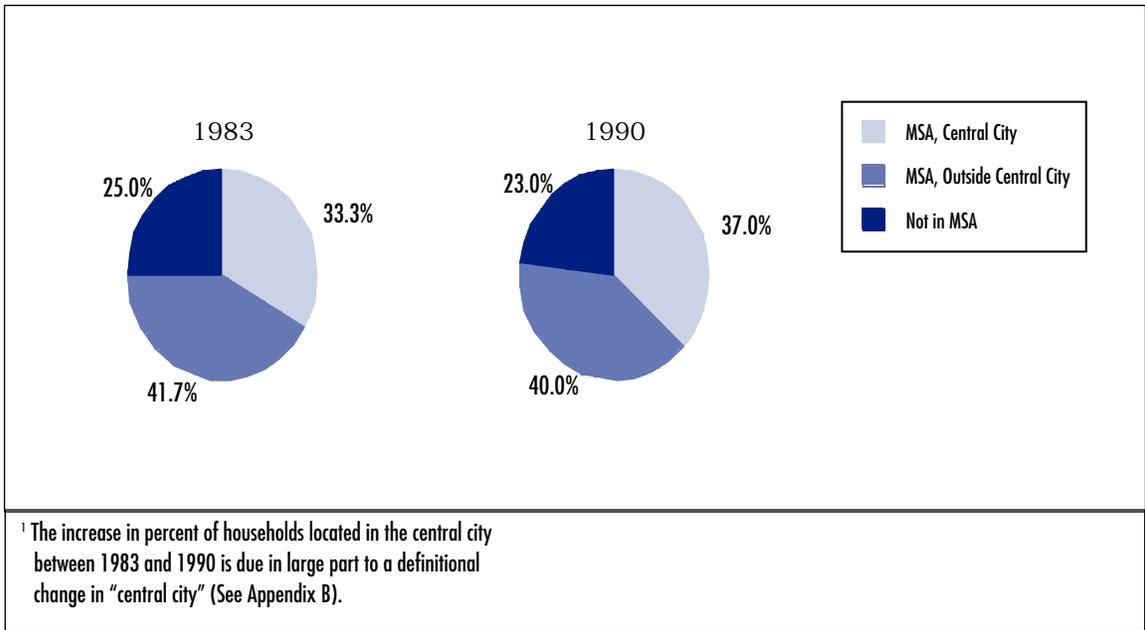
TABLE 3.20

**NUMBER OF HOUSEHOLDS BY PLACE OF RESIDENCE AND MSA SIZE
1990 NPTS
(THOUSANDS)**

MSA Size	Place of Residence			TOTAL
	MSA, Central City	MSA, Non-Central City	Non-MSA	
Less than 250,000	5,083 (56.4%)	3,922 (43.6%)	0	9,005 (100%)
250,000-499,999	3,942 (49.7%)	3,997 (50.3%)	0	7,939 (100%)
500,000-999,999	4,599 (52.1%)	4,221 (47.9%)	0	8,820 (100%)
1,000,000-2,999,999	8,783 (48.3%)	9,413 (51.7%)	0	18,196 (100%)
3,000,000 or more	12,172 (43.5%)	15,800 (56.5%)	0	27,972 (100%)
Not in MSA	0 (0%)	0 (0%)	21,415 (100%)	21,415 (100%)
TOTAL	34,579 (37.0%)	37,353 (40.0%)	21,415 (23.0%)	93,347 (100%)

FIGURE 3.17

**DISTRIBUTION OF HOUSEHOLDS BY PLACE OF RESIDENCE¹
1983 AND 1990 NPTS**



More than half of American households were located in areas where public transportation was available. As expected, most central cities within MSA's had public transportation available. Note that in NPTS, availability of public transportation is based on the

respondent's perception. It may be that household members indicating that public transportation was not available may not be aware of its existence because they did not use it.

TABLE 3.21
NUMBER OF HOUSEHOLDS BY PLACE OF RESIDENCE AND AVAILABILITY OF PUBLIC TRANSPORTATION¹
1990 NPTS
(THOUSANDS)

Public Transportation Available	Place of Residence			TOTAL
	MSA, Central City	MSA, Non-Central City	Non-MSA	
Yes	28,700 (83.0%)	21,220 (56.8%)	4,472 (20.9%)	54,392 (58.3%)
No	5,471 (15.8%)	15,670 (42.0%)	16,770 (78.3%)	37,911 (40.6%)
Other ²	408 (1.2%)	463 (1.2%)	173 (0.8%)	1,044 (1.1%)
TOTAL	34,579 (100.0%)	37,353 (100.0%)	21,415 (100.0%)	93,347 (100.0%)

¹ Availability of public transportation means that there is a stop or station for bus, subway, elevated rail, commuter train or streetcar within 2 miles of the respondent's residence.

² Includes households where availability of public transportation was unreported.

From 1977 to 1990, households located outside the central city of an MSA or in non-MSA areas tended to own more vehicles than households located inside the central city of

an MSA. Among the many reasons contributing to this difference is the greater use of walking, bicycling and public transit in the central city.

TABLE 3.22

AVERAGE NUMBER OF VEHICLES PER HOUSEHOLD BY PLACE OF RESIDENCE
1969, 1977, 1983, AND 1990 NPTS¹

	1969 ²	1977	1983	1990
MSA, Central City	1.0	1.3	1.3	1.5
MSA, Non-Central City	1.5	1.7	1.9	1.9
Non-MSA	1.2	1.7	1.9	1.9
TOTAL	1.2	1.6	1.7	1.8

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² The 1969 survey does not include pickups and other light trucks as household vehicles. The 1977, 1983 and 1990 surveys include pickup trucks and other trucks, motorcycles, etc.

The number of household vehicles increased at a compounded annual rate of 2.5% during the period from 1977 to 1990. While the majority of household vehicles were automob-

iles, the share of household vehicles that were trucks or vans increased from 16.9% in 1977 to 23.3% in 1990, with significant increases in minivans and pickup trucks.

TABLE 3.23

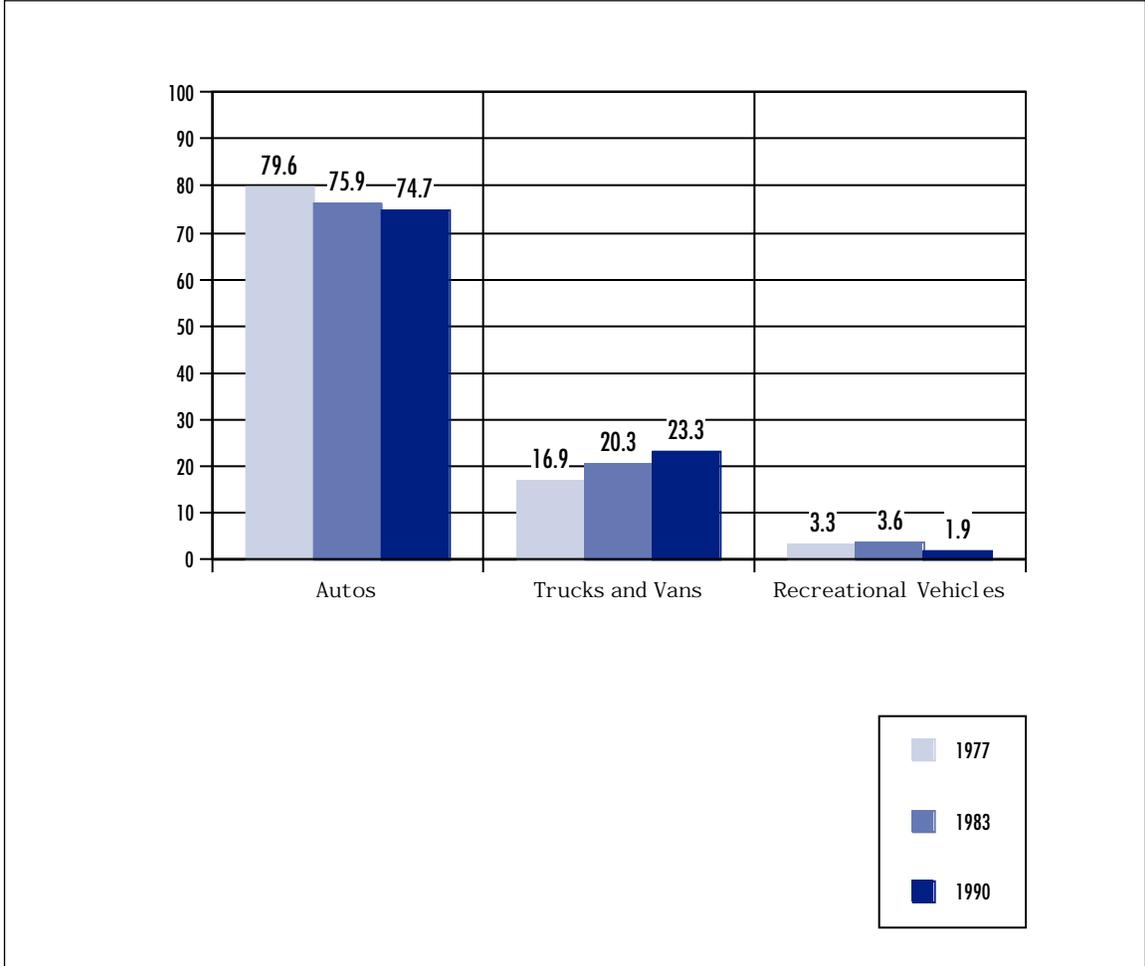
**NUMBER OF HOUSEHOLD VEHICLES BY VEHICLE TYPE
1977, 1983, AND 1990 NPTS¹
(THOUSANDS)**

Vehicle Type	1977	1983	1990
Autos			
	95,598 (79.6%)	109,079 (75.9%)	123,420 (74.7%)
Trucks And Vans			
Van/Minibus	2,402 (2.0%)	3,305 (2.3%)	8,096 (4.9%)
Other Van	961 (0.8%)	1,868 (1.3%)	991 (0.6%)
Pickup	15,373 (12.8%)	21,845 (15.2%)	28,418 (17.2%)
Other Truck	1,561 (1.3%)	2,156 (1.5%)	991 (0.6%)
Subtotal	20,297 (16.9%)	29,174 (20.3%)	38,496 (23.3%)
Recreational Vehicles			
RV/Motor Home	480 (0.4%)	719 (0.5%)	826 (0.5%)
Motorcycle	3,243 (2.7%)	3,593 (2.5%)	2,148 (1.3%)
Moped	240 (0.2%)	862 (0.6%)	165 (0.1%)
Subtotal	3,963 (3.3%)	5,174 (3.6%)	3,139 (1.9%)
Other Vehicles			
	240 (0.2%)	287 (0.2%)	166 (0.1%)
TOTAL	120,098 (100.0%)	143,714 (100.0%)	165,221 (100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 3.18

**DISTRIBUTION OF VEHICLES BY VEHICLE TYPE
1977, 1983, AND 1990 NPTS**



While 31.4% of household automobiles in 1969 were less than two years old, this percentage decreased to 15.6% in 1990. American households continued to keep

their cars and trucks for a longer period of time. The percentage of household automobiles that were 10 or more years old increased from 10.8 in 1969 to 29.9 by 1990.

TABLE 3.24

**DISTRIBUTION OF VEHICLES BY VEHICLE AGE
1969, 1977, 1983, AND 1990 NPTS¹
(PERCENTAGE)**

Vehicle Age (years)	1969 ²	1977			1983			1990		
	TOTAL	Auto	Truck/Van ³	TOTAL	Auto	Truck/Van ³	TOTAL	Auto	Truck/Van ³	TOTAL
0-2	31.4	27.3	29.9	27.8	19.9	16.2	19.0	15.6	19.7	16.6
3-5	33.2	30.4	25.6	29.6	27.8	26.0	27.3	27.7	27.2	27.5
6-9	24.6	26.7	21.1	25.7	27.1	24.5	26.8	26.8	20.9	25.3
10 or more	10.8	15.6	23.4	16.9	25.1	33.2	26.9	29.9	32.2	30.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average Age (years)	5.1	5.5	6.4	5.6	7.2	8.8	7.6	7.6	8.0	7.7

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Includes pickups with camper.

² The 1969 survey does not include pickups and other light trucks as household vehicles.

FIGURE 3.19

DISTRIBUTION OF HOUSEHOLD-BASED AUTOMOBILES BY VEHICLE AGE
1977, 1983, AND 1990 NPTS

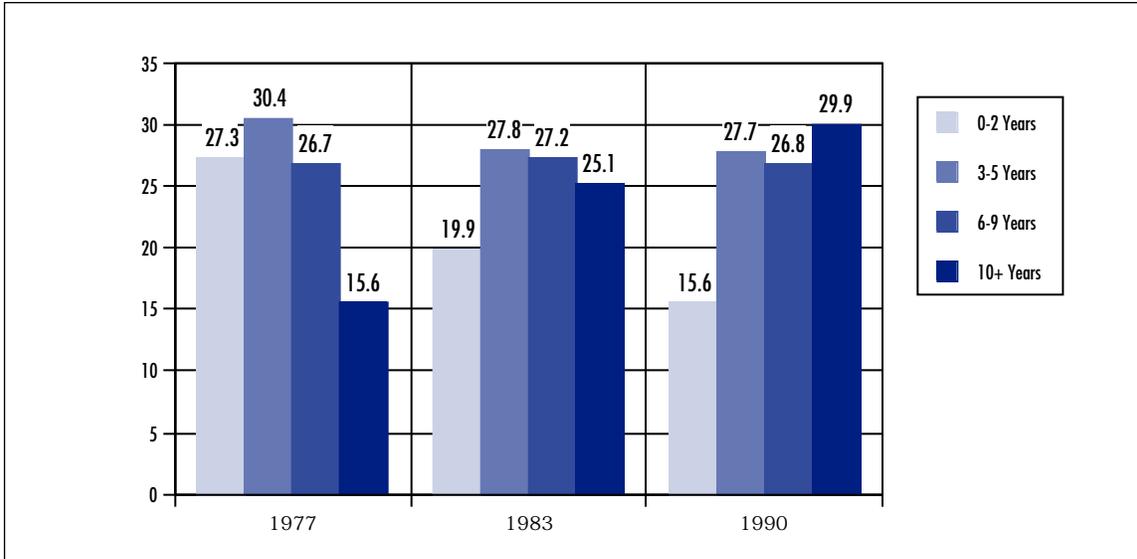


FIGURE 3.20

DISTRIBUTION OF HOUSEHOLD-BASED TRUCKS BY VEHICLE AGE
1977, 1983, AND 1990 NPTS

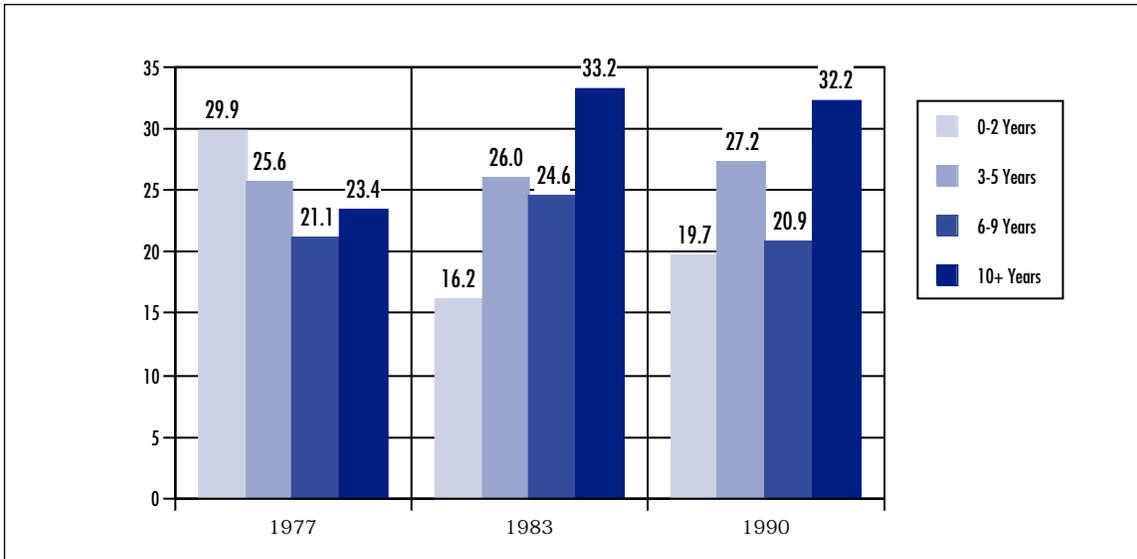


TABLE 3.25

**DISTRIBUTION OF HOUSEHOLD VEHICLES BY VEHICLE AGE AND VEHICLE TYPE
1983 AND 1990 NPTS¹
(PERCENT)**

Vehicle Age (years)	1983				1990			
	Autos	Truck/Van ²	RVs	TOTAL ³	Autos	Truck/Van ²	RVs	TOTAL
≤1	12.2	10.6	3.2	11.8	6.4	8.8	11.6	7.0
2	7.7	5.6	1.6	7.2	9.2	10.9	4.8	9.6
3	8.2	6.5	0.0	7.8	8.9	9.7	5.8	9.1
4	9.7	9.7	12.3	9.7	9.1	9.1	2.3	9.0
5	9.9	9.8	8.2	9.8	9.7	8.4	3.1	9.4
6	8.1	7.7	3.8	8.0	9.0	7.5	6.1	8.6
7	7.8	6.2	16.8	7.6	7.9	6.3	5.7	7.5
8	5.3	5.0	6.1	5.2	5.2	3.8	4.5	4.9
9	6.0	5.7	12.5	6.0	4.6	3.3	1.2	4.3
≥10	25.1	33.2	35.4	26.9	30.0	32.2	54.9	30.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Vehicles (000)	109,094	29,069	650	143,714⁴	120,712	37,110	821	158,643
Average Age (Years)	7.2	8.8	10.7	7.6	7.6	8.0	10.4	7.7

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

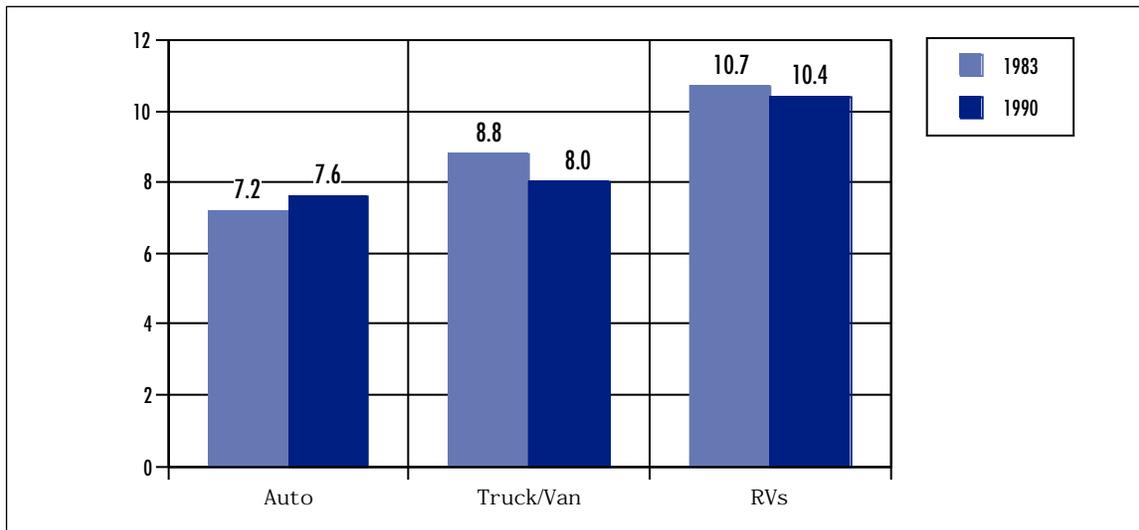
³ Includes others.

² Includes pickups with camper.

⁴ Includes vehicles where vehicle type is unknown.

FIGURE 3.21

**AVERAGE AGE OF HOUSEHOLD VEHICLES BY VEHICLE TYPE
1983 AND 1990 NPTS**



In 1990, vehicles of all ages were driven more than they were in earlier survey years. The increased usage of older vehicles is particularly noteworthy. The increase in miles

per vehicle was broadly reflected in all ownership groups and all number of adult groups (Tables 3.27 and 3.28).

TABLE 3.26

**AVERAGE ANNUAL MILES PER VEHICLE BY VEHICLE AGE
1969, 1977, 1983, AND 1990 NPTS¹**

Vehicle Age (years)	1969	1977	1983	1990	Percent Change 69-90	
					Annual Rate ²	Total Change ³
0-2	15,700	14,460	15,292	16,811	0.3	7
3-5	11,200	11,074	11,902	13,706	1.0	22
6-9	9,700	9,199	9,253	12,554	1.2	29
10 or more	6,500	6,755	7,023	9,176	1.7	41
Average⁴	11,600	10,679	10,315	12,458	0.3	7

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ³ Percentage change for period.
² Compounded annual rate of percentage change. ⁴ Includes miles where vehicle age was unreported.

FIGURE 3.22

**AVERAGE ANNUAL MILES PER VEHICLE BY VEHICLE AGE
1969, 1977, 1983, AND 1990 NPTS**

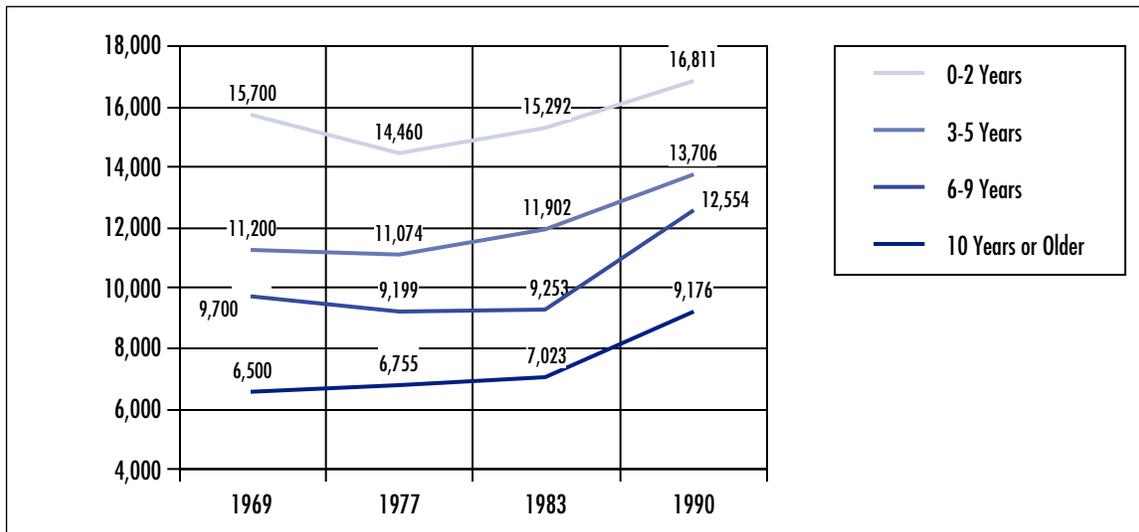


TABLE 3.27

**AVERAGE ANNUAL MILES PER VEHICLE BY NUMBER OF HOUSEHOLD-BASED VEHICLES¹
1969, 1977, 1983, AND 1990 NPTS²**

Number of Vehicles	1969 ³	1977	1983	1990	Percent Change	
					69-90 ⁴	69-90 ⁵
One	10,800	10,051	10,257	12,125	0.6	12
Two	12,000	10,874	10,854	12,978	0.4	8
Three or more	12,800	10,791	9,793	11,972	-0.3	-6
TOTAL	11,600	10,679	10,315	12,458	0.3	7

¹ See Footnote 1 of Table 3.15.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ The 1969 survey does not include pickups or other light trucks as household vehicles.

⁴ Compounded annual rate of percentage change.

⁵ Percentage change for period.

FIGURE 3.23

**AVERAGE ANNUAL MILES PER VEHICLE BY NUMBER OF HOUSEHOLD-BASED VEHICLES
1969, 1977, 1983, AND 1990 NPTS**

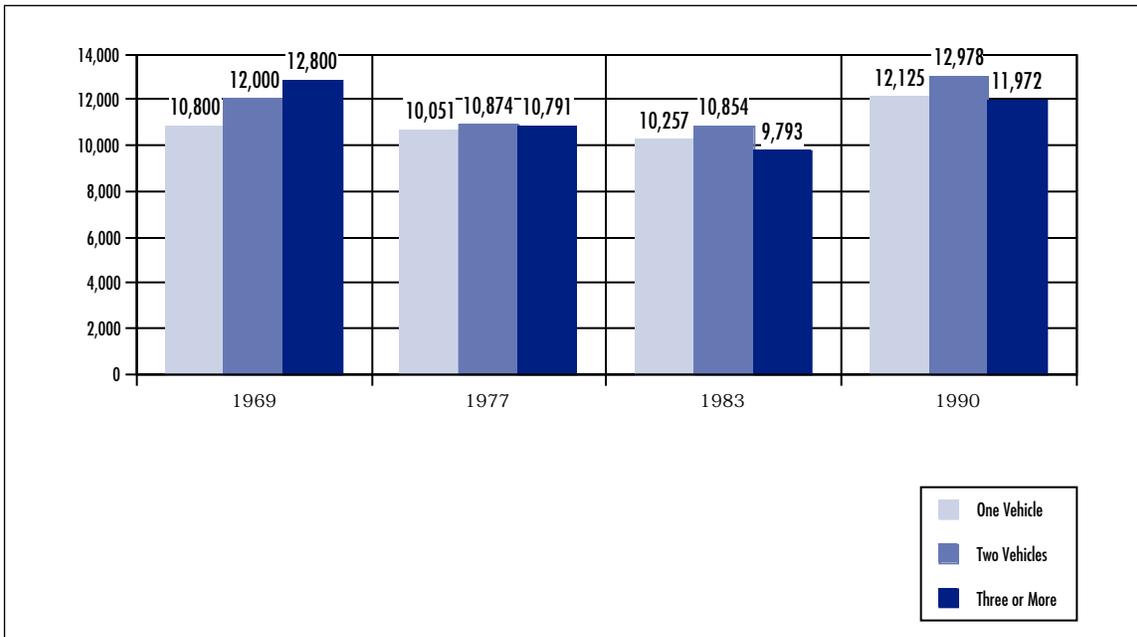
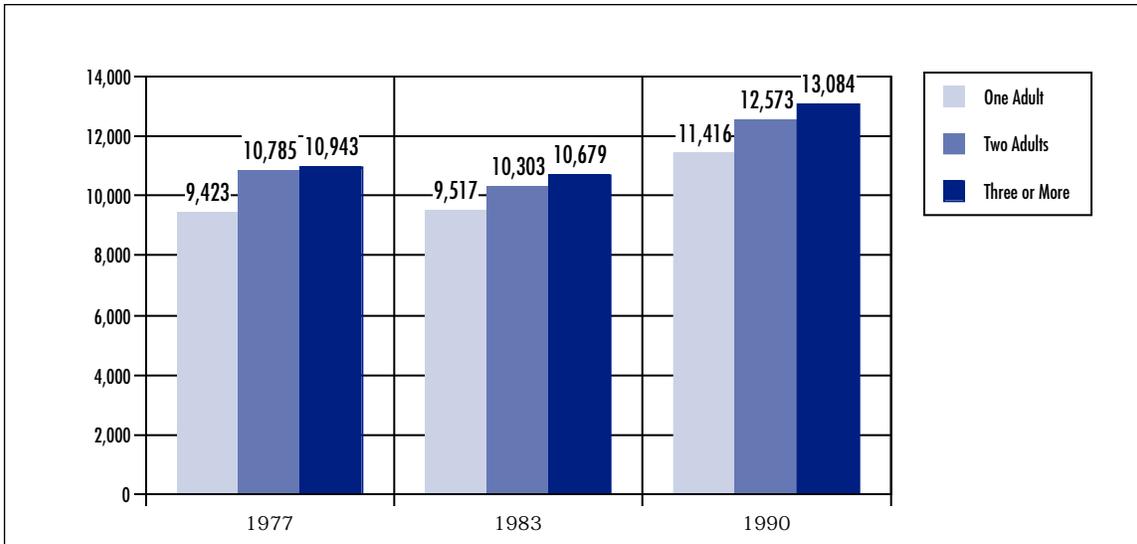


FIGURE 3.24

AVERAGE ANNUAL MILES PER VEHICLE BY NUMBER OF ADULTS IN HOUSEHOLD
1977, 1983, AND 1990 NPTS



VEHICLES DETERMINANTS OF TRAVEL

TABLE 3.28

AVERAGE ANNUAL MILES PER VEHICLE BY NUMBER OF ADULTS IN HOUSEHOLD
1977, 1983, AND 1990 NPTS¹

Number of Adults	1977	1983	1990	Percent Change 77-90	
				Annual Rate ²	Total Change ³
One	9,423	9,517	11,416	1.5	21
Two	10,785	10,303	12,573	1.2	17
Three or more	10,943	10,679	13,084	1.4	20
TOTAL	10,679	10,315	12,458	1.2	17

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ² Compounded annual rate of percentage change.
³ Percentage change for period.

TABLE 3.29

AVERAGE ANNUAL MILES PER VEHICLE BY NUMBER OF ADULTS IN HOUSEHOLD AND NUMBER OF HOUSEHOLD-BASED VEHICLES¹ 1983 AND 1990 NPTS²

Household	1983	1990	<u>Percent Change</u> 83-90
One Adult			
One vehicle	9,617	11,692	22
Two vehicles	10,195	11,108	9
Three or more vehicles	7,212	10,386	44
TOTAL	9,517	11,416	20
Two Adults			
One vehicle	10,790	12,543	16
Two vehicles	10,999	13,126	19
Three or more vehicles	9,044	11,640	29
TOTAL	10,303	12,573	22
Three Adults			
One vehicle	10,636	15,473	45
Two vehicles	11,466	13,263	16
Three or more vehicles	10,244	12,660	24
TOTAL	10,597	12,961	22
Four or More Adults			
One vehicle	12,294	14,456	18
Two vehicles	11,205	14,871	33
Three or more vehicles	10,955	13,074	19
TOTAL	11,034	13,378	21
Average	10,315	12,458	21

¹ Includes all vehicles owned by or available on a regular basis to the household.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

THE following five tables present data based on the principal driver's characteristics. In the 1990 NPTS, the household member who used a particular household vehicle more often than other household members was identified. This type of data provides a link between driver characteristics and vehicle attributes. As expected, autos and vans comprised the great majority (95%) of all vehicles in which women were identified as principal drivers.

In contrast, pickups accounted for a significant portion (28.6%) of all vehicles in which men were the principal drivers (Table 3.31). In households with a woman and a man driver and two vehicles, the woman tends to drive the newer vehicle. Principal drivers between the ages of 30 and 65 were more likely to drive pickup trucks than drivers in other age groups.

TABLE 3.30

**NUMBER OF VEHICLES BY PRINCIPAL DRIVER'S AGE AND VEHICLE TYPE
1990 NPTS
(THOUSANDS)**

Principal Driver's Age ¹	Auto, Van	Pickup	Other POV	TOTAL ²
16-19	4,266	562	51	4,884
	(87.4%)	(11.5%)	(1.1%)	(100.0%)
	(4.1%)	(2.5%)	(1.6%)	(3.8%)
20-29	21,160	3,946	589	25,700
	(82.3%)	(15.4%)	(2.3%)	(100.0%)
	(20.4%)	(17.5%)	(17.9%)	(19.8%)
30-39	25,691	5,825	973	32,489
	(79.1%)	(17.9%)	(3.0%)	(100.0%)
	(24.7%)	(25.9%)	(29.6%)	(25.0%)
40-49	19,290	4,612	668	24,578
	(78.5%)	(18.8%)	(2.7%)	(100.0%)
	(18.6%)	(20.5%)	(20.3%)	(18.9%)
50-59	12,690	3,463	465	16,618
	(76.4%)	(20.8%)	(2.8%)	(100.0%)
	(12.2%)	(15.4%)	(14.1%)	(12.8%)
60-64	5,639	1,383	138	7,160
	(78.8%)	(19.3%)	(1.9%)	(100.0%)
	(5.4%)	(6.1%)	(4.2%)	(5.5%)
65+	14,040	2,583	346	16,969
	(82.7%)	(15.2%)	(2.0%)	(100.0%)
	(13.5%)	(11.5%)	(10.5%)	(13.1%)
TOTAL²	103,972	22,529	3,288	129,842
	(80.1%)	(17.1%)	(2.7%)	(100.0%)
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Information based only on records where principal driver is known.

² Includes vehicles where principal driver age, vehicle type or both were unreported.

FIGURE 3.25

**DISTRIBUTION OF VEHICLES BY PRINCIPAL DRIVER'S AGE AND VEHICLE TYPE
1990 NPTS**

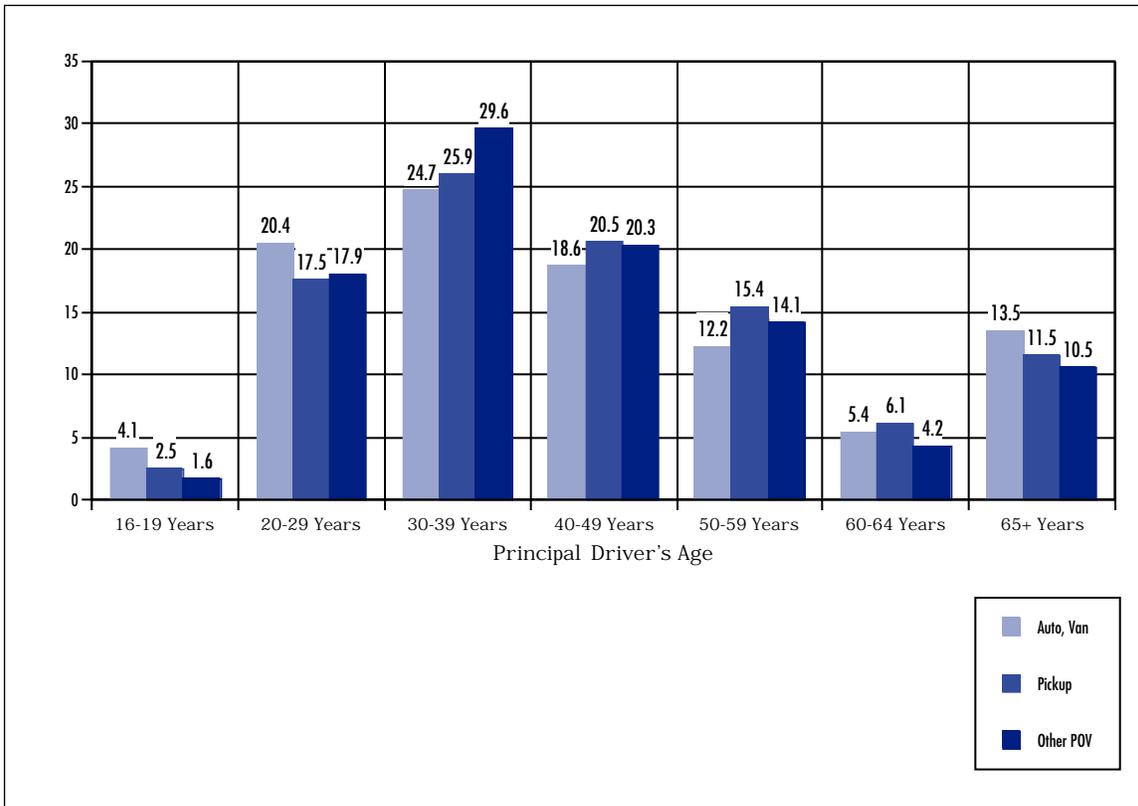


TABLE 3.31

**NUMBER OF VEHICLES BY PRINCIPAL DRIVER'S SEX, VEHICLE AGE AND VEHICLE TYPE
1990 NPTS
(THOUSANDS)**

Vehicle Type	Vehicle Age	Principal Driver ¹		TOTAL ²
		Male	Female	
Auto, Van				
	0-2	7,093 (10.3%)	9,645 (15.8%)	16,740 (12.9%)
	3-6	14,844 (21.5%)	23,483 (38.6%)	38,330 (29.5%)
	7+	23,294 (33.8%)	23,882 (39.2%)	47,180 (36.3%)
	Subtotal²	46,145 (66.9%)	57,814 (95.0%)	103,975 (80.1%)
Pickup				
	0-2	3,489 (5.1%)	433 (0.7%)	3,922 (3.0%)
	3-6	6,111 (8.9%)	1,152 (1.9%)	7,264 (5.6%)
	7+	9,599 (13.9%)	1,189 (2.0%)	10,788 (8.3%)
	Subtotal²	19,722 (28.6%)	2,807 (4.6%)	22,530 (17.4%)
Other POV				
	0-2	131 (0.2%)	19 (0.0%)	150 (0.1%)
	3-6	215 (0.3%)	10 (0.0%)	225 (0.2%)
	7+	823 (1.1%)	63 (0.1%)	886 (0.7%)
	Subtotal²	3,048 (4.4%)	240 (0.4%)	3,288 (2.5%)
	TOTAL²	68,943 (100.0%)	60,879 (100.0%)	129,842 (100.0%)
¹ Information based only on records where principal driver is known.		² Includes vehicles where principal driver age, vehicle type or both were unreported.		

FIGURE 3.26

DISTRIBUTION OF VEHICLES BY VEHICLE AGE AND TYPE
1990 NPTS

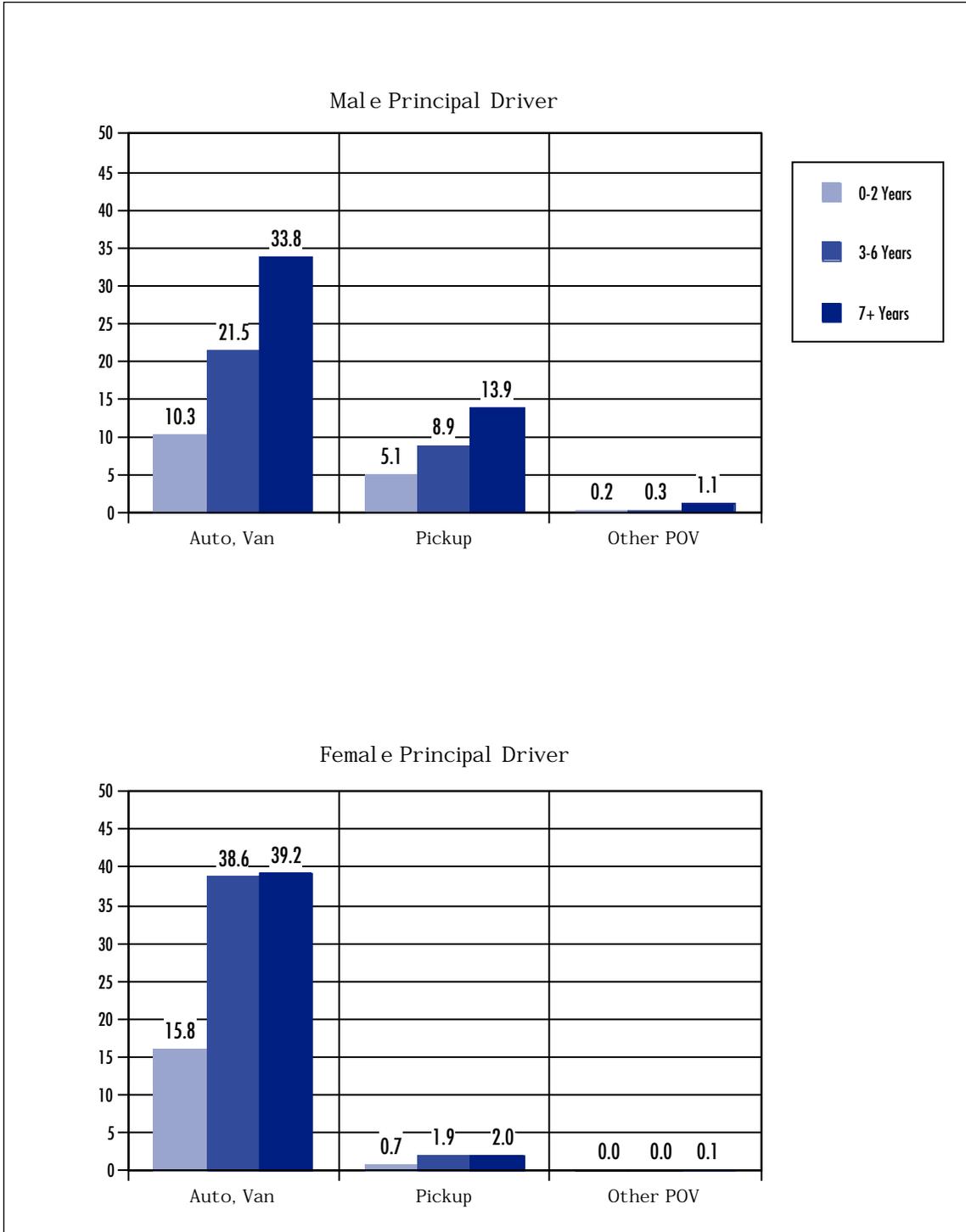


TABLE 3.32

**NUMBER OF VEHICLES BY PRINCIPAL DRIVER'S EMPLOYMENT STATUS,
VEHICLE AGE AND VEHICLE TYPE
1990 NPTS
(THOUSANDS)**

Vehicle Type	Vehicle Age	Principal Driver ¹		TOTAL
		Employed Full Time or Part Time	Not Employed	
Auto, Van				
	0-2	12,480 (13.4%)	4,260 (11.5%)	16,740 (12.9%)
	3-6	27,280 (29.4%)	11,050 (29.9%)	38,330 (29.5%)
	7+	31,450 (33.9%)	15,730 (42.6%)	47,180 (36.3%)
Subtotal²		72,390 (78.0%)	31,585 (85.4%)	103,975 (80.1%)
Pickup				
	0-2	3,199 (3.4%)	723 (2.0%)	3,922 (3.0%)
	3-6	6,007 (6.5%)	1,257 (3.4%)	7,264 (5.6%)
	7+	8,236 (8.9%)	2,552 (6.9%)	10,788 (8.3%)
Subtotal²		17,866 (19.2%)	4,664 (12.6%)	22,530 (17.4%)
Other POV				
	0-2	135 (0.2%)	15 (0.0%)	150 (0.1%)
	3-6	171 (0.2%)	54 (0.2%)	225 (0.2%)
	7+	568 (0.6%)	318 (0.9%)	886 (0.7%)
Subtotal²		2,602 (2.8%)	686 (1.9%)	3,288 (2.5%)
TOTAL²		92,864 (100.0%)	36,978 (100.0%)	129,842 (100.0%)

¹ Information based only on records where principal driver is known. ² Includes vehicles where principal driver age, vehicle type or both were unreported.

A group of households was selected to test a public perception that women drive the “newer” vehicles in households. Households with two vehicles and exactly one male and one female driver were selected. Data in Table 3.33 show that indeed female drivers

are more likely to drive the “newer” household vehicle. On average, vehicles primarily driven by women were 1.5 years younger, as a group, than those driven by men.

TABLE 3.33

NUMBER OF VEHICLES BY VEHICLE AGE AND PRINCIPAL DRIVER'S SEX¹, FOR HOUSEHOLDS² WITH ONE MALE AND ONE FEMALE DRIVER AND TWO HOUSEHOLD VEHICLES³
1990 NPTS
(THOUSANDS)

Vehicle Age	Male	Female	TOTAL
0-2	3,005 (17.5%)	3,463 (20.2%)	6,468 (18.8%)
3-6	6,119 (35.6%)	7,918 (46.1%)	14,037 (40.9%)
7 or above	7,637 (44.5%)	5,652 (32.9%)	13,289 (38.7%)
TOTAL⁴	17,179 (100.0%)	17,179 (100.0%)	34,358 (100.0%)
Average Vehicle Age	7.23	5.85	6.53

¹ Information based only on records where principal driver is known. ³ Information based only on households where exactly two vehicles are owned.

² Information based only on households where there are exactly one male and one female driver. ⁴ Includes vehicles where vehicle age is unknown.

A subgroup of households was selected to examine how vehicle selection, in terms of vehicle type, was made within households. These households owned two vehicles, one automobile and one non-automobile, and had two drivers, one male and one female. The purpose of selecting this subgroup of households was to limit the number of vehicle and driver combinations. In these

households, the female drivers are the principal drivers of either the automobile or the non-automobile vehicle. The 1990 NPTS data show that female drivers were more likely to drive automobiles and male drivers were more likely to drive non-automobile vehicles.

TABLE 3.34

**NUMBER OF VEHICLES BY VEHICLE TYPE AND PRINCIPAL DRIVER'S SEX¹ FOR HOUSEHOLDS² WITH ONE MALE AND ONE FEMALE DRIVER AND TWO HOUSEHOLD VEHICLES³
1990 NPTS
(THOUSANDS)**

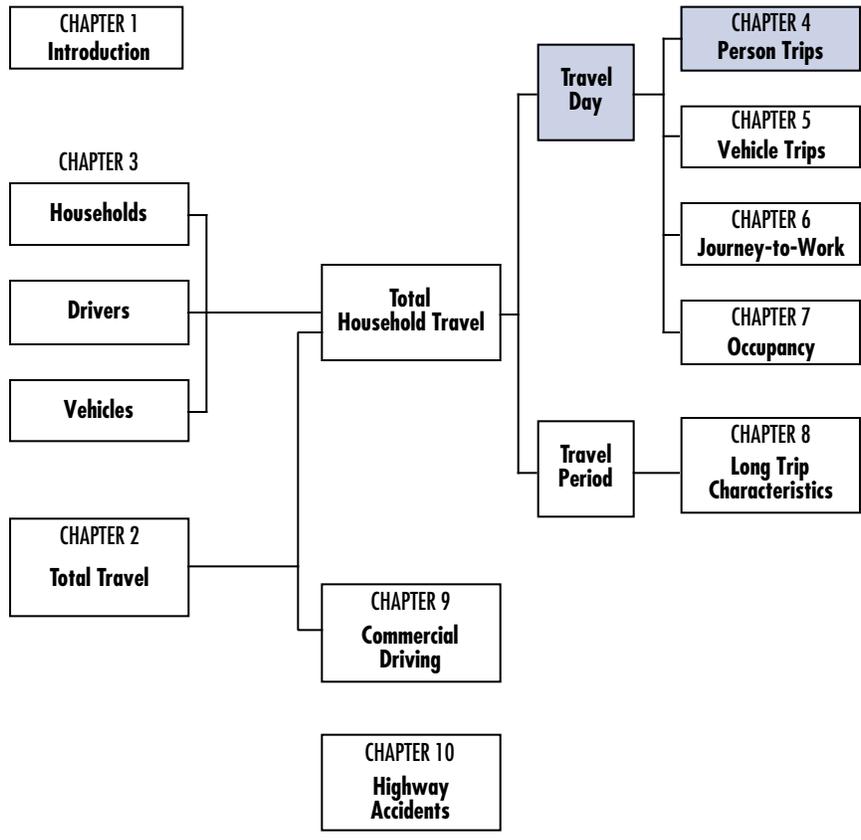
Vehicle type	Male	Female	TOTAL	Average Vehicle Age
Auto	1,185 (15.2%)	6,589 (84.7%)	7,774 (50.0%)	6.25
Van	866 (11.1%)	855 (11.0%)	1,721 (11.1%)	4.51
Pickup	5,560 (71.5%)	319 (4.1%)	5,879 (37.8%)	7.29
Other Private Vehicles	152 (2.0%)	12 (0.2%)	164 (1.1%)	6.57
TOTAL⁴	7,775 (100.0%)	7,775 (100.0%)	15,550 (100.0%)	6.45

¹ Information based only on records where data on the principal driver are known.

² Information based only on households where there are exactly one male and one female driver.

³ Information based only on households where exactly two vehicles are owned. One of these vehicles is an automobile while the other is not.

⁴ Includes vehicles where vehicle type is unknown.



Chapter 4

Person Trips and Person Miles of Travel

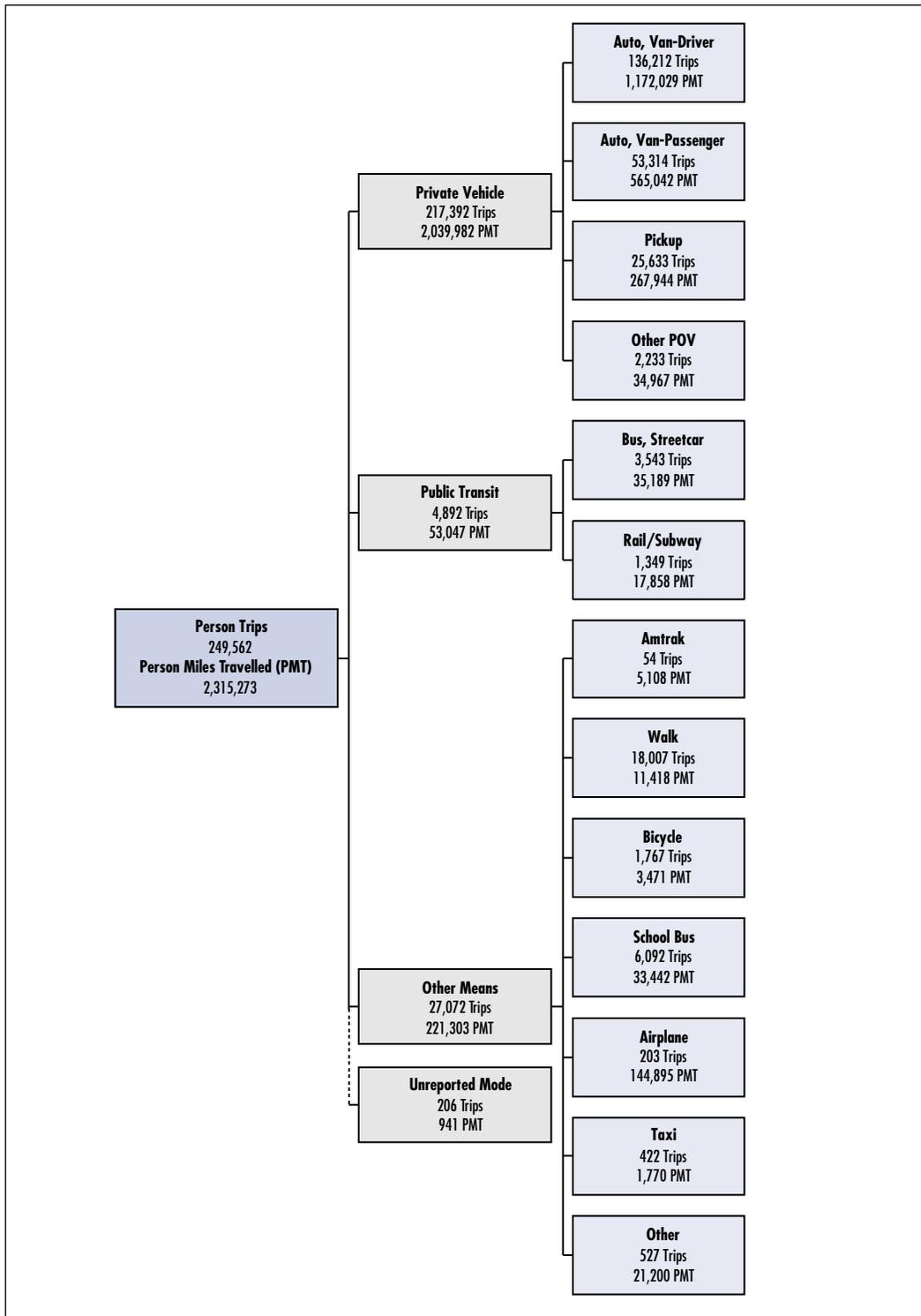


Over the Past Two Decades:

- Person trips increased by more than three times the population increase.
- On a person basis, trip making increased by...
 - 40% for everyone,
 - 25% for men,
 - 58% for women,
 - 46% for individuals over 65.
- Although there were 20% fewer persons per household, each household travelled 10% more.
- Less than half of the person trips made during the hours of 6 a.m. to 9 a.m. were for commuting to work.

1990 PERSON TRIPS AND PERSON MILES BY MODE

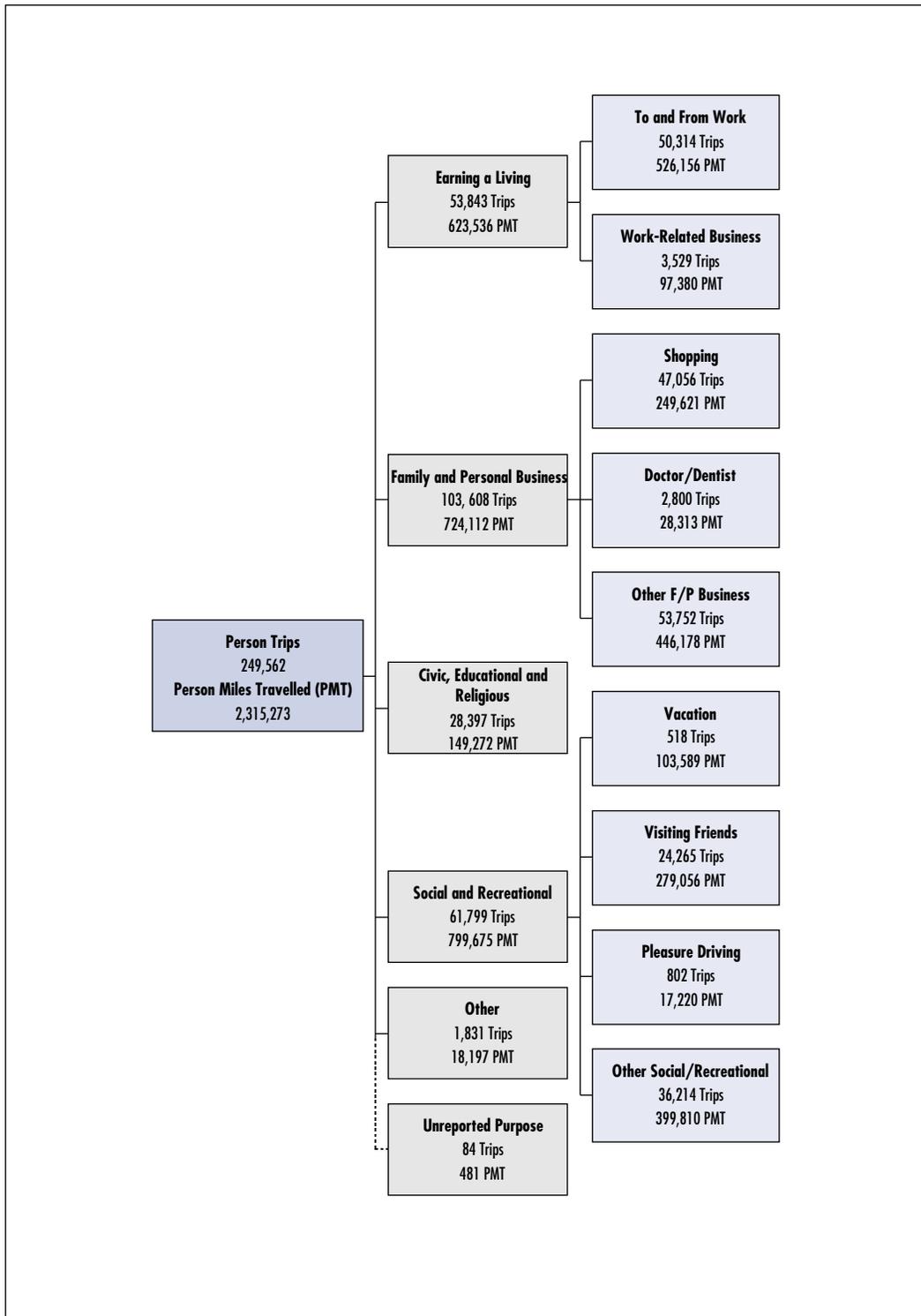
(MILLIONS)



1. PERSON TRIPS AND PERSON MILES TRAVELLED

1990 PERSON TRIPS AND PERSON MILES BY PURPOSE

(MILLIONS)



PERSON TRIPS AND PERSON MILES OF TRAVEL

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Chapter 4 Person Trips and Person Miles of Travel

THIS chapter reports statistics on person trips and person miles of travel (PMT) based on data from the 1990 NPTS. In this survey, a person trip is defined as a trip by one or more persons using any mode of transportation. If more than one person is on the same trip, each person is credited with one person trip. For example, four persons travelling together in one vehicle amount to four person trips. When four people travel five miles in the same vehicle, 20 person miles of travel result.

Trips per person

While the population increased by 21 percent from 1969 to 1990, the total number of person trips increased by 72 percent during the same period. The difference between these growth rates reflected an increase of 42 percent in the number of trips an individual took per year. In 1969, on average an individual took 736 trips per year. By 1990, an individual took an average of more than 1,000 trips per year. This increase in the number of trips an individual took per year contributed to an increase of 65 percent in the number of person miles of travel from 1969 to 1990.

Difference in person travel between men and women

In 1983, men took more trips than women. However, this trend was reversed in 1990 — women took more trips than men. On average, a man took 1,110 person trips per year in 1990 and a woman 1,143 trips. Men travelled more than women for the purpose of earning a living; and travelled less than women for family and personal matters.

Difference in person travel between age groups

Purposes of travel varied by age. Trips taken by individuals younger than 20 years old or older than 60 years old were mainly for family and personal matters and for social and recreational purposes. However, individuals between the ages of 20 and 60 took trips mainly for family and personal matters and for earning a living.

Difference in person travel between drivers and non-drivers

Individuals without a driver's license took 46 percent fewer trips by all modes and 36 percent shorter trips than those with a driver's license. As a result, individuals without a driver's license travelled only a third as much as individuals with a driver's license.

Household structure

Despite the decrease in household size between 1969 and 1990, a household, on average, took 16 percent more person trips per year and travelled 68 percent more person miles in 1990. Trips taken by households with two or more adults and without children or with the youngest child younger than 15 years old accounted for more than 67 percent of all person trips in 1990. On average, a person trip in 1990 was estimated to be 9.45 miles. Trips taken by families with a single adult and with the youngest child between 6 and 15 years old were the shortest.

Household income

As expected, households with an income greater than \$40,000 took more trips and travelled longer distances than other households. The percentage of trips for earning a living in households with an annual income greater than \$40,000 was the highest compared to other households. Lower income households used public transportation or walked more often than higher income households.

Transportation modes

Privately owned vehicles were by far the most common mode of transportation in 1990. On average, trips by privately owned vehicles accounted for 88 percent of the person miles of travel. Public transportation was used more for commuting to work than for any other trip purpose. Trip lengths were shorter for individuals residing in places where public transportation was available. More trips were taken by public transportation when the distance to the nearest public transportation was less than 1/4 mile. Consequently, the percentage of trips by privately owned vehicles decreased as distance to the nearest public transportation decreased.

Note that the NPTS data on transit use is based on a sample of 2870 person trips. Because the sample size is small, the estimates of transit use have a higher margin of error. See Chapter 1, Section 5 entitled "Limitations of Data on Transit."

Difference in trips among seasons

More trips took place in warmer months than in other months of the year. There was not a significant difference in seasonal variation between 1983 and 1990. However, trips were longer in 1990 than in 1983 in all seasons, except for spring. Winter trips were shorter than trips during other seasons. There were more walking trips in spring than in other seasons of the year.

Trips by day of week, and time of day

Based on the NPTS survey results, only 47 percent of all person trips during the morning peak period (from 6 a.m. to 9 a.m.) were for commuting to work or for work-related business. This finding is contrary to the common public perception that commuting is the major reason for morning congestion. Instead of distinct morning and afternoon peak periods that have traditionally been associated with commuting trips, the peak period has engulfed the midday and expanded to a 10-hour period (from 9 a.m. to 7 p.m.). This midday peak period was dominated by trips for family and personal business.

This table presents summary statistics on personal travel. Compared to the increase in the total number of persons from 1969 to 1990, the percentage increases in the number of person trips and in the total person miles of travel were considerably higher. While the total population grew by 21% over

this period, the rate of increase in the total number of person trips was three times the rate of increase in population, indicating that individuals took significantly more trips on a per-person basis in 1990 than in 1969.

TABLE 4.1

**SUMMARY OF NATIONAL ESTIMATES
1969, 1977, 1983 AND 1990 NPTS¹**

	1969	1977	1983	1990	Percent Change 69-90
Persons (000)	197,213	213,141	229,453	239,416	21
Annual Person Trips (000)	145,146,000	211,778,000	224,385,000	249,562,000	72
Annual Person Miles of Travel (000)	1,404,137,000	1,879,215,000	1,946,662,000	2,315,273,000	65
Number of Person Trips per Person	736	994	978	1,042	42
Annual Person Miles of Travel per Person (miles)	7,120	8,817	8,484	9,671	36
Average Person Trip Length (miles)	9.67	8.87	8.68	9.45 ²	-4

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Information based only on observations with valid trip length data.

FIGURE 4.1

**SUMMARY OF NATIONAL ESTIMATES
1969, 1977, 1983, AND 1990 NPTS**

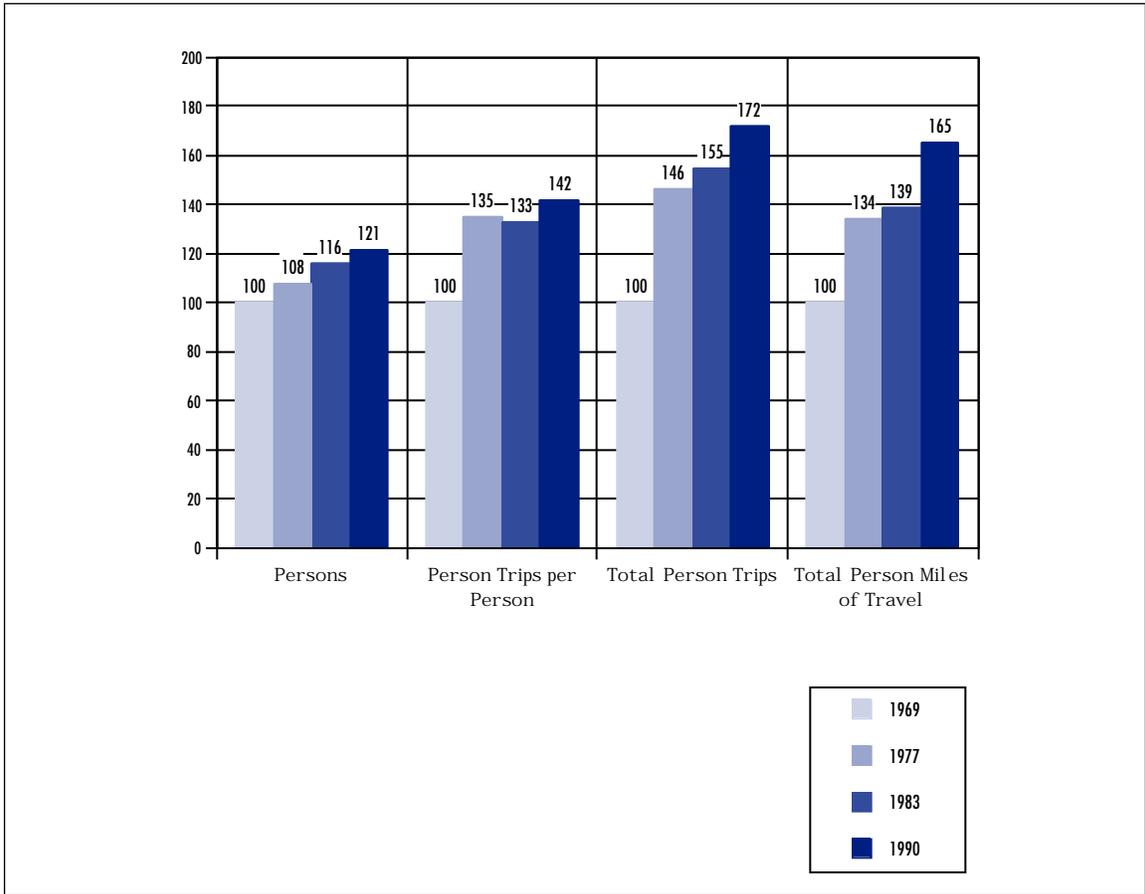


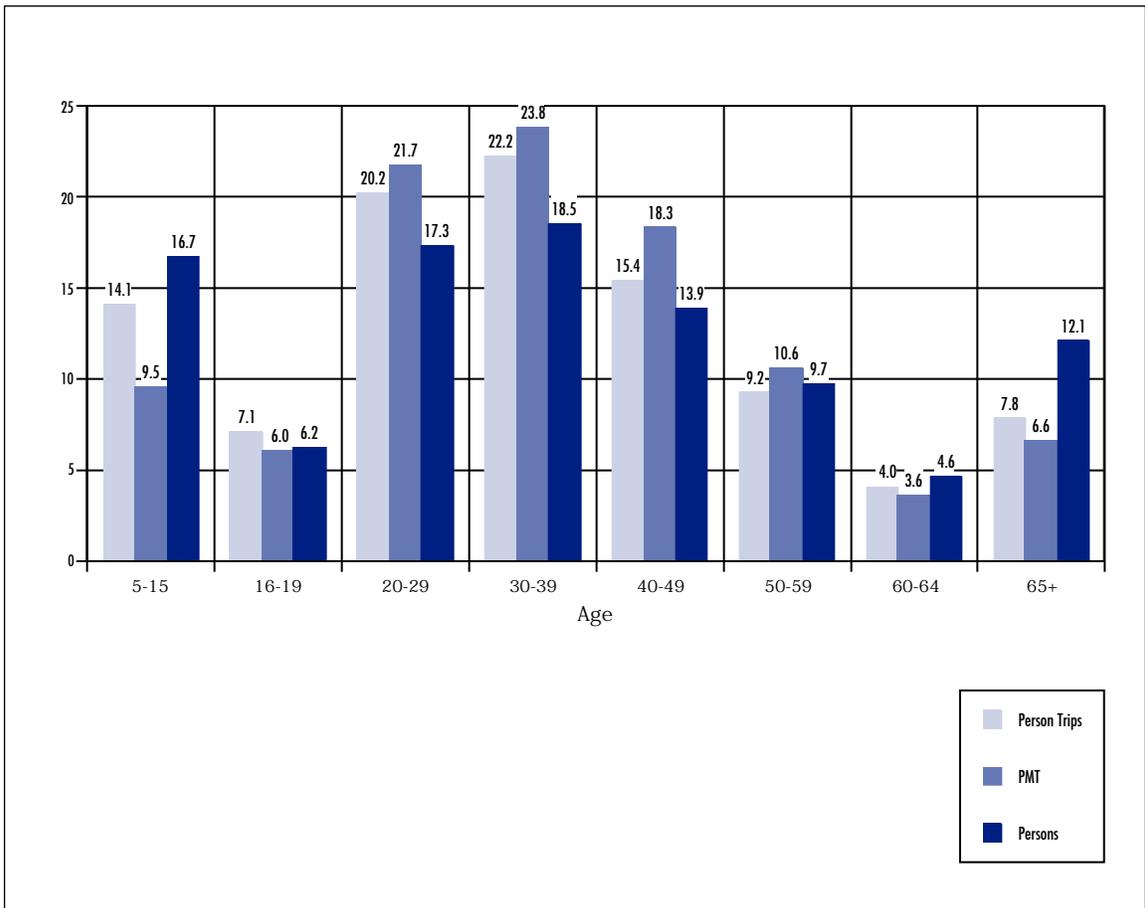
TABLE 4.2

**NUMBER OF PERSON TRIPS BY AGE AND SEX
1983 AND 1990 NPTS¹
(MILLIONS)**

Age	1983			1990 ²		
	Male	Female	TOTAL	Male	Female	TOTAL
5-15	15,622 (14.3%)	15,496 (13.5%)	31,118 (13.9%)	17,700 (15.1%)	17,200 (13.2%)	34,900 (14.1%)
16-19	9,150 (8.4%)	9,430 (8.2%)	18,580 (8.3%)	8,547 (7.3%)	8,967 (6.9%)	17,514 (7.1%)
20-29	25,837 (23.6%)	25,033 (21.8%)	50,870 (22.7%)	23,900 (20.4%)	26,200 (20.0%)	50,100 (20.2%)
30-39	20,614 (18.8%)	25,028 (21.8%)	45,642 (20.3%)	24,400 (20.9%)	30,600 (23.4%)	55,000 (22.2%)
40-49	13,710 (12.5%)	14,258 (12.4%)	27,968 (12.5%)	17,300 (14.8%)	20,900 (16.0%)	38,200 (15.4%)
50-59	11,383 (10.4%)	12,796 (11.1%)	24,179 (10.8%)	11,000 (9.4%)	11,800 (9.0%)	22,800 (9.2%)
60-64	5,280 (4.8%)	4,543 (4.0%)	9,823 (4.4%)	4,869 (4.2%)	5,048 (3.9%)	9,917 (4.0%)
65+	7,940 (7.2%)	8,265 (7.2%)	16,205 (7.2%)	9,255 (7.9%)	9,978 (7.6%)	19,233 (7.8%)
TOTAL	109,536 (100.0%)	114,849 (100.0%)	224,385 (100.0%)	116,971 (100.0%)	130,693 (100.0%)	247,664 (100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ² Does not include trips where age, sex, or both were unreported.

FIGURE 4.2
DISTRIBUTION OF PERSON TRIPS AND PERSON MILES OF TRAVEL BY AGE
1990 NPTS



This table shows the average annual person trips per person by age and sex. In 1990, for people aged 30 through 49, women took approximately 200 more trips per year than their male counterparts. For the elderly (those 60 and older), this situation was

reversed with men taking about 150 more trips per year than women. For both survey years, 1983 and 1990, the gap in trip making between men and women was the greatest for those 65 and over.

TABLE 4.3
NUMBER OF ANNUAL PERSON TRIPS PER PERSON BY AGE AND SEX
1983 AND 1990 NPTS¹

Age	1983				1990			
	Male	Female	% Difference, Male vs. Female	All Persons	Male	Female	% Difference, Male vs. Female	All Persons
5-15	822	853	-3.6%	837	932	957	-2.6%	944
16-19	1,183	1,234	-4.1%	1,209	1,271	1,259	1.0%	1,264
20-29	1,275	1,229	3.7%	1,252	1,294	1,320	-2.0%	1,307
30-39	1,197	1,331	-10.1%	1,267	1,231	1,434	-14.2%	1,336
40-49	1,112	1,166	-4.6%	1,139	1,151	1,328	-13.3%	1,242
50-59	1,036	1,012	2.4%	1,023	1,058	1,052	0.6%	1,055
60-64	978	777	25.9%	874	1,047	921	13.7%	979
65+	810	569	42.4%	666	817	639	27.9%	714
ALL AGES	1,066	1,042	2.3%	1,054	1,110	1,143	-2.9%	1,127

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

TABLE 4.4

**NUMBER OF PERSON MILES OF TRAVEL BY AGE AND SEX
1983 AND 1990 NPTS¹
(MILLIONS)**

Age	1983			1990 ²		
	Male	Female	TOTAL	Male	Female	TOTAL
5-15	116,680 (11.3%)	102,422 (11.3%)	219,102 (11.3%)	113,297 (9.3%)	105,438 (9.7%)	218,735 (9.5%)
16-19	61,819 (6.0%)	57,591 (6.3%)	119,410 (6.1%)	73,084 (6.0%)	64,531 (6.0%)	137,615 (6.0%)
20-29	240,015 (23.1%)	219,766 (24.2%)	459,781 (23.6%)	267,542 (22.0%)	231,467 (21.4%)	499,009 (21.7%)
30-39	221,708 (21.4%)	192,126 (21.1%)	413,834 (21.3%)	285,982 (23.5%)	260,900 (24.1%)	546,882 (23.8%)
40-49	171,835 (16.6%)	139,558 (15.3%)	311,393 (16.0%)	221,823 (18.3%)	198,947 (18.4%)	420,770 (18.3%)
50-59	120,362 (11.6%)	97,601 (10.7%)	217,963 (11.2%)	133,039 (10.9%)	109,647 (10.1%)	242,686 (10.6%)
60-64	52,206 (5.0%)	44,558 (4.9%)	96,764 (5.0%)	45,564 (3.7%)	37,180 (3.4%)	82,744 (3.6%)
65+	52,491 (5.1%)	55,924 (6.1%)	108,415 (5.6%)	75,006 (6.2%)	75,846 (7.0%)	150,852 (6.6%)
TOTAL	1,037,116 (100.0%)	909,546 (100.0%)	1,946,662 (100.0%)	1,215,337 (100.0%)	1,083,956 (100.0%)	2,299,293 (100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1. ² Does not include miles of travel where age, sex, or both were unreported.

This table shows the average annual number of person miles travelled per person by age and sex. While women took more trips than men, on average, men travelled more miles in a year than women. This pattern was

apparent across all age groups in 1990. The greatest difference between men and women in terms of the number of miles travelled was for the 60-to-64 age group.

TABLE 4.5

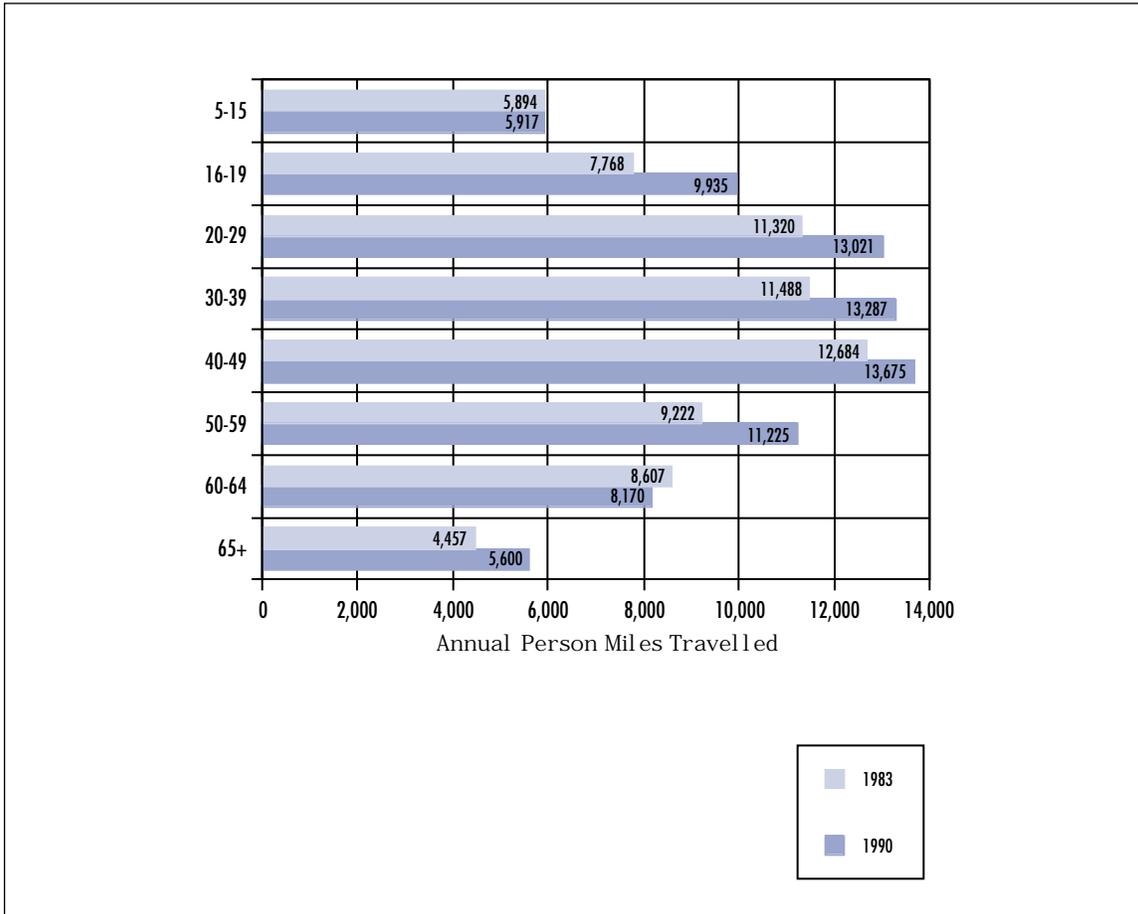
NUMBER OF ANNUAL PERSON MILES PER PERSON BY AGE AND SEX
1983 AND 1990 NPTS¹

Age	1983				1990			
	Male	Female	% Difference, Male vs. Female	All Persons	Male	Female	% Difference, Male vs. Female	All Persons
5-15	6,143	5,636	9.0%	5,894	5,964	5,866	1.7%	5,917
16-19	7,994	7,538	6.0%	7,768	10,864	9,058	19.9%	9,935
20-29	11,843	10,790	9.8%	11,320	14,484	11,660	24.2%	13,021
30-39	12,876	10,217	26.0%	11,488	14,428	12,228	18.0%	13,287
40-49	13,942	11,415	22.1%	12,684	14,754	12,644	16.7%	13,675
50-59	10,952	7,719	41.9%	9,222	12,792	9,772	30.9%	11,225
60-64	9,673	7,622	26.9%	8,607	9,801	6,786	44.4%	8,170
65+	5,355	3,852	39.0%	4,457	6,623	4,857	36.4%	5,600
AVERAGE FOR ALL PERSONS	10,096	8,253	22.3%	9,142	11,528	9,481	21.6%	10,463

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 4.3

**NUMBER OF ANNUAL PERSON MILES OF TRAVEL PER PERSON BY AGE
1983 AND 1990 NPTS**



In 1990, women between the ages of 20 and 50 took more person trips per day than their male counterparts. In the age group 60 years and over, men took more daily person trips than women.

TABLE 4.6

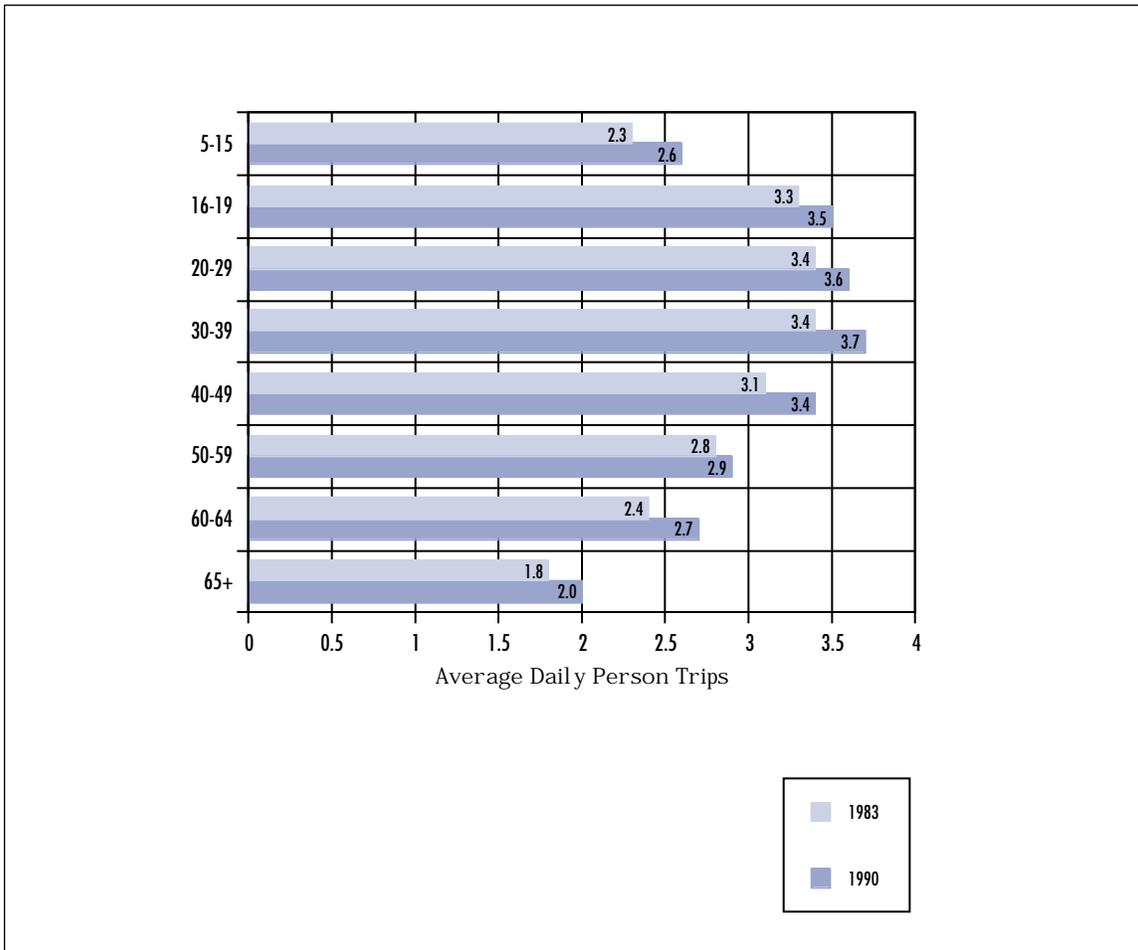
**AVERAGE DAILY PERSON TRIPS BY AGE AND SEX
1983 AND 1990 NPTS¹**

Age	1983			1990		
	Male	Female	ALL	Male	Female	ALL
5-15	2.25	2.34	2.29	2.55	2.62	2.59
16-19	3.24	3.38	3.31	3.48	3.45	3.46
20-29	3.49	3.37	3.43	3.54	3.62	3.58
30-39	3.28	3.65	3.47	3.37	3.93	3.66
40-49	3.05	3.20	3.12	3.15	3.64	3.40
50-59	2.84	2.77	2.80	2.91	2.88	2.89
60-64	2.68	2.13	2.39	2.87	2.52	2.68
65+	2.22	1.56	1.83	2.24	1.75	1.95
ALL	2.92	2.86	2.89	3.03	3.12	3.08

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 4.4

AVERAGE DAILY PERSON TRIPS BY AGE
1983 AND 1990 NPTS



Both the 1983 and 1990 NPTS data showed that Americans travelled more miles per day as their ages increased, up to the age of 50.

After age 50, the average daily person miles per person decreased.

TABLE 4.7

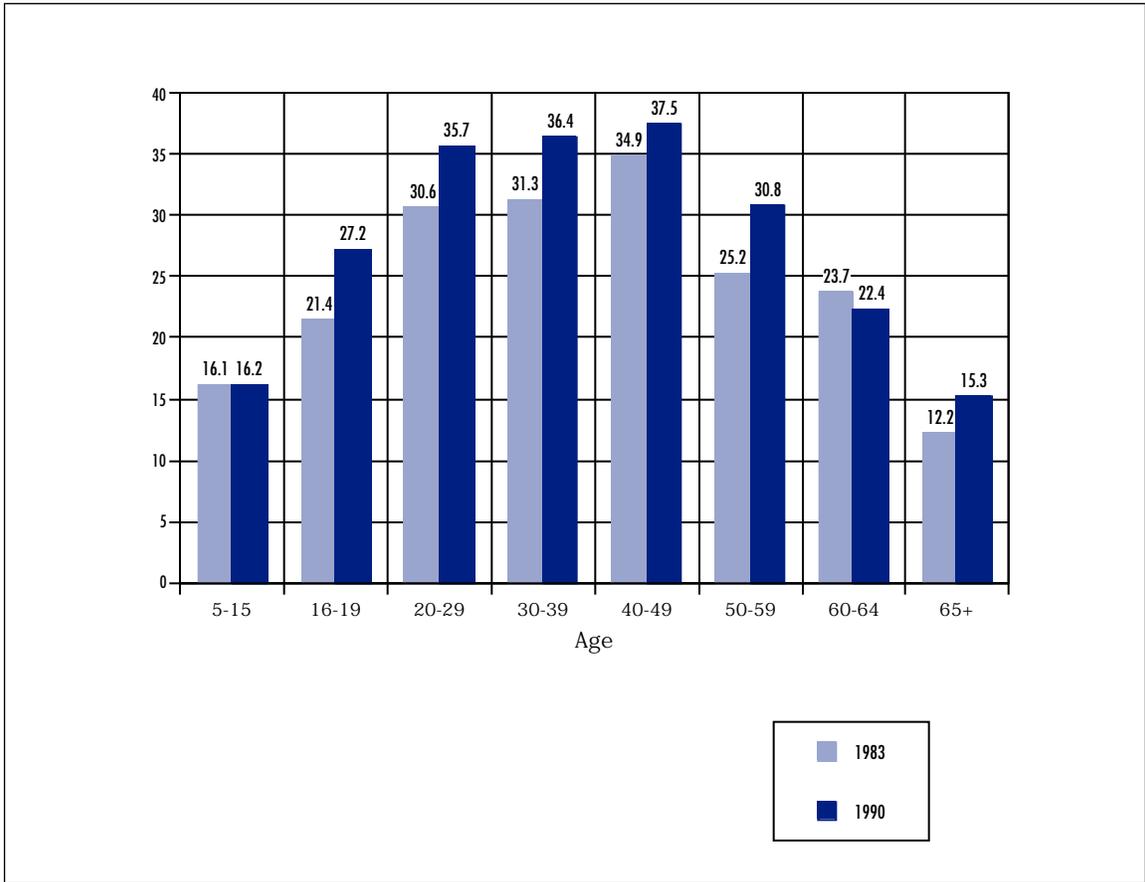
**AVERAGE DAILY PERSON MILES OF TRAVEL BY AGE AND SEX
1983 AND 1990 NPTS¹**

Age	1983			1990		
	Male	Female	ALL	Male	Female	ALL
5-15	16.8	15.4	16.1	16.3	16.1	16.2
16-19	22.0	20.8	21.4	29.8	24.8	27.2
20-29	32.4	29.6	30.6	39.7	32.0	35.7
30-39	35.1	27.8	31.3	39.5	33.5	36.4
40-49	38.4	31.4	34.9	40.4	34.6	37.5
50-59	29.9	21.1	25.2	35.1	26.8	30.8
60-64	26.6	20.9	23.7	26.9	18.6	22.4
65+	14.6	10.5	12.2	18.2	13.3	15.3
ALL	25.5	21.1	23.2	31.6	26.0	28.7

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 4.5

**AVERAGE DAILY PERSON MILES OF TRAVEL BY AGE
1983 AND 1990 NPTS**



Between 1983 and 1990, average trip length increased for both men and women, with men continuing to take longer trips.

TABLE 4.8

**AVERAGE LENGTH OF PERSON TRIPS BY AGE AND SEX
1983 AND 1990 NPTS¹
(MILES)**

Age	1983			1990		
	Male	Female	ALL	Male	Female	ALL
5-15	7.5	6.6	7.0	6.6	6.3	6.4
16-19	6.8	6.1	6.4	8.7	7.5	8.1
20-29	9.3	8.8	9.0	11.3	9.1	10.2
30-39	10.8	7.7	9.1	11.9	8.7	10.1
40-49	12.5	9.8	11.1	13.0	9.7	11.2
50-59	10.6	7.6	9.0	12.2	9.5	10.8
60-64	9.9	9.8	9.8	9.4	7.5	8.5
65+	6.6	6.8	6.7	8.2	7.8	8.0
ALL	9.5	7.9	8.7	10.5	8.5	9.5

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 4.6

**AVERAGE LENGTH OF PERSON TRIPS BY AGE
1983 AND 1990 NPTS**

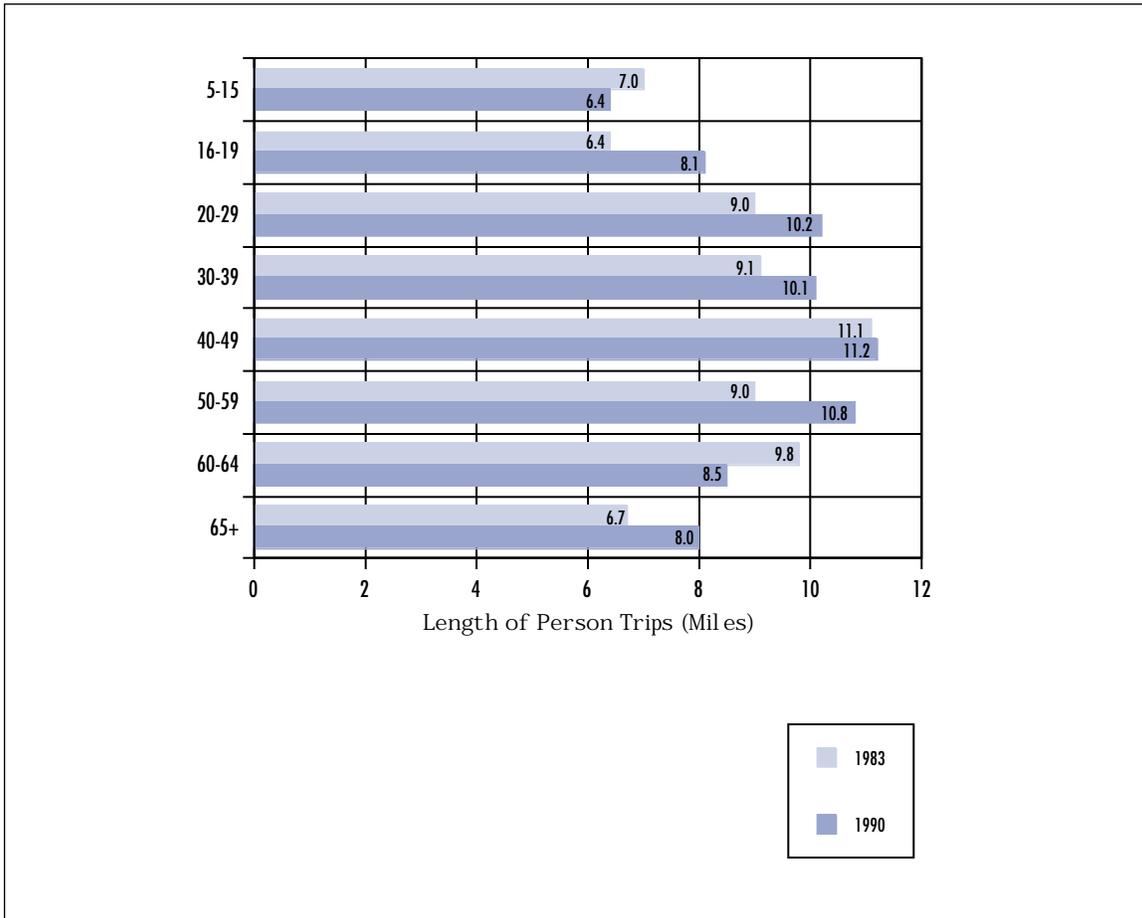


TABLE 4.9

**AVERAGE DAILY PERSON TRIPS, TRAVEL PER PERSON, AND PERSON TRIP LENGTH BY SEX, DRIVER'S LICENSE STATUS, AND TRIP PURPOSE
1990 NPTS**

Purpose	Male		Female		ALL PERSONS	
	With Driver's License	Without	With Driver's License	Without	With Driver's License	Without
Average Daily Person Trips						
Earning a Living	1.0	0.4	0.7	0.3	0.9	0.3
Family & Personal Business	1.3	0.7	1.7	0.7	1.5	0.7
Civic, Education, & Religious	0.2	0.3	0.2	0.2	0.2	0.3
Social & Recreational	0.8	0.7	0.8	0.4	0.8	0.5
Other	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL	3.4	2.2	3.5	1.7	3.5	1.9
Average Daily Person Miles of Travel						
Earning a Living	13.4	5.0	6.9	1.4	10.1	2.5
Family & Personal Business	10.0	3.2	11.3	3.2	10.7	3.2
Civic, Educational & Religious	1.3	1.3	1.5	0.9	1.4	1.0
Social & Recreational	11.6	5.2	10.9	4.0	11.3	4.3
Other	0.3	0.1	0.2	0.1	0.3	0.1
TOTAL	36.6	14.8	30.8	9.6	33.8	11.1
Average Person Trip Length (Miles)¹						
Earning a Living	14.0	12.2	9.4	6.1	12.0	8.7
Family & Personal Business	8.0	5.0	6.8	5.0	7.3	5.0
Civic, Educational, & Religious	7.3	4.0	6.7	4.1	7.0	4.1
Social & Recreational	14.7	8.0	13.9	10.3	14.3	9.3
Other	12.8	9.0	10.3	2.0	11.5	3.9
ALL PURPOSES	11.5	6.7	9.0	6.3	10.2	6.5
¹ Average trip length is calculated using only those records with trip mile information present.						

Individuals without a driver's license took 46% fewer person trips by all modes and 36% shorter trips than those with a driver's license. As a result, individuals without a

driver's license travelled only a third of what licensed drivers did. This pattern was true for both men and women, regardless of trip purpose.

FIGURE 4.7

AVERAGE PERSON TRIP LENGTH BY TRIP PURPOSE, DRIVER'S LICENSE STATUS AND SEX 1990 NPTS

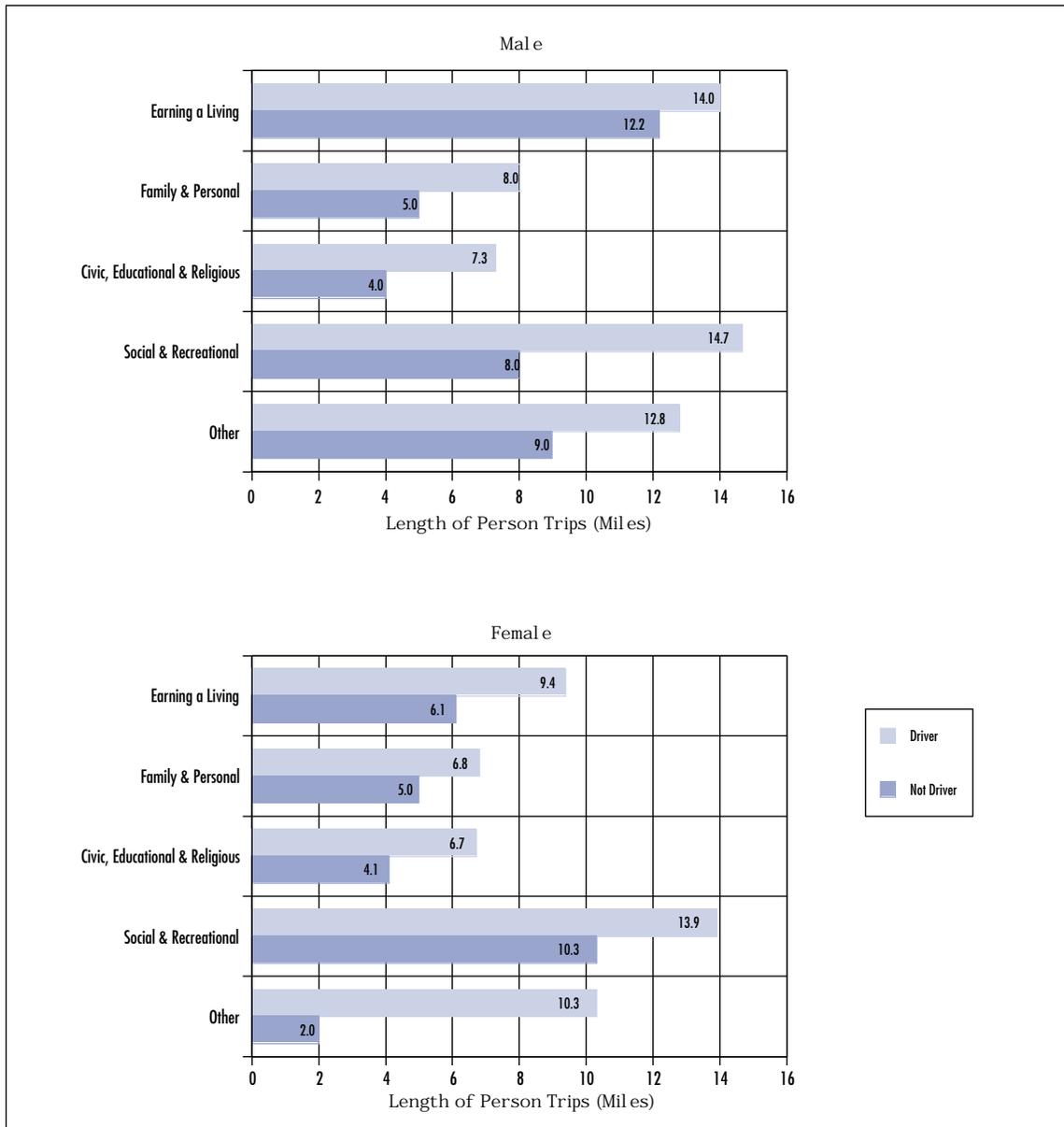


TABLE 4.10

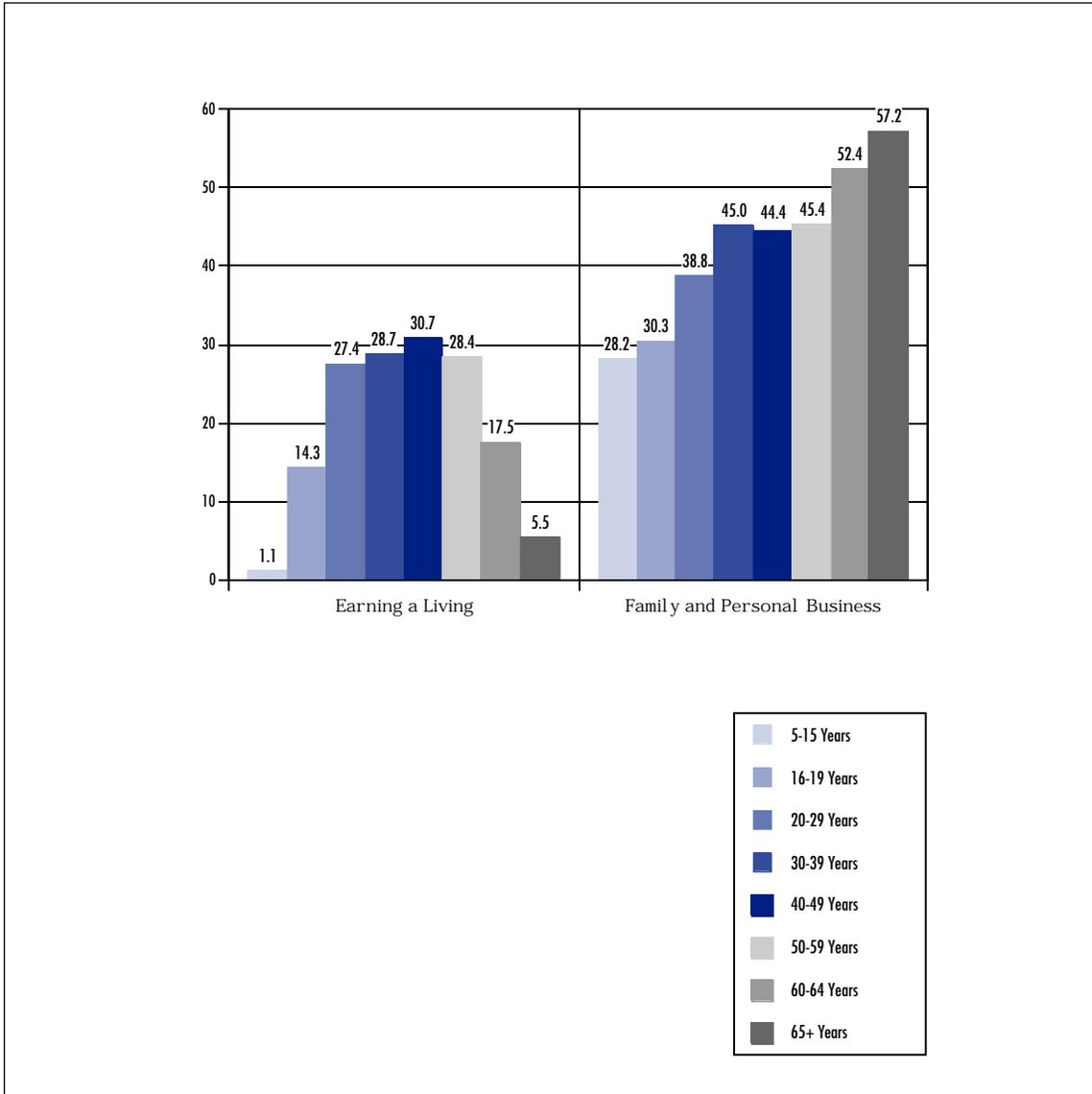
**NUMBER OF PERSON TRIPS BY AGE AND TRIP PURPOSE
 1990 NPTS
 (MILLIONS)**

Age	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ¹
5-15	392 (1.1%)	9,847 (28.2%)	14,027 (40.2%)	10,343 (29.6%)	274 (0.7%)	34,901 (100.0%)
16-19	2,500 (14.3%)	5,322 (30.3%)	3,979 (22.7%)	5,571 (31.8%)	142 (0.8%)	17,514 (100.0%)
20-29	13,710 (27.4%)	19,422 (38.8%)	2,771 (5.6%)	13,851 (27.7%)	308 (0.6%)	50,076 (100.0)
30-39	15,812 (28.7%)	24,767 (45.0%)	2,530 (4.6%)	11,575 (21.0%)	320 (0.6%)	55,026 (100.0%)
40-49	11,705 (30.7%)	16,936 (44.4%)	1,648 (4.3%)	7,635 (20.0%)	233 (0.6%)	38,176 (100.0%)
50-59	6,472 (28.4%)	10,354 (45.4%)	1,028 (4.5%)	4,764 (20.9%)	190 (0.8%)	22,813 (100.0%)
60-64	1,738 (17.5%)	5,195 (52.4%)	559 (5.6%)	2,351 (23.7%)	72 (0.7%)	9,917 (100.0%)
65+	1,058 (5.5%)	11,005 (57.2%)	1,631 (8.5%)	5,255 (27.3%)	279 (1.5%)	19,233 (100.0%)
TOTAL¹	53,843 (21.6%)	103,608 (41.5%)	28,397 (11.4%)	61,799 (24.8%)	1,831 (0.7%)	249,562 (100.0%)

¹ Includes trips where age, trip purpose, or both were unreported.

FIGURE 4.8

DISTRIBUTION OF PERSON TRIPS BY SELECTED TRIP PURPOSE AND DRIVER'S AGE
1990 NPTS
(WITHIN AGE GROUP)



THE shares of trips taken for different purposes varied by age. On the average, approximately 42% of the person trips were taken for family and personal reasons. The percent of trips taken for earning a living peaked in the 40 to 49 age group, then declined.

The major reasons for taking trips also varied by sex. The most noteworthy differences between men and women were the proportions of trips taken for family and personal reasons and for earning a living. While 25.3% of the person trips taken by men were for earning a living, this percentage was only 18.3% for women (Tables 4.11 and 4.12). While 45.5% of the trips taken by women

were for family and personal reasons, this percentage was only 37% for men.

On a per-person basis, men took fewer trips than women — 1,110 vs. 1,143 trips per year. When compared by age group, women between the ages of 30 and 50 took significantly more trips per year than those in the corresponding male cohort. The most noteworthy difference between men and women in these age groups was that almost half of the total trips taken by women between 30 and 50 years old were for family and personal reasons while this percentage was 38% for men in the same age groups. On average, women 50 years of age or older took fewer trips than their male counterparts.

TABLE 4.11
NUMBER OF PERSON TRIPS¹ TAKEN BY MEN CATEGORIZED BY AGE AND TRIP PURPOSE
1990 NPTS
(MILLIONS)

Age	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ²
5-15	198 (1.1%)	4,852 (27.4%)	7,123 (40.3%)	5,350 (30.3%)	154 (0.9%)	17,684 (100.0%)
16-19	1,349 (15.8%)	2,179 (25.5%)	2,008 (23.5%)	2,951 (34.5%)	59 (0.7%)	8,547 (100.0%)
20-29	7,376 (30.9%)	8,156 (34.2%)	1,150 (4.8%)	7,016 (29.4%)	165 (0.7%)	23,870 (100.0%)
30-39	8,804 (36.1%)	9,278 (38.0%)	890 (3.6%)	5,288 (21.7%)	116 (0.5%)	24,391 (100.0%)
40-49	6,388 (37.0%)	6,687 (38.7%)	550 (3.2%)	3,528 (20.4%)	108 (0.6%)	17,274 (100.0%)
50-59	3,785 (34.3%)	4,569 (41.4%)	403 (3.7%)	2,177 (19.7%)	101 (0.9%)	11,038 (100.0%)
60-64	967 (19.9%)	2,426 (49.8%)	245 (5.0%)	1,192 (24.5%)	38 (0.8%)	4,869 (100.0%)
65+	651 (7.0%)	5,197 (56.2%)	633 (6.8%)	2,644 (28.6%)	130 (1.4%)	9,255 (100.0%)
TOTAL²	29,690 (25.3%)	43,553 (37.0%)	13,073 (11.1%)	30,334 (25.8%)	871 (0.7%)	117,565 (100.0%)

¹ Does not include trips where respondent's sex was unreported. ² Includes trips where age, trip purpose, or both were unreported.

TABLE 4.12

**NUMBER OF PERSON TRIPS¹ TAKEN BY WOMEN CATEGORIZED BY AGE AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

Age	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ²
5-15	194 (1.1%)	4,995 (29.0%)	6,905 (40.1%)	4,993 (29.0%)	115 (0.7%)	17,211 (100.0%)
16-19	1,150 (12.8%)	3,143 (35.1%)	1,971 (22.0%)	2,620 (29.2%)	83 (0.9%)	8,967 (100.0%)
20-29	6,333 (24.2%)	11,266 (43.0%)	1,622 (6.2%)	6,835 (26.1%)	143 (0.5%)	26,206 (100.0%)
30-39	7,008 (22.9%)	15,489 (50.6%)	1,640 (5.4%)	6,286 (20.5%)	204 (0.7%)	30,635 (100.0%)
40-49	5,317 (25.4%)	10,249 (49.0%)	1,099 (5.3%)	4,107 (19.6%)	125 (0.6%)	20,902 (100.0%)
50-59	2,687 (22.8%)	5,785 (49.1%)	626 (5.3%)	2,587 (22.0%)	89 (0.8%)	11,775 (100.0%)
60-64	771 (15.3%)	2,769 (54.9%)	314 (6.2%)	1,159 (23.0%)	34 (0.7%)	5,048 (100.0%)
65+	407 (4.1%)	5,807 (58.2%)	999 (10.0%)	2,611 (26.2%)	149 (1.5%)	9,978 (100.0%)
TOTAL²	24,149 (18.3%)	60,042 (45.5%)	15,315 (11.6%)	31,462 (23.8%)	952 (0.7%)	131,960 (100.0%)

¹ Does not include trips where respondent's sex was unreported. ² Includes trips where age, trip purpose, or both were unreported.

FIGURE 4.9
DISTRIBUTION OF PERSON TRIPS BY TRIP PURPOSE AND SEX
1990 NPTS

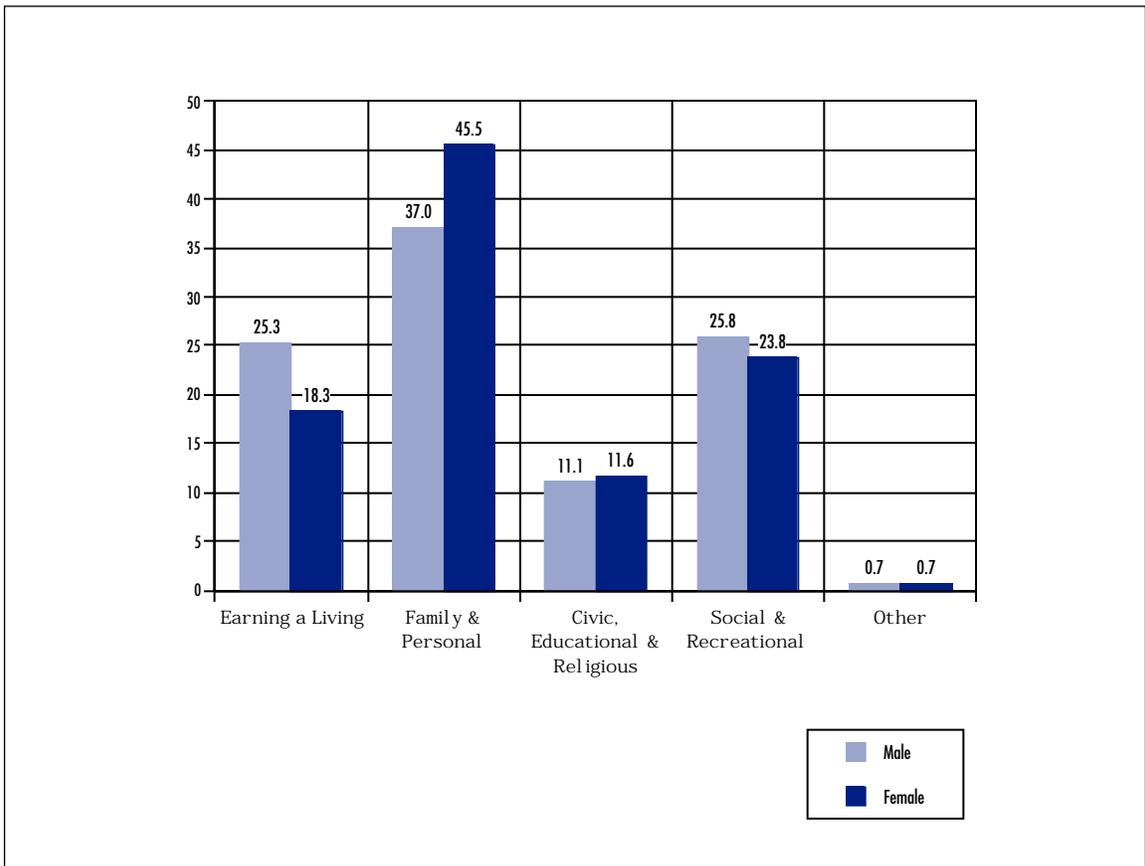


TABLE 4.13

NUMBER OF PERSON TRIPS¹ TAKEN BY MEN CATEGORIZED BY AGE AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

	Private Vehicle	Public Transportation		Other				TOTAL ⁴
		Bus, Streetcar	Rail, Subway ³	Amtrak	Bike	Walk	Other	
5 - 15	11,299 (11.1%)	317 (20.8%)	19 (2.7%)	2 (6.5%)	536 (42.3%)	2,681 (31.7%)	2,794 (76.0%)	17,684 (15.0%)
16 - 19	6,678 (6.6%)	197 (12.9%)	31 (4.4%)	4 (12.6%)	134 (10.6%)	1,123 (13.3%)	377 (10.3%)	8,547 (7.3%)
20 - 29	21,196 (20.8%)	316 (20.7%)	267 (38.1%)	18 (54.3%)	303 (23.9%)	1,593 (18.9%)	159 (4.3%)	23,870 (20.3%)
30 - 39	22,525 (22.1%)	225 (14.7%)	204 (29.1%)	0 (0.0%)	160 (12.6%)	1,183 (14.0%)	74 (2.0%)	24,391 (20.7%)
40 - 49	16,245 (16.0%)	200 (13.1%)	71 (10.1%)	6 (17.5%)	34 (2.7%)	626 (7.4%)	88 (2.4%)	17,274 (14.7%)
50 - 59	10,268 (10.1%)	100 (6.5%)	61 (8.8%)	2 (5.0%)	10 (0.8%)	511 (6.1%)	75 (2.0%)	11,038 (9.4%)
60 - 64	4,593 (4.5%)	38 (2.5%)	16 (2.2%)	** (0.0%)	18 (1.4%)	193 (2.3%)	10 (0.3%)	4,869 (4.1%)
65+	8,500 (8.3%)	113 (7.4%)	23 (3.3%)	1 (2.8%)	71 (5.6%)	470 (5.6%)	74 (2.0%)	9,255 (7.9%)
TOTAL⁴	101,819 (100.0%)	1,527 (100.0%)	700 (100.0%)	34 (100.0%)	1,266 (100.0%)	8,446 (100.0%)	3,675 (100.0%)	117,565 (100.0%)

** Indicates no data reported.

¹ Does not include trips where respondent's sex was unreported.

² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where age, mode of transportation, or both were unreported.

TABLE 4.14

**NUMBER OF PERSON TRIPS¹ TAKEN BY WOMEN
CATEGORIZED BY AGE AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

	Private Vehicle	Public Transportation		Other				TOTAL ⁴
		Bus, Streetcar	Rail, Subway ³	Amtrak	Bike	Walk	Other	
5 - 15	11,589	363	15	4	259	2,237	2,729	17,211
	(10.0%)	(18.0%)	(2.2%)	(17.0%)	(51.8%)	(23.4%)	(76.5%)	(13.0%)
16 - 19	7,108	261	60	**	11	1,208	312	8,967
	(6.2%)	(12.9%)	(9.2%)	(0.0%)	(2.2%)	(12.6%)	(8.7%)	(6.8%)
20 - 29	23,366	441	239	6	105	1,934	87	26,206
	(20.2%)	(21.9%)	(36.8%)	(31.0%)	(21.0%)	(20.2%)	(2.4%)	(19.9%)
30 - 39	28,444	322	152	5	72	1,505	105	30,635
	(24.6%)	(16.0%)	(23.4%)	(25.8%)	(14.4%)	(15.7%)	(2.9%)	(23.2%)
40 - 49	19,588	189	94	3	37	843	143	20,902
	(17.0%)	(9.4%)	(14.5%)	(13.3%)	(7.4%)	(8.8%)	(4.0%)	(15.8%)
50 - 59	10,921	120	46	**	6	618	57	11,775
	(9.5%)	(6.0%)	(7.1%)	(0.0%)	(1.2%)	(6.5%)	(1.6%)	(8.9%)
60 - 64	4,610	80	15	**	0	318	23	5,048
	(4.0%)	(4.0%)	(2.2%)	(0.0%)	(0.0%)	(3.3%)	(0.6%)	(3.8%)
65+	8,847	190	22	3	8	803	92	9,978
	(7.7%)	(9.4%)	(3.4%)	(13.0%)	(1.6%)	(8.4%)	(2.6%)	(7.6%)
TOTAL⁴	115,536	2,016	649	21	500	9,561	3,569	131,960
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

****** Indicates no data reported.

¹ Does not include trips where respondent's sex was unreported.

² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where age, mode of transportation, or both were unreported.

Individuals 65 and older took a greater percentage of their trips on weekends than individuals under 65 years old.

On a per-person basis, individuals 65 or older took 34% fewer trips than individuals under 65 years of age.

TABLE 4.15

**NUMBER OF PERSON TRIPS¹ TAKEN BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65
CATEGORIZED BY DAY OF WEEK
1990 NPTS
(THOUSANDS)**

Day of Week	65 or Older	Under 65
Sunday	2,960,704 (15.4%)	30,232,641 (13.2%)
Monday	2,605,209 (13.5%)	34,213,468 (15.0%)
Tuesday	2,870,703 (14.9%)	35,497,162 (15.5%)
Wednesday	3,125,111 (16.2%)	32,213,651 (14.1%)
Thursday	2,456,871 (12.8%)	35,493,240 (15.5%)
Friday	2,515,693 (13.1%)	30,530,550 (13.4%)
Saturday	2,698,375 (14.0%)	30,240,989 (13.2%)
TOTAL	19,232,666 (100.0%)	228,421,701 (100.0%)
NUMBER OF PERSONS (000)	26,955	210,151
NUMBER OF ANNUAL TRIPS PER PERSON	714	1,087

¹ Does not include trips where respondent's age was unreported.

FIGURE 4.10
DISTRIBUTION OF PERSON TRIPS TAKEN BY AGE CATEGORY AND DAY OF WEEK
1990 NPTS

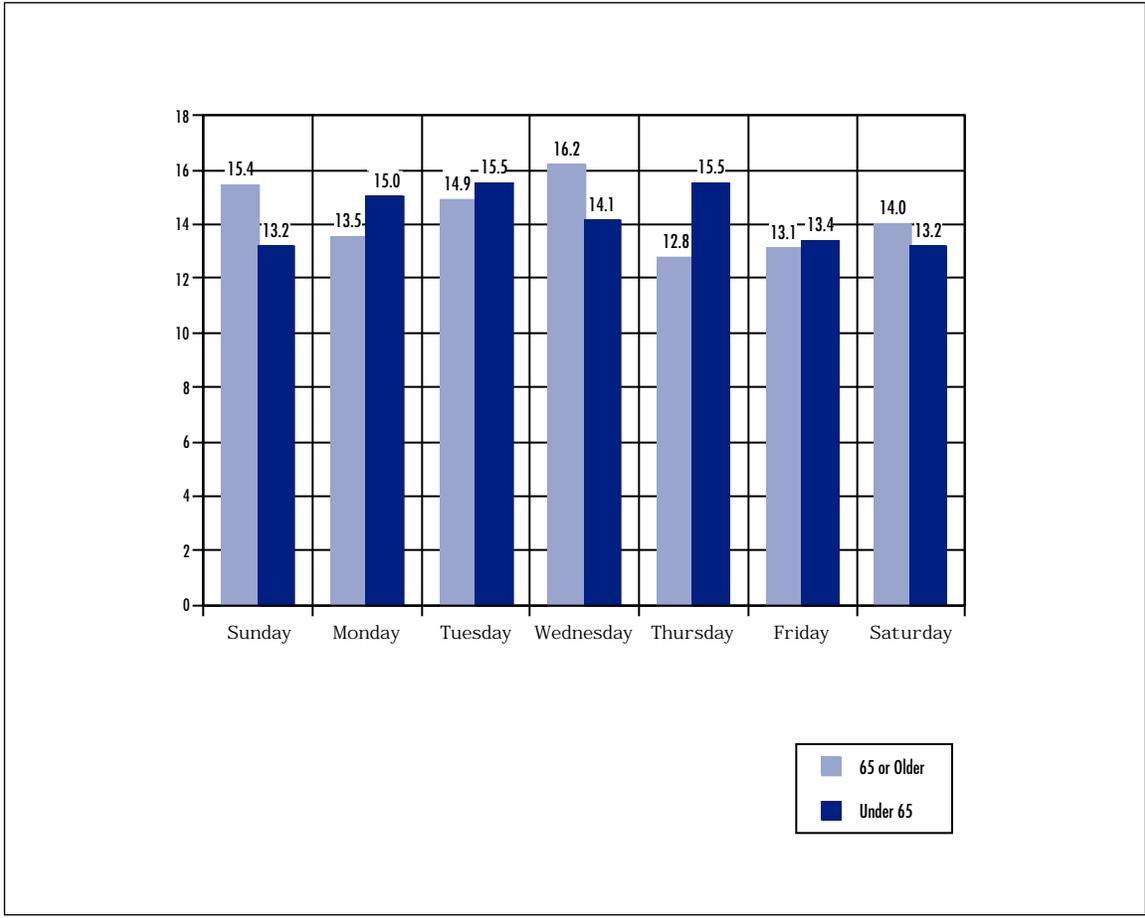


TABLE 4.16

**NUMBER OF PERSON TRIPS¹ TAKEN BY INDIVIDUALS 65 AND OLDER
BY MODE OF TRANSPORTATION AND TRIP PURPOSE
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

Mode	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ¹
PRIVATE VEHICLE						
Auto, Van—Driver	692 (65.4%)	7,312 (66.5%)	880 (53.9%)	2,796 (53.3%)	147 (52.9%)	11,827 (61.5%)
Auto, Van—Passenger	77 (7.2%)	1,882 (17.1%)	604 (37.0%)	1,335 (25.4%)	45 (16.0%)	3,943 (20.5%)
Pickup	148 (14.0%)	947 (8.6%)	62 (3.8%)	366 (7.0%)	6 (2.1%)	1,529 (8.0%)
Other Private Vehicle	6 (0.6%)	16 (0.1%)	** (0.0%)	28 (0.5%)	** (0.0%)	50 (0.3%)
Subtotal—Private	923 (87.2%)	10,157 (92.3%)	1,546 (94.7%)	4,525 (86.2%)	198 (71.0%)	17,349 (90.3%)
PUBLIC TRANSPORTATION						
Bus, Streetcar	56 (5.3%)	146 (1.3%)	11 (0.7%)	86 (1.6%)	4 (1.3%)	303 (1.6%)
Rail/Subway ³	21 (2.0%)	20 (0.2%)	** (0.0%)	4 (0.1%)	** (0.0%)	45 (0.2%)
Subtotal—Public	77 (7.3%)	166 (1.5%)	11 (0.7%)	90 (1.7%)	4 (1.3%)	348 (1.8%)
OTHER MEANS						
Amtrak	** (0.0%)	1 (0.0%)	** (0.0%)	3 (0.0%)	** (0.0%)	4 (0.0%)
Walk	38 (3.6%)	574 (5.2%)	70 (4.3%)	520 (9.9%)	70 (25.3%)	1,272 (6.6%)
Bike	6 (0.5%)	26 (0.2%)	** (0.0%)	41 (0.8%)	7 (2.4%)	80 (0.4%)
School Bus	5 (0.5%)	3 (0.0%)	** (0.0%)	1 (0.0%)	** (0.0%)	9 (0.0%)
Airplane	4 (0.4%)	0.1 (0.0%)	** (0.0%)	16 (0.3%)	** (0.0%)	20 (0.1%)
Other	5 (0.5%)	75 (0.7%)	5 (0.3%)	52 (1.0%)	** (0.0%)	137 (0.7%)
Subtotal—Other	58 (5.5%)	679 (6.2%)	75 (4.6%)	632 (12.0%)	77 (27.7%)	1,522 (7.9%)
TOTAL	1,058 (100.0%)	11,003 (100.0%)	1,632 (100.0%)	5,247 (100.0%)	279 (100.0%)	19,233⁴ (100.0%)
Avg. Trip Length (Miles)⁵	8.84	5.75	4.04	13.92	4.98	7.99

** Indicates no data reported.

¹ Does not include trips where respondent's age was unreported.

² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where both mode and purpose were unreported.

⁵ Calculated using only those records with valid data on trip length.

The trip distribution by trip purpose differed between individuals 65 years of age and older and those under 65. While 23% of the trips by individuals under 65 were for earning a living, this percentage was only 5.5% for individuals 65 and older. On the other

hand, while 40.2% of the trips by individuals under 65 were for family and personal reasons, this percent was 57.3% for individuals 65 and older. Privately owned vehicles were the most common mode of transportation for all age groups.

FIGURE 4.11

**DISTRIBUTION OF PERSON TRIPS TAKEN BY AGE CATEGORY AND TRIP PURPOSE
1990 NPTS**

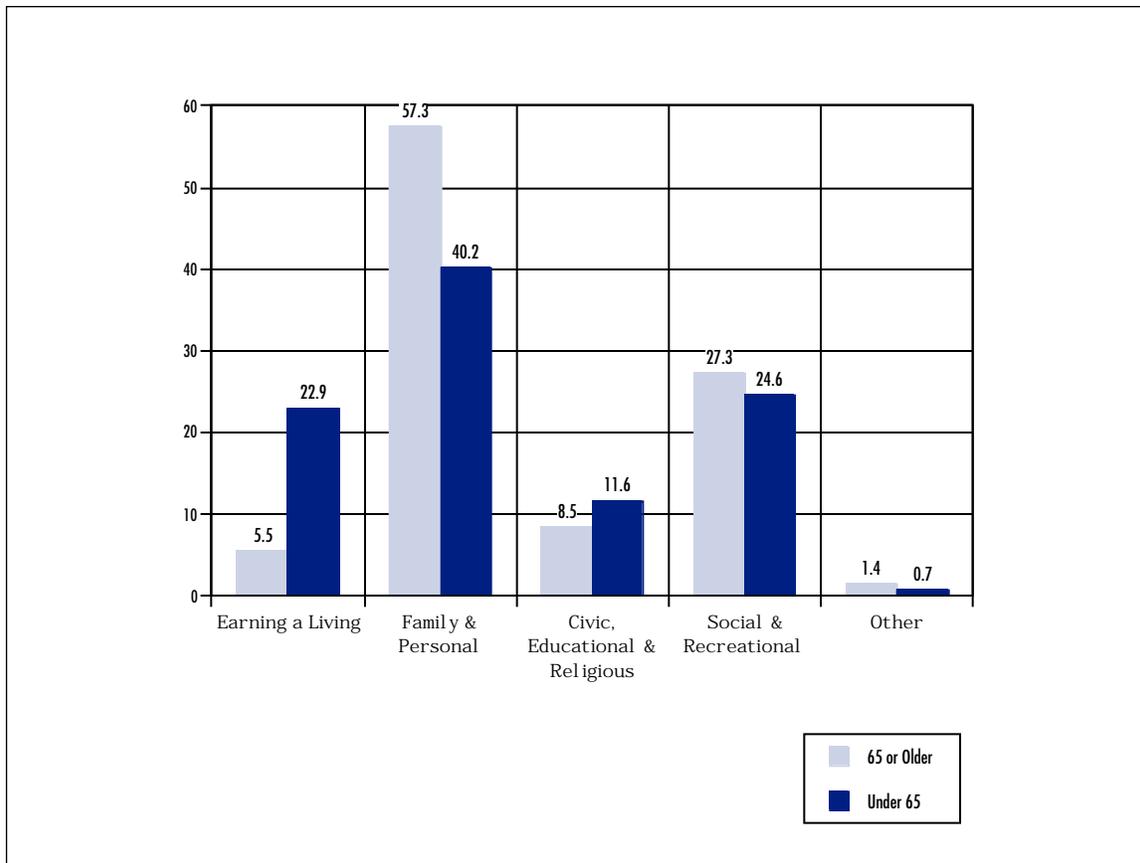


TABLE 4.17

**NUMBER OF HOUSEHOLDS AND NUMBER OF PERSONS BY HOUSEHOLD COMPOSITION
1983 AND 1990 NPTS¹
(THOUSANDS)**

Household Composition	1983		1990	
	No. of Households	No. of Persons	No. of Households	No. of Persons
Single Adult, No Children	16,955 ² (19.9%)	16,149 ² (7.6%)	15,505 ² (16.6%)	17,264 ² (7.8%)
Two or More Adults, No Children	22,629 (26.5%)	47,756 (22.4%)	24,182 (25.9%)	51,917 (23.4%)
Single Adult, Youngest Child Under 6	1,942 (2.2%)	5,947 (2.8%)	1,698 (1.8%)	3,753 (1.7%)
Two or More Adults, Youngest Child Under 6	13,776 (16.1%)	54,369 (25.5%)	13,791 (14.8%)	43,436 (19.6%)
Single Adult, Youngest Child 6-15	3,394 (4.0%)	8,966 (4.2%)	2,382 (2.6%)	6,952 (5.1%)
Two or More Adults, Youngest Child 6-15	12,277 (14.4%)	46,378 (21.8%)	12,332 (13.2%)	50,276 (22.6%)
Single Adult, Youngest Child 16 or Older	838 (1.0%)	1,866 (0.9%)	819 (0.9%)	1,892 (0.9%)
Two or More Adults, Youngest Child 16 or Older	4,618 (5.4%)	15,734 (7.4%)	4,444 (4.8%)	14,599 (6.6%)
Single Adult, Retired - No Children	2,400 ² (2.8%)	2,069 ² (1.0%)	7,642 ² (8.2%)	8,340 ² (3.8%)
Two or More Adults, Retired - No Children	6,546 (7.7%)	13,698 (6.4%)	9,777 (10.5%)	22,502 (10.1%)
TOTAL	85,375 (100.0%)	212,932 (100.0%)	93,347³ (100.0%)	222,101³ (100.0%)

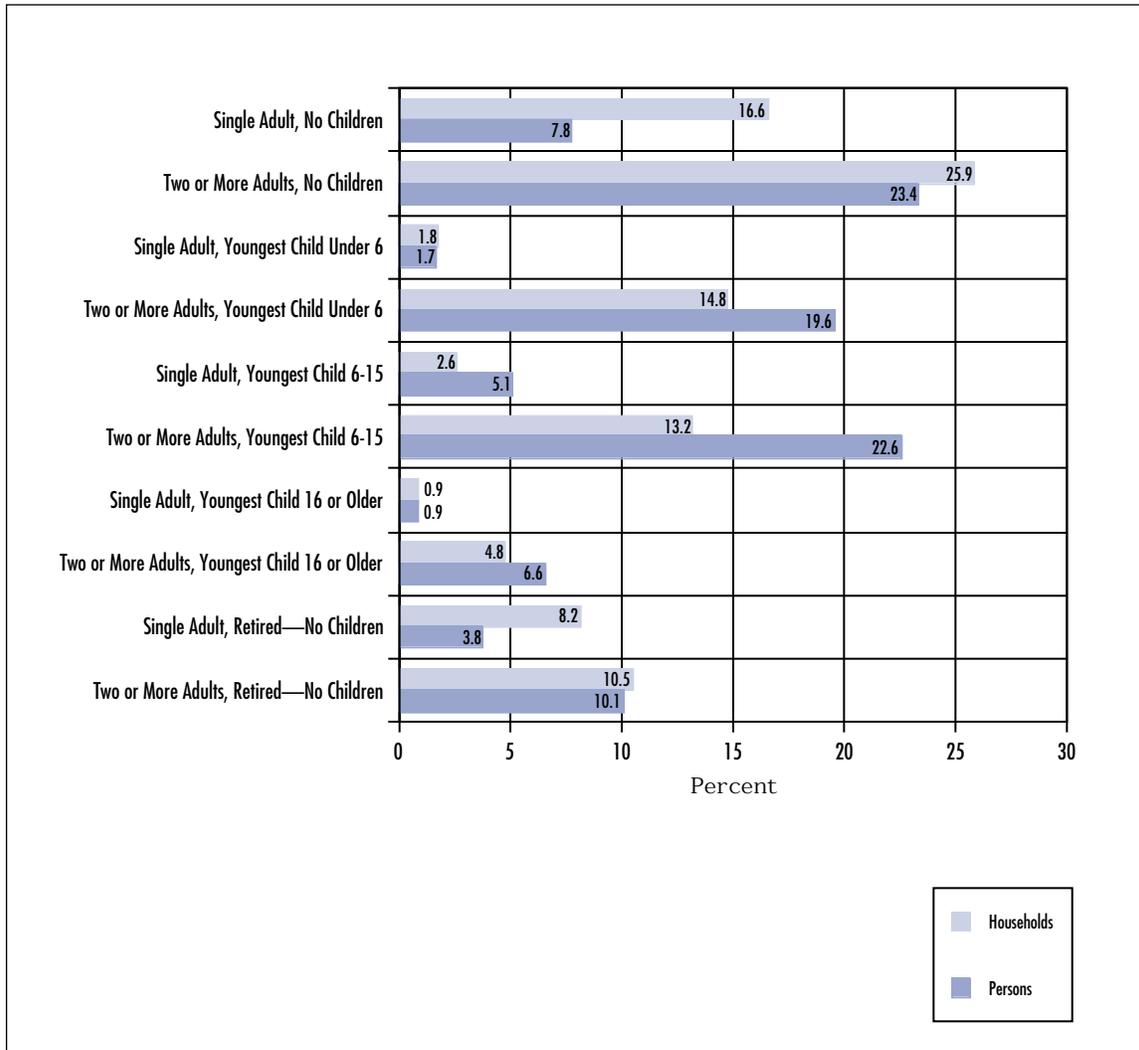
¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Different expansion factors contribute to the difference between the number of households and the number of persons for one-person households.

³ Includes households or persons where household composition was unreported.

FIGURE 4.12

DISTRIBUTION OF HOUSEHOLDS AND PERSONS BY HOUSEHOLD COMPOSITION
1990 NPTS



Trips taken by households with two or more adults without children or with the youngest child less than 16 years of age accounted for more than 68% of all person trips in 1990.

Trips taken by families with a single adult with the youngest child between the ages of 6 and 15 were the shortest.

TABLE 4.18

STATISTICS ON PERSON TRIPS AND TRAVEL BY HOUSEHOLD COMPOSITION
1990 NPTS

Household Composition	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length (Miles) ¹
Single Adult, No Children	21,522,319 (8.6%)	195,955,789 (8.5%)	9.26
Two or More Adults, No Children	61,501,816 (24.6%)	673,967,245 (29.1%)	11.14
Single Adult, Youngest Child Under 6	4,103,874 (1.6%)	26,801,823 (1.2%)	6.92
Two or More Adults, Youngest Child Under 6	49,693,690 (19.9%)	449,300,157 (19.4%)	9.20
Single Adult, Youngest Child 6-15	8,567,514 (3.4%)	54,659,054 (2.4%)	6.63
Two or More Adults, Youngest Child 6-15	58,125,754 (23.3%)	483,562,538 (20.9%)	8.46
Single Adult, Youngest Child 16-21	2,428,849 (1.0%)	17,179,089 (0.7%)	7.33
Two or More Adults, Youngest Child 16-21	17,778,447 (7.1%)	200,510,823 (8.7%)	11.53
Single Adult, Retired, No Children	6,038,763 (2.4%)	40,408,849 (1.8%)	6.90
Two or More Adults, Retired, No Children	18,680,833 (7.5%)	165,636,087 (7.2%)	8.98
TOTAL²	249,562,297 (100.0%)	2,315,300,000 (100.0%)	9.45

¹ Average trip length is calculated using only those records with trip mile information present.

² Includes travel where household composition was unreported.

Figure 4.13 graphically presents the impact of the presence of two or more adults on the amount of travel by the household unit. Tables 4.19 and 4.20 present data on personal travel per household by purpose and household composition. On average, a household took 2,700 trips per year and travelled more than 24,000 miles in 1990.

On a per-household basis, the majority of trips were taken for family and personal business. Households with a single retired adult and without children travelled by far the least per household compared to other households, both in terms of number of trips and miles.

FIGURE 4.13

DISTRIBUTION OF PERSON TRIPS AND HOUSEHOLDS BY HOUSEHOLD COMPOSITION 1990 NPTS

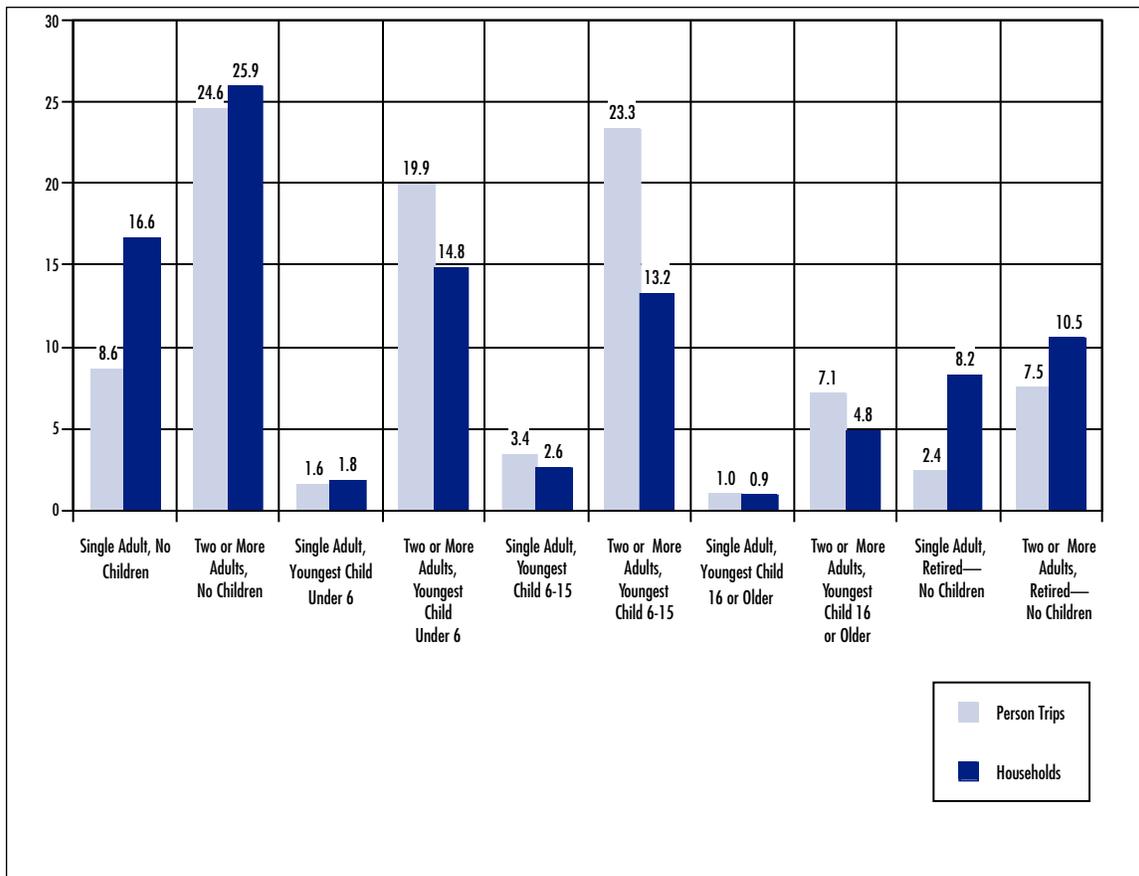


TABLE 4.19

ANNUAL PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD COMPOSITION
1990 NPTS

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Single Adult, No Children	371	578	61	369	9	1,388
Two Adults, No Children	748	995	145	637	18	2,543
Single Adult, Youngest Child Under 6	297	1,042	405	637	35	2,416
Two Adults, Youngest Child Under 6	753	1,587	473	771	19	3,603
Single Adult, Youngest Child 6-15	473	1,384	739	982	18	3,596
Two Adults, Youngest Child 6-15	872	1,777	885	1,140	36	4,710
Single Adult, Youngest Child 16 or Older	556	1,103	359	942	6	2,966
Two Adults, Youngest Child 16 or Older	1,062	1,508	398	1,009	21	3,998
Single Adult, Retired - No Children	12	463	65	234	16	790
Two Adults, Retired - No Children	174	1,037	136	541	22	1,910
AVERAGE FOR ALL HOUSEHOLDS	577	1,110	304	662	20	2,673

TABLE 4.20

ANNUAL PERSON MILES OF TRAVEL PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD COMPOSITION
1990 NPTS

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Single Adult, No Children	3,598	3,556	433	4,882	169	12,638
Two Adults, No Children	8,822	7,998	893	9,947	199	27,859
Single Adult, Youngest Child Under 6	1,885	6,757	1,305	5,613	220	15,780
Two Adults, Youngest Child Under 6	9,435	11,400	2,458	9,125	154	32,572
Single Adult, Youngest Child 6-15	4,896	7,238	3,476	7,264	73	22,947
Two Adults, Youngest Child 6-15	10,425	11,789	4,406	12,239	349	39,208
Single Adult, Youngest Child 16 or Older	5,212	7,452	2,031	6,188	102	20,985
Two Adults, Youngest Child 16 or Older	12,999	12,433	2,852	16,595	235	45,114
Single Adult, Retired - No Children	77	1,943	243	2,947	78	5,288
Two Adults, Retired - No Children	1,627	6,705	540	7,886	182	16,940
AVERAGE FOR ALL HOUSEHOLDS	6,679	7,757	1,599	8,567	195	24,803

This table presents demographic and travel statistics by place of residence. On average, 77% of American households were located in metropolitan areas. Americans who lived in metropolitan areas, but outside the central

city, took more trips and longer trips than others. Individuals who lived inside the central city of metropolitan areas walked twice as often as the others.

TABLE 4.21

DEMOGRAPHIC AND PERSONAL TRAVEL STATISTICS BY PLACE OF RESIDENCE
1990 NPTS

	In MSA, Central City	In MSA, Non-Central City	Non-MSA	TOTAL
Population (000)	80,030	92,251	49,820	222,101
	(36.0%)	(41.5%)	(22.4%)	(100.0%)
Total No. of Households (000)	34,579	37,353	21,415	93,347
	(37.0%)	(40.0%)	(23.0%)	(100.0%)
Average Household Size	2.57	2.69	2.52	2.61
Person Trips (000,000)	88,530	105,781	55,251	249,562
	(35.5%)	(42.4%)	(22.1%)	(100.0%)
Person Trips per Person	1,106	1,147	1,109	1,124
Person Miles of Travel (PMT) (000,000)	705,454	1,072,689	537,130	2,315,273
	(30.5%)	(46.3%)	(23.2%)	(100.0%)
PMT per Person	8,815	11,628	10,781	10,424
Average Trip Length (miles)¹	8.2	10.3	9.8	9.5
% Person Trips² by	100.0%	100.0%	100.0%	100.0%
- Privately Owned Vehicles (POV)	82.5%	89.8%	89.4%	87.1%
- Public Transportation	3.8%	1.2%	0.5%	2.0%
- Walk	10.4%	5.4%	5.6%	7.2%
% PMT² by	100.0%	100.0%	100.0%	100.0%
- POV	84.1%	87.9%	93.8%	88.1%
- Public Transportation	4.0%	2.1%	1.4%	2.5%
- Walk	0.9%	0.3%	0.4%	0.5%
¹ Average person trip length is calculated using only those records with trip mile information present.		² Includes trips by modes not shown on table.		

TABLE 4.22

**NUMBER OF PERSON TRIPS BY PUBLIC TRANSPORTATION VS. ALL OTHER MODES, TRIP PURPOSE
AND PLACE OF RESIDENCE
1990 NPTS (THOUSANDS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	MSA, Central City ²	MSA, Non-Central City ²	New York CMSA ³	Not in MSA	TOTAL
Public Transportation Trips					
Earning a Living	849,394 (38.1%)	364,019 (42.2%)	824,269 (54.0%)	46,259 (16.6%)	2,083,941 (42.6%)
Family and Personal Business	535,564 (24.1%)	174,808 (20.3%)	227,352 (14.9%)	45,021 (16.2%)	982,745 (20.1%)
Civic, Educational, and Religious	525,260 (23.6%)	186,413 (21.6%)	211,816 (13.9%)	152,482 (54.8%)	1,075,970 (22.0%)
Social and Recreational	310,239 (13.9%)	122,401 (14.2%)	253,670 (16.6%)	30,546 (11.0%)	716,856 (14.7%)
Other	6,397 (0.3%)	14,783 (1.7%)	6,887 (0.5%)	3,762 (1.4%)	31,829 (0.7%)
TOTAL⁴	2,226,853 (100.0%)	862,423 (100.0%)	1,525,112 (100.0%)	278,071 (100.0%)	4,892,460 (100.0%)
All Other Modes					
Earning a Living	16,745,996 (20.9%)	20,397,066 (21.7%)	3,388,576 (21.8%)	11,227,355 (20.4%)	51,758,993 (21.2%)
Family and Personal Business	33,477,749 (41.9%)	39,308,196 (41.7%)	6,547,798 (42.1%)	23,291,805 (42.4%)	102,625,548 (41.9%)
Civic, Educational, and Religious	8,789,733 (11.0%)	9,984,285 (10.6%)	1,665,121 (10.7%)	6,881,968 (12.5%)	27,321,106 (11.2%)
Social and Recreational	20,386,262 (25.5%)	23,727,587 (25.2%)	3,850,716 (24.7%)	13,117,794 (23.9%)	61,082,359 (25.0%)
Other	532,947 (0.7%)	717,369 (0.8%)	110,250 (0.7%)	438,406 (0.8%)	1,798,973 (0.7%)
TOTAL⁴	79,953,318 (100.0%)	94,175,641 (100.0%)	15,567,847 (100.0%)	54,973,031 (100.0%)	244,669,837 (100.0%)
¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.			³ The New York CMSA is displayed separately on this table because almost 1/3 of all public transportation trips in the U.S. are made in the New York area.		
² Excluding New York CMSA.			⁴ Includes trips where trip purpose was unreported.		

THE percentage of person trips taken by public transportation was the highest in metropolitan areas with population greater than 3 million (Table 4.23). The distribution of trips by mode of transportation in non-MSA areas was very similar to that in smaller metropolitan areas. Of the trips taken by automobiles and vans, 72% of these were taken by individuals who were the drivers of the vehicles. As mentioned in previous tables, walking was more common in larger metropolitan areas than in other areas.

Table 4.24 presents the average lengths of person trips. Trip lengths increased from 1983 to 1990 for all trip purposes. The length of social and recreational trips remained the longest compared to others.

TABLE 4.23

**NUMBER OF PERSON TRIPS BY MSA SIZE AND MODE OF TRANSPORTATION
1990 NPTS (THOUSANDS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Less Than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000 and Above	Not in MSA	TOTAL
PRIVATE VEHICLE							
Auto, Van— Driver	13,780,928	12,335,189	13,257,401	28,524,259	40,009,047	28,305,183	136,212,007
Auto, Van— Passenger	5,569,358	4,653,953	5,296,377	11,020,654	15,129,980	11,644,147	53,314,469
Pickup	2,995,132	2,218,763	2,539,930	4,279,064	4,727,610	8,872,593	25,633,090
Other Private Vehicle	239,663	328,563	187,850	383,893	540,598	552,879	2,233,446
Subtotal— Private	22,583,081 (89.1%)	19,536,468 (89.8%)	21,281,558 (90.5%)	44,207,870 (88.8%)	60,407,235 (81.8%)	49,374,802 (89.4%)	217,393,012 (87.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	242,629	149,618	248,579	779,265	1,875,492	247,606	3,543,188
Rail/Subway ²	**	4,071	1,761	56,890	1,256,083	30,465	1,349,271
Subtotal— Public	242,629 (1.0%)	153,689 (0.7%)	250,340 (1.1%)	836,155 (1.7%)	3,131,575 (4.2%)	278,071 (0.5%)	4,892,460 (2.0%)
OTHER MEANS							
Amtrak	2,668	3,835	808	0	45,320	1,682	54,313
Walk	1,550,305	1,309,140	1,162,694	3,100,137	7,766,578	3,117,906	18,006,760
Bike	235,442	160,103	145,326	311,116	578,683	335,844	1,766,513
School Bus	639,331	513,024	596,804	1,050,897	1,418,301	1,873,851	6,092,208
Airplane	21,852	3,022	7,959	64,019	83,746	22,255	202,853
Taxi	31,055	26,330	13,191	49,671	234,864	66,478	421,589
Other	39,368	36,058	46,646	137,002	127,395	140,476	526,945
Subtotal— Other	2,520,022 (9.9%)	2,051,512 (9.4%)	1,973,427 (8.4%)	4,712,842 (9.5%)	10,254,888 (13.9%)	5,558,491 (10.1%)	27,071,182 (10.8%)
TOTAL³	25,359,683 (100.0%)	21,758,484 (100.0%)	23,521,157 (100.0%)	49,793,560 (100.0%)	73,878,311 (100.0%)	55,251,102 (100.0%)	249,562,297 (100.0%)

** Indicates no data reported.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Includes trips where mode of transportation was unreported.

TABLE 4.24

**AVERAGE PERSON TRIP LENGTH¹ BY MSA SIZE AND TRIP PURPOSE
1983 AND 1990 NPTS²**

Purpose	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000- and Over	All MSA's	ALL AREAS
1983							
Earning a Living	7.4	8.9	10.2	11.1	11.5	10.0	9.9
Family and Personal Business	5.7	6.2	5.4	6.3	5.5	5.9	6.3
Civic, Educational and Religious	3.3	5.3	4.0	4.9	3.9	4.5	4.9
Social and Recreational	9.0	12.8	21.6	12.5	10.5	12.7	12.3
Other	5.8	5.2	3.9	8.5	4.4	5.9	8.0
ALL PURPOSES	6.7	8.6	10.5	9.1	8.0	8.5	8.7
1990							
Earning a Living	9.8	9.8	10.5	12.1	13.5	11.9	11.8
Family and Personal Business	7.1	6.5	7.1	6.8	6.5	6.7	7.1
Civic, Educational, and Religious	4.9	5.4	5.5	5.1	5.1	5.1	5.4
Social and Recreational	13.8	11.8	11.4	14.3	13.2	13.2	13.2
Other	7.9	4.1	9.5	11.1	15.4	10.9	10.3
ALL PURPOSES	9.2	8.4	8.7	9.7	9.7	9.3	9.5

¹ Calculated using only those records with valid data on trip length.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

TABLE 4.25

**AVERAGE DAILY PERSON MILES OF TRAVEL BY TRIP PURPOSE AND MSA SIZE
1983 AND 1990 NPTS¹**

Purpose	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000- and Over	All MSA's	ALL AREAS
1983							
Earning a Living	4.5	6.0	5.9	6.7	6.8	5.9	6.1
Family and Personal Business	5.4	6.3	5.8	5.7	4.7	7.4	6.0
Civic, Educational and Religious	1.4	1.6	1.4	1.4	1.1	2.0	1.6
Social and Recreational	8.0	10.5	16.2	8.7	6.2	8.8	9.1
Other	0.5	0.3	0.2	0.5	0.2	0.9	0.5
ALL PURPOSES	19.8	24.6	29.6	23.1	19.1	25.0	23.2
1990							
Earning a Living	6.5	6.4	7.2	8.2	8.8	7.0	7.7
Family and Personal Business	9.5	8.5	9.3	8.7	7.7	10.6	8.9
Civic, Educational, and Religious	1.8	1.8	2.0	1.6	1.6	2.3	1.8
Social and Recreational	12.0	9.5	8.2	10.8	9.5	9.4	9.9
Other	0.2	0.1	0.3	0.3	0.2	0.2	0.2
ALL PURPOSES	29.9	26.4	27.0	29.6	27.8	29.5	28.6

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

The following five tables present person travel activities categorized by the size of the urbanized area of residence (see below). More than 62% of Americans lived in urbanized areas in 1990 and they took 62.6% of all

person trips. On average, individuals residing in urbanized areas took shorter trips than those living outside urbanized areas.

TABLE 4.26

STATISTICS ON PERSON TRAVEL BY URBANIZED AREA SIZE¹
1990 NPTS

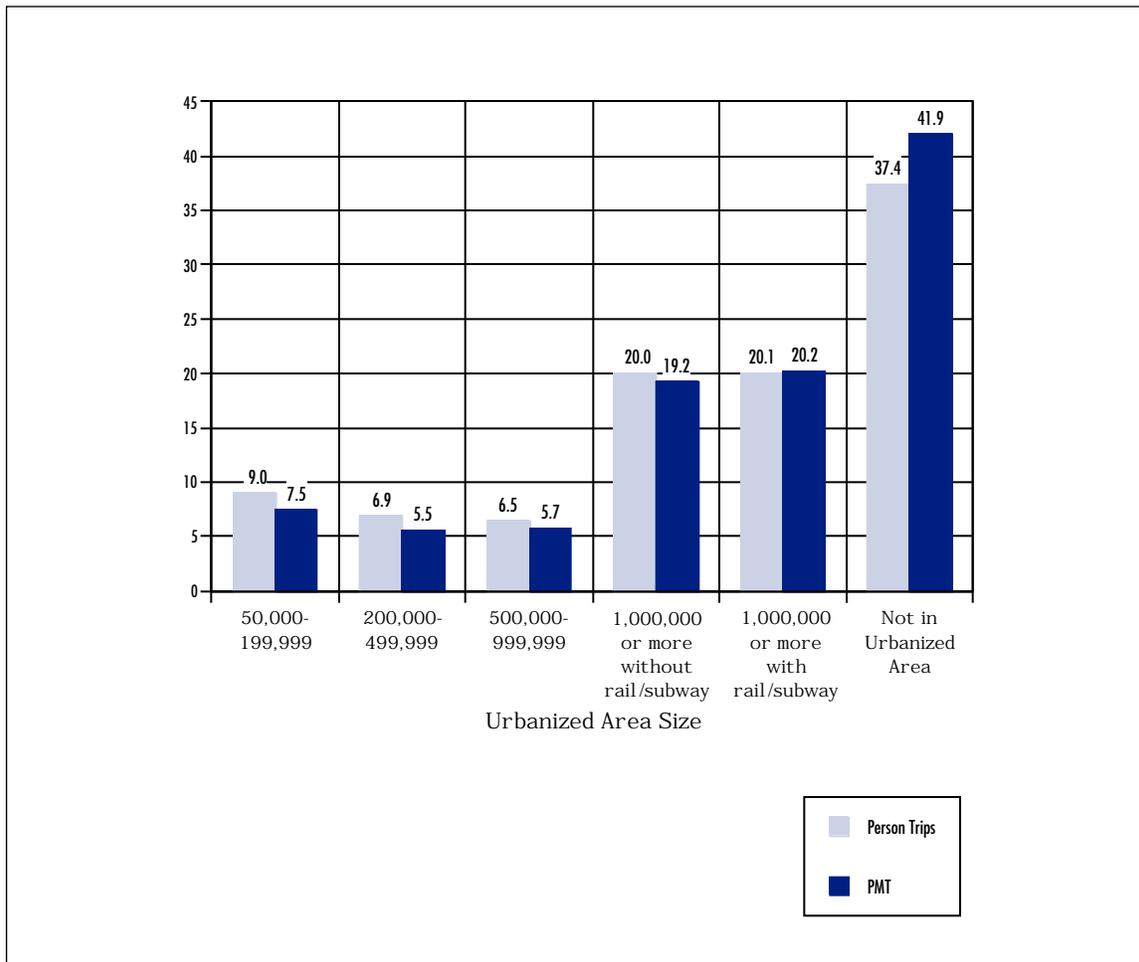
Urbanized Area Size	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ² (miles)	Number of Persons (000)	Number of Households (000)	Number of Trips per Person
50,000 - 199,999	22,513,064 (9.0%)	173,225,762 (7.5%)	7.80	18,545 (8.4%)	8,188 (8.8%)	1,214
200,000 - 499,999	17,096,063 (6.9%)	127,862,307 (5.5%)	7.61	14,732 (6.6%)	6,570 (7.0%)	1,160
500,000 - 999,999	16,333,733 (6.5%)	132,892,434 (5.7%)	8.29	14,228 (6.4%)	6,150 (6.6%)	1,148
1,000,000 or more without rail/subway	49,974,714 (20.0%)	443,535,384 (19.2%)	9.05	44,045 (19.8%)	18,505 (19.8%)	1,135
1,000,000 or more with rail/subway	50,221,864 (20.1%)	468,013,000 (20.2%)	9.65	47,360 (21.3%)	19,564 (21.0%)	1,060
Not in urbanized area	93,422,859 (37.4%)	969,744,478 (41.9%)	10.50	83,191 (37.5%)	34,370 (36.8%)	1,123
TOTAL	249,562,297 (100.0%)	2,315,273,365 (100.0%)	9.45	222,101 (100.0%)	93,347 (100.0%)	1,124

¹ An urbanized area is different from an MSA in that the urbanized area is the more densely developed area of a metropolitan area, whereas MSA's follow county lines. (See Glossary, Appendix A)

² Average trip length is calculated using only those records with trip mile information present.

FIGURE 4.14

**DISTRIBUTION OF PERSON TRIPS AND TRAVEL BY URBANIZED AREA SIZE
1990 NPTS**



The most noteworthy difference in average trip length was in Amtrak trips. Those taken by individuals residing in large urban areas with subway/rail facilities averaged 45 miles, whereas those by individuals residing outside urban areas averaged 159 miles. This differ-

ence may be due to the fact that individuals residing inside larger urban areas used Amtrak for daily intra-urban commuting while those residing outside urban areas used Amtrak for intercity travel.

TABLE 4.27

AVERAGE PERSON TRIP LENGTH¹
BY SELECTED MODE OF TRANSPORTATION AND URBANIZED AREA SIZE
1990 NPTS (MILES)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

	Urbanized Area Size						TOTAL
	50,000 - 199,999	200,000 - 499,999	500,000 - 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	
PRIVATE VEHICLE	7.98	7.92	8.62	8.76	9.33	10.85	9.53
PUBLIC TRANSPORTATION							
Bus, Streetcar	4.33	6.45	12.28	12.79	8.18	24.49	11.04
Rail/Subway ³	*	*	*	6.04	16.48	8.28	16.17
OTHER MODE							
Amtrak	*	**	**	**	45.12	159.24	106.54
Walk	0.58	0.71	0.77	0.67	0.66	0.58	0.64
Bike	1.41	1.65	4.22	1.65	1.85	2.45	1.99
School Bus	5.52	4.56	4.07	4.73	3.54	6.93	5.68
TOTAL	7.80	7.61	8.29	9.05	9.65	10.50	9.45

* Indicates that there were insufficient data reported.
** Indicates no data were reported.
¹ Average trip length is calculated using only those records with trip mile information present.
² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.
³ Rail/Subway includes trips by subway, elevated rail and commuter train.

FIGURE 4.15

**AVERAGE PERSON TRIP LENGTH BY SELECTED MODE OF TRANSPORTATION
AND SELECTED URBANIZED AREA SIZE
1990 NPTS**

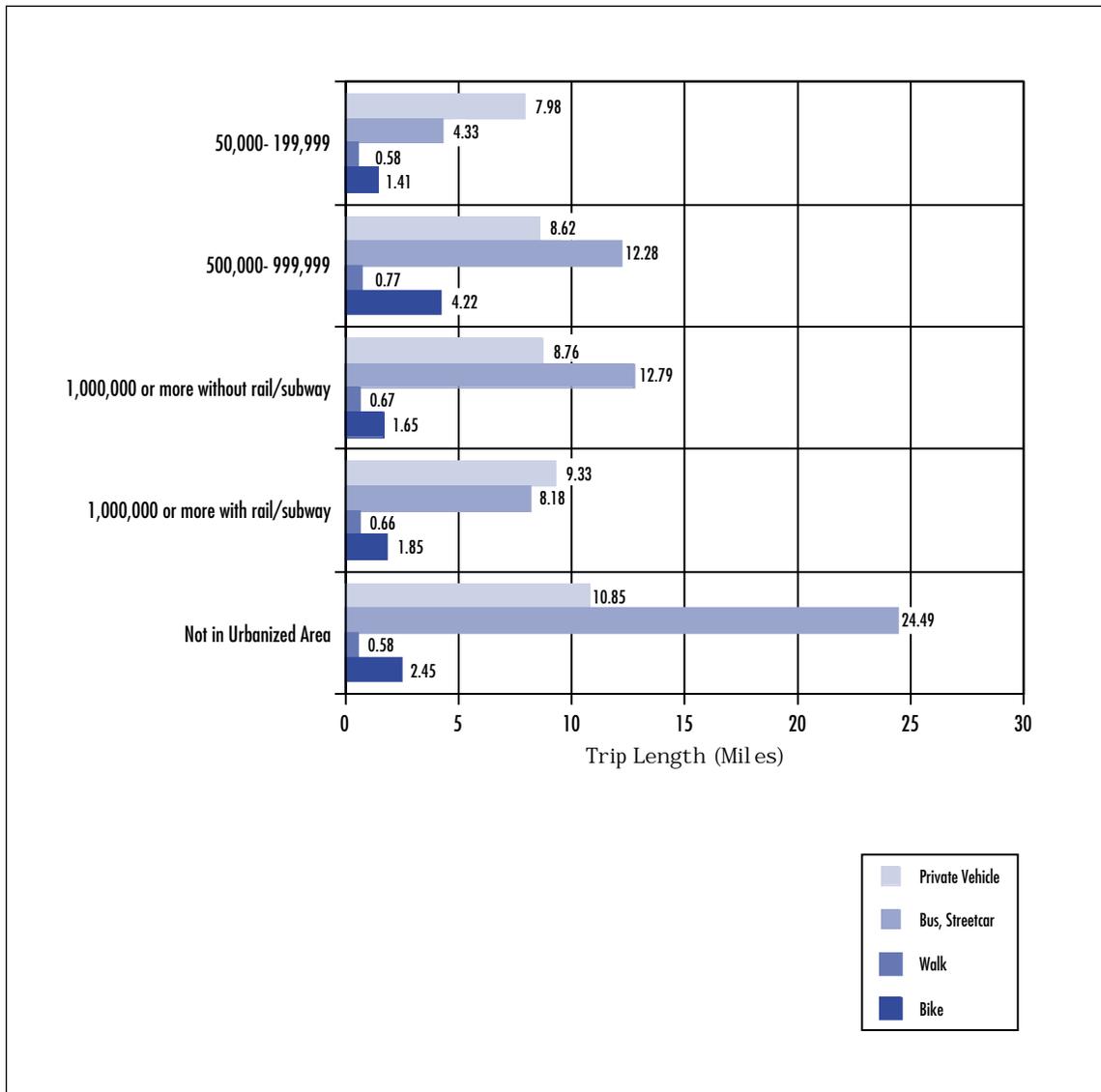


TABLE 4.28

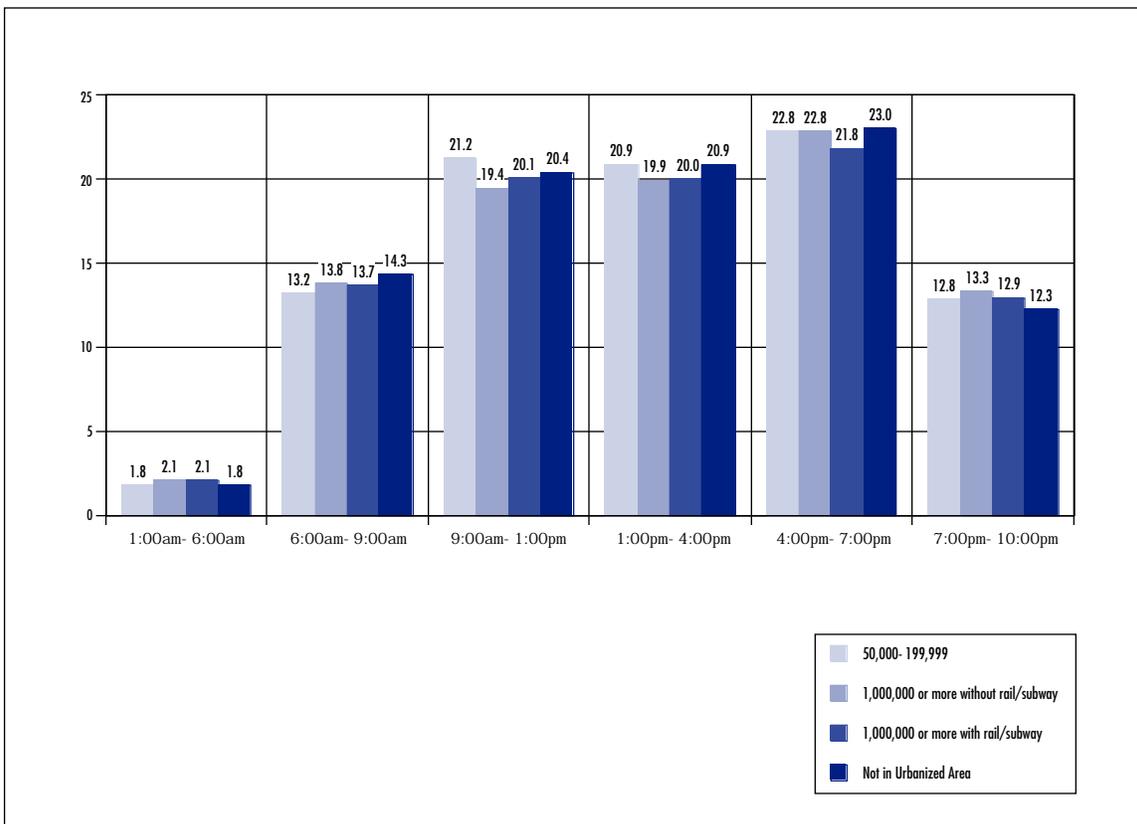
**NUMBER OF PERSON TRIPS BY URBANIZED AREA SIZE AND TIME OF DAY
1990 NPTS
(THOUSANDS)**

	50,000 - 199,999	200,000 - 499,999	500,000 - 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	TOTAL
1:00 a.m. - 6:00 a.m.	410,151 (1.8%)	313,842 (1.8%)	306,392 (1.9%)	1,052,707 (2.1%)	1,047,519 (2.1%)	1,706,508 (1.8%)	4,837,119 (1.9%)
6:00 a.m. - 9:00 a.m.	2,970,704 (13.2%)	2,308,624 (13.5%)	2,197,154 (13.5%)	6,905,807 (13.8%)	6,877,651 (13.7%)	13,354,202 (14.3%)	34,614,142 (13.9%)
9:00 a.m. - 1:00 p.m.	4,766,422 (21.2%)	3,279,152 (19.2%)	3,151,683 (19.3%)	9,696,295 (19.4%)	10,069,544 (20.1%)	19,100,978 (20.4%)	50,064,074 (20.1%)
1:00 p.m. - 4:00 p.m.	4,699,527 (20.9%)	3,562,894 (20.8%)	3,279,810 (20.1%)	9,927,154 (19.9%)	10,026,861 (20.0%)	19,487,639 (20.9%)	50,983,855 (20.4%)
4:00 p.m. - 7:00 p.m.	5,127,299 (22.8%)	4,117,596 (24.1%)	3,906,228 (23.9%)	11,381,937 (22.8%)	10,968,944 (21.8%)	21,454,200 (23.0%)	56,956,204 (22.8%)
7:00 p.m. - 10:00 p.m.	2,881,846 (12.8%)	2,115,407 (12.4%)	2,264,388 (13.9%)	6,643,361 (13.3%)	6,497,030 (12.9%)	11,530,656 (12.3%)	31,932,688 (12.8%)
10:00 p.m. - 1:00 a.m.	882,580 (3.9%)	758,593 (4.4%)	643,160 (3.9%)	2,112,613 (4.2%)	2,281,916 (4.5%)	3,248,327 (3.5%)	9,927,189 (4.0%)
TOTAL¹	22,513,064 (100.0%)	17,096,063 (100.0%)	16,333,733 (100.0%)	49,974,714 (100.0%)	50,221,864 (100.0%)	93,422,859 (100.0%)	249,562,297 (100.0%)

¹ Includes trips where start time of trip was unreported.

There was no significant difference in the time travel occurred among people living in different types of urban areas.

FIGURE 4.16
DISTRIBUTION OF PERSON TRIPS BY SELECTED TIME OF DAY AND SELECTED URBANIZED AREA SIZE
1990 NPTS



Segmented Trips in NPTS

What

In the 1990 NPTS, certain trips were given “segmented” treatment, that is, they were broken into component parts. A trip was given segmented treatment if both of the following conditions occurred:

- there was a change of vehicle or a change of mode on the trip, AND
- one of the modes used was a public transportation mode (bus, subway, elevated rail, commuter train, streetcar or trolley).

Why

Transportation planners and researchers have a high degree of interest in multi-modal trips, and the data from segmented trips can help in answering questions such as “What access modes are used to get to the bus, subway and commuter train?” or “How does travel time of segmented trips compare with non-segmented?” Certain trips were given segmented treatment in order to get more complete data on multi-modal trips and on the use of public transportation. In earlier NPTS surveys, if more than one mode was used on a trip, the entire trip was considered to be made on the mode that was used for the longest distance. However, this procedure had the effect of undercounting the use of transit. For example, if you walked to the bus stop, took the bus to a subway station, and took the subway to work, the entire trip would have been considered a subway trip (assuming this was the longest segment) and the walk and bus portions would have been ignored.

How

If a trip met the two conditions above, it would be given segmented treatment. First, characteristics of the trip as a whole would be collected, such as purpose, number of people on the trip, starting time of the trip, whether it was a home-based trip, etc. Second, each time there was a change of mode (e.g. auto to commuter train) or a change of vehicle (e.g. one bus to another), it would be considered a segment.

Certain information was collected on each segment, namely, the mode used, the starting time of the segment, the length of the segment in minutes and, if the segment was on transit, the waiting time and whether the respondent sat or stood on the segment.

In this report

A limited number of data relationships are presented comparing segmented and non-segmented trips. Note that, in each case, it is the entire trip, from origin to destination, that is being presented.

For more detailed information...

A public use dataset is available on 9-track tape and on diskettes. The NPTS dataset contains a record for each trip made by a survey respondent. For each segmented trip, a separate file contains information collected at the individual segment level.

Caveat

In spite of giving certain trips “segmented treatment”, the number of transit trips reported in NPTS is 20% lower than the Federal Transit Administration’s Section 15 reporting system. See Limitations of Data on Transit in Chapter 1, Section 5 for a comparison.

Of all person trips, only 0.8% were segmented. There were significantly more segmented trips by individuals residing in urbanized areas with population more than 1 million and with rail and/or subway facilities than

by other individuals, 2.8% vs. 0.3%. On average, segmented trips were longer than non-segmented trips, 13.6 miles vs. 9.4 miles.

TABLE 4.29

STATISTICS OF SEGMENTED PERSON TRAVEL BY URBANIZED AREA SIZE
1990 NPTS

Urbanized Area Size	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ¹ (miles)
50,000 - 199,999	89,894 (4.7%)	382,315 (1.7%)	4.61
200,000 - 499,999	40,844 (2.1%)	398,033 (1.8%)	10.96
500,000 - 999,999	66,500 (3.5%)	777,465 (3.4%)	12.59
1,000,000 or more without rail/subway	233,821 (12.2%)	1,794,736 (8.0%)	8.40
1,000,000 or more with rail/subway	1,381,463 (71.9%)	15,913,025 (70.4%)	13.77
Not in urbanized area	107,417 (5.6%)	3,308,708 (14.7%)	31.50
TOTAL	1,919,939 (100.0%)	22,574,282 (100.0%)	13.63

¹ Average trip length is calculated using only those records with trip mile information present.

TABLE 4.30

**STATISTICS OF NON-SEGMENTED PERSON TRAVEL BY URBANIZED AREA SIZE
1990 NPTS**

Urbanized Area Size	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ¹ (miles)
50,000 - 199,999	22,423,171 (9.0%)	172,843,447 (7.5%)	7.82
200,000 - 499,999	17,055,218 (6.9%)	127,464,274 (5.6%)	7.60
500,000 - 999,999	16,267,233 (6.6%)	132,114,968 (5.8%)	8.27
1,000,000 or more without rail/subway	49,740,893 (20.1%)	441,740,648 (19.3%)	9.05
1,000,000 or more with rail/subway	48,840,401 (19.7%)	452,099,975 (19.7%)	9.55
Not in urbanized area	93,315,442 (37.7%)	966,435,770 (42.1%)	10.48
TOTAL	247,642,358 (100.0%)	2,292,699,082 (100.0%)	9.43

¹ Average trip length is calculated using only those records with trip mile information present.

FIGURE 4.17

AVERAGE PERSON TRIP LENGTH FOR SEGMENTED VS. NON-SEGMENTED TRIPS BY URBANIZED AREA SIZE
1990 NPTS

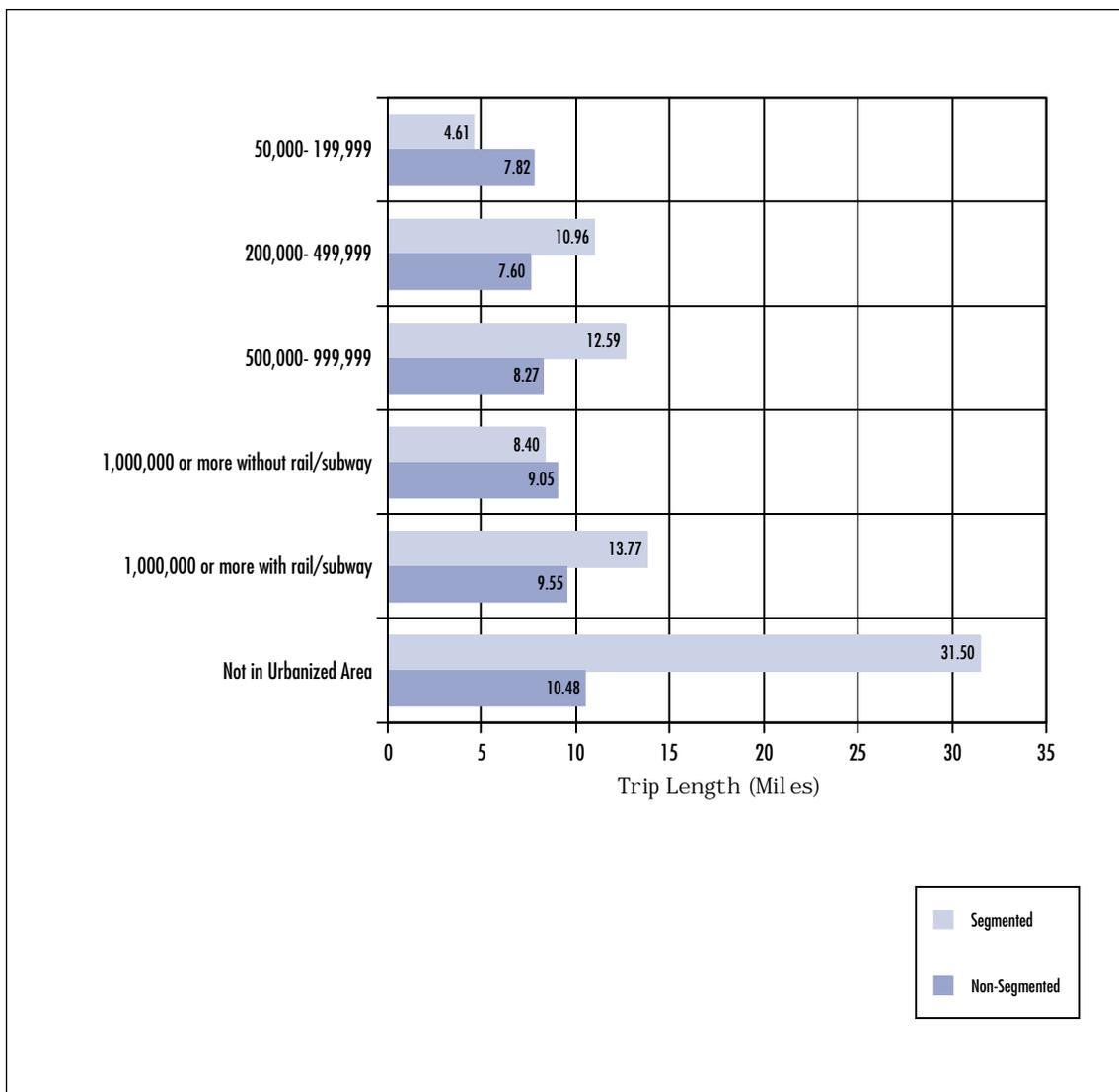


Table 4.31 presents data on person miles of travel by household income and trip purpose. Part 1 of the table presents 1990 data and Part 2, 1983 data. In 1990, households earning more than \$40,000 a year travelled 3.7 times what households with an annual income less than \$10,000 did. Furthermore,

higher-income households tended to travel more for earning a living than households in lower income groups. Similar patterns are shown in 1983 data (see Part 2).

TABLE 4.31 (PART 1)

**NUMBER OF PERSON MILES OF TRAVEL BY HOUSEHOLD INCOME AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

Purpose	Under \$10,000	\$10,000-\$19,999	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000 or more	Unreported Income	TOTAL
Earning a Living	19,003 (19.2%)	55,027 (22.9%)	67,894 (23.7%)	86,364 (25.4%)	257,799 (30.1%)	137,449 (27.9%)	623,536 (26.9%)
Family & Personal Business	37,849 (38.3%)	77,719 (32.3%)	101,718 (35.5%)	102,409 (30.1%)	242,105 (28.3%)	162,312 (32.9%)	724,112 (31.3%)
Civic, Educational, & Religious	9,474 (9.6%)	18,919 (7.9%)	19,295 (6.7%)	22,420 (6.6%)	47,487 (5.6%)	31,677 (6.4%)	149,272 (6.4%)
Social & Recreational	31,589 (31.9%)	87,671 (36.5%)	93,384 (32.6%)	127,428 (37.4%)	301,507 (35.2%)	158,096 (32.1%)	799,675 (34.5%)
Other	1,012 (1.0%)	1,023 (0.4%)	4,412 (1.5%)	1,713 (0.5%)	6,990 (0.8%)	3,047 (0.6%)	18,197 (0.8%)
TOTAL¹	98,927 (100.0%)	240,395 (100.0%)	286,722 (100.0%)	340,376 (100.0%)	856,002 (100.0%)	492,851 (100.0%)	2,315,273 (100.0%)
NUMBER OF HOUSEHOLDS (000)	9,252 (9.9%)	13,011 (13.9%)	12,294 (13.2%)	11,323 (12.1%)	21,704 (23.3%)	25,763 (27.6%)	93,347 (100.0%)
PERSON MILES PER HOUSEHOLD	10,692	18,473	23,321	30,057	39,435	19,130	24,803

¹ Includes miles of travel where trip purpose was unreported.

TABLE 4.31 (PART 2)

**NUMBER OF PERSON MILES OF TRAVEL BY HOUSEHOLD INCOME¹ AND TRIP PURPOSE
1983 NPTS²
(MILLIONS)**

Purpose	Under \$10,000	\$10,000- \$19,999	\$20,000- \$29,999	\$30,000- \$39,999	\$40,000 or more	TOTAL
Earning a Living	29,756 (15.5%)	80,329 (26.3%)	102,429 (29.0%)	93,821 (28.6%)	205,058 (26.7%)	511,393 (26.3%)
Family and Personal Business	55,289 (28.8%)	89,797 (29.4%)	92,892 (26.3%)	77,419 (23.6%)	168,961 (22.0%)	484,358 (24.9%)
Civic, Educational, and Religious	14,590 (7.6%)	21,075 (6.9%)	23,312 (6.6%)	17,058 (5.2%)	54,528 (7.1%)	130,563 (6.7%)
Social and Recreational	84,662 (44.1%)	107,817 (35.3%)	128,919 (36.5%)	134,499 (41.0%)	322,562 (42.0%)	778,459 (40.0%)
Other	7,679 (4.0%)	6,414 (2.1%)	5,651 (1.6%)	5,249 (1.6%)	16,896 (2.2%)	41,889 (2.1%)
TOTAL	191,976 (100.0%)	305,432 (100.0%)	353,203 (100.0%)	328,046 (100.0%)	768,005 (100.0%)	1,946,662 (100.0%)
NUMBER OF HOUSEHOLDS³ (000)	18,016 (21.1%)	18,437 (21.6%)	15,694 (18.4%)	12,065 (14.1%)	21,167 (24.8%)	85,371 (100.0%)
PERSON MILES PER HOUSEHOLD	10,656	16,566	22,506	27,190	36,283	22,802

¹ Incomes are in 1990 dollars.

³ In the 1983 survey, income was imputed where not reported.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

TABLE 4.32

**AVERAGE DAILY PERSON TRIPS, PERSON TRAVEL, AND PERSON TRIP LENGTH
BY HOUSEHOLD INCOME AND TRIP PURPOSE
1990 NPTS**

Purpose	Under \$10,000	\$10,000- \$19,999	\$20,000- \$29,999	\$30,000- \$39,999	\$40,000 and More
Average Daily Person Trips					
Earning a Living	0.3	0.6	0.7	0.7	0.8
Family and Personal Business	1.1	1.2	1.4	1.4	1.4
Civic, Educational, and Religious	0.4	0.3	0.3	0.4	0.4
Social and Recreational	0.7	0.7	0.8	0.8	0.9
Other	0.1	0.1	0.1	0.1	0.1
TOTAL	2.6	2.9	3.3	3.4	3.6
Average Daily Person Miles of Travel					
Earning a Living	3.1	5.5	6.4	8.1	11.4
Family and Personal Business	6.1	7.7	9.7	9.6	10.7
Civic, Educational, and Religious	1.5	1.9	1.8	2.1	2.1
Social and Recreational	5.1	8.7	8.9	11.9	13.3
Other	0.2	0.1	0.4	0.2	0.3
TOTAL	16.0	23.9	27.2	31.9	37.8
Average Person Trip Length (miles)¹					
Earning a Living	9.3	10.0	9.6	11.0	13.9
Family and Personal Business	5.5	6.4	6.9	6.9	7.5
Civic, Educational, and Religious	3.6	6.0	5.5	5.7	5.8
Social and Recreational	7.4	12.5	11.2	14.8	15.1
Other	5.8	6.1	17.1	7.9	11.6
ALL PURPOSES	6.2	8.6	8.5	9.6	10.8
¹ Average trip length is calculated only for records where trip mile information is present.					

Lower income households used public transportation or walked to their destinations more often than higher income households (Table 4.34). Household members in households earning less than \$10,000 a year took

25% fewer trips per person than those in households with an annual income more than \$40,000—967 trips vs. 1,293 trips per year.

TABLE 4.33

**SUMMARY OF PERSON TRIPS BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,999	\$40,000- and More	Unreported Income	TOTAL
PRIVATE VEHICLE							
Subtotal—Private	11,520 (70.0%)	24,180 (84.6%)	30,143 (87.6%)	31,839 (88.7%)	73,073 (90.9%)	46,637 (86.6%)	217,392 (87.1%)
PUBLIC TRANSPORTATION							
Subtotal—Public	605 (3.7%)	795 (2.8%)	689 (2.0%)	461 (1.3%)	986 (1.2%)	1,358 (2.5%)	4,892 (2.0%)
OTHER MEANS							
Subtotal—Other	4,311 (26.2%)	3,548 (12.4%)	3,575 (10.4%)	3,588 (10.0%)	6,241 (7.8%)	5,808 (10.8%)	27,071 (10.8%)
TOTAL²	16,456 (100.0%)	28,568 (100.0%)	34,426 (100.0%)	35,915 (100.0%)	80,345 (100.0%)	53,852 (100.0%)	249,562 (100.0%)
NUMBER OF HOUSEHOLDS (000)	9,252 (9.9%)	13,011 (13.9%)	12,294 (13.2%)	11,323 (12.1%)	21,704 (23.3%)	25,763 (27.6%)	93,347 (100.0%)
PERSONS PER HOUSEHOLD	1.84	2.12	2.35	2.59	2.86	2.22	2.38
NUMBER OF PERSON TRIPS PER HOUSEHOLD	1,779	2,196	2,800	3,172	3,702	2,090	2,673
NUMBER OF PERSON TRIPS PER PERSON	967	1,038	1,193	1,225	1,293	941	1,124
¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.				² Includes trips where mode of transportation was unreported.			

TABLE 4.34

**NUMBER OF PERSON TRIPS BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,999	\$40,000- and More	Unreported Income	TOTAL
PRIVATE VEHICLE							
Auto, Van—Driver	6,850 (41.6%)	15,043 (52.6%)	18,567 (53.9%)	19,495 (54.3%)	46,675 (58.1%)	29,582 (54.9%)	136,212 (54.6%)
Auto, Van—Passenger	3,465 (21.0%)	5,911 (20.7%)	7,277 (21.1%)	7,475 (20.8%)	17,594 (21.9%)	11,592 (21.5%)	53,314 (21.4%)
Pickup	1,145 (7.0%)	2,939 (10.3%)	3,981 (11.6%)	4,460 (12.4%)	8,064 (10.0%)	5,043 (9.4%)	25,633 (10.3%)
Other Private Vehicle	60 (0.4%)	287 (1.0%)	318 (0.9%)	409 (1.1%)	740 (0.9%)	420 (0.8%)	2,233 (0.9%)
Subtotal—Private	11,520 (70.0%)	24,180 (84.6%)	30,143 (87.6%)	31,839 (88.7%)	73,073 (90.9%)	46,637 (86.6%)	217,392 (87.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	556 (3.4%)	666 (2.3%)	490 (1.4%)	315 (0.9%)	537 (0.7%)	979 (1.8%)	3,543 (1.4%)
Rail/Subway ²	49 (0.3%)	129 (0.4%)	199 (0.6%)	146 (0.4%)	448 (0.6%)	379 (0.7%)	1,349 (0.5%)
Subtotal—Public	605 (3.7%)	795 (2.8%)	689 (2.0%)	461 (1.3%)	986 (1.2%)	1,358 (2.5%)	4,892 (2.0%)
OTHER MEANS							
Amtrak	20 (0.1%)	7 (0.0%)	** (0.0%)	3 (0.0%)	24 (0.0%)	1 (0.0%)	54 (0.0%)
Walk	3,513 (21.3%)	2,440 (8.5%)	2,442 (7.1%)	2,142 (6.0%)	3,669 (4.6%)	3,802 (7.1%)	18,007 (7.2%)
Bike	186 (1.1%)	205 (0.7%)	292 (0.8%)	329 (0.9%)	477 (0.6%)	278 (0.5%)	1,767 (0.7%)
School Bus	489 (3.0%)	757 (2.7%)	748 (2.2%)	954 (2.7%)	1,708 (2.1%)	1,437 (2.7%)	6,092 (2.4%)
Airplane	2 (0.0%)	27 (0.1%)	7 (0.0%)	32 (0.1%)	86 (0.1%)	48 (0.1%)	203 (0.1%)
Taxi	81 (0.5%)	20 (0.1%)	45 (0.1%)	47 (0.1%)	118 (0.1%)	110 (0.2%)	422 (0.2%)
Other	21 (0.1%)	94 (0.3%)	41 (0.1%)	80 (0.2%)	159 (0.2%)	132 (0.2%)	527 (0.2%)
Subtotal—Other	4,311 (26.2%)	3,550 (12.4%)	3,575 (10.4%)	3,588 (10.0%)	6,241 (7.8%)	5,808 (10.8%)	27,071 (10.8%)
TOTAL³	16,456 (100.0%)	28,568 (100.0%)	34,426 (100.0%)	35,915 (100.0%)	80,345 (100.0%)	53,851 (100.0%)	249,562 (100.0%)

** Indicates no data reported.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Includes trips where mode of transportation was unreported.

FIGURE 4.18

**DISTRIBUTION OF PERSON TRIPS BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS
(WITHIN INCOME GROUP)**

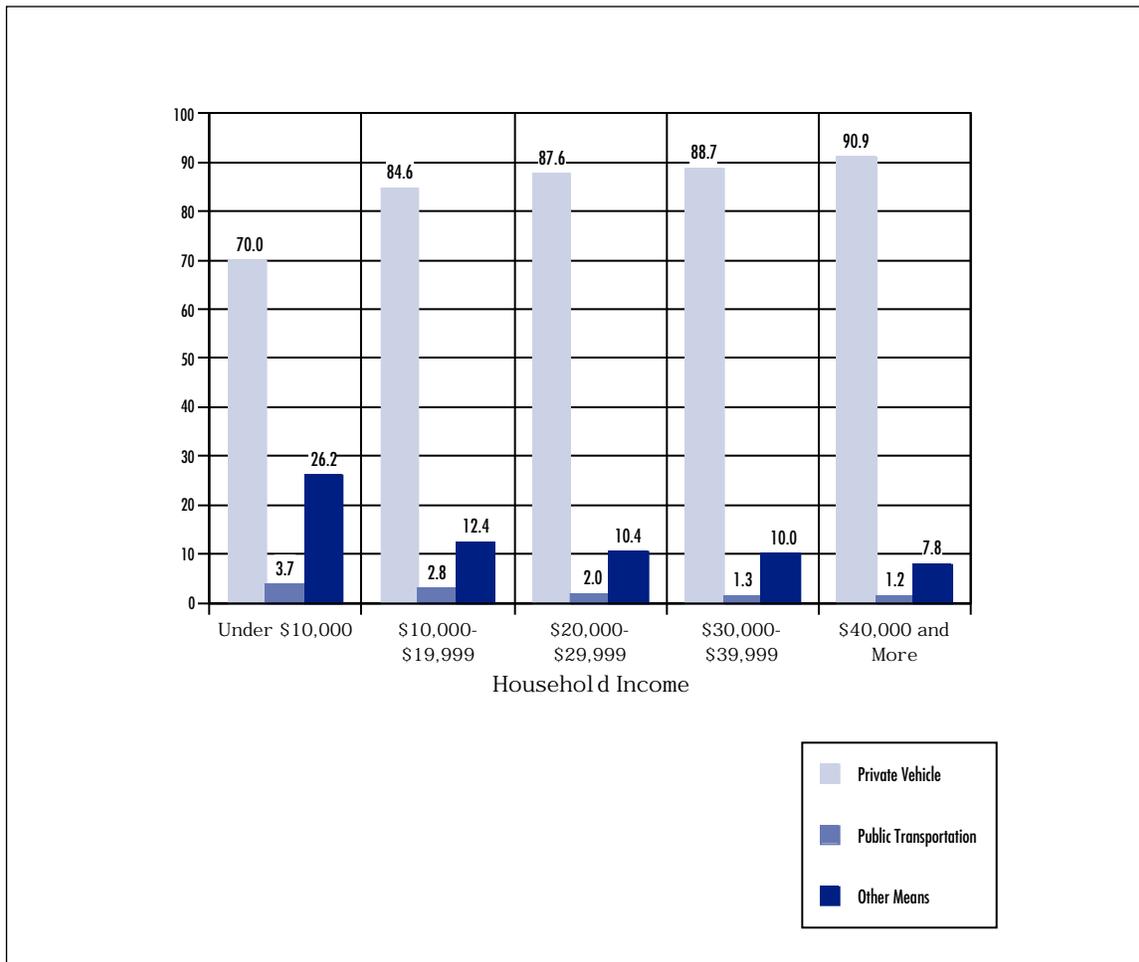


TABLE 4.35

**NUMBER OF PERSON MILES OF TRAVEL BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,999	\$40,000- and More	Unreported Income	TOTAL
PRIVATE VEHICLE							
Auto, Van—Driver	47,583 (48.1%)	105,658 (44.0%)	151,974 (53.0%)	173,167 (50.9%)	443,224 (51.8%)	250,423 (50.8%)	1,172,029 (50.6%)
Auto, Van—Passenger	30,889 (31.2%)	62,280 (25.9%)	69,171 (24.1%)	78,653 (23.1%)	206,949 (24.2%)	117,100 (23.7%)	565,042 (24.4%)
Pickup	11,536 (11.7%)	27,615 (11.5%)	42,612 (14.9%)	45,281 (13.3%)	89,289 (10.4%)	51,612 (10.5%)	267,944 (11.6%)
Other Private Vehicle	232 (0.2%)	5,156 (2.1%)	5,260 (1.8%)	7,996 (2.3%)	10,646 (1.2%)	5,677 (1.2%)	34,967 (1.5%)
Subtotal	90,240 (91.2%)	200,709 (83.5%)	269,017 (93.8%)	305,097 (89.6%)	750,108 (87.6%)	424,812 (86.2%)	2,039,982 (88.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	3,066 (3.1%)	8,590 (3.6%)	3,396 (1.2%)	3,950 (1.2%)	7,081 (0.8%)	9,106 (1.8%)	35,189 (1.5%)
Rail/Subway ²	497 (0.5%)	1,216 (0.5%)	2,454 (0.9%)	2,703 (0.8%)	6,930 (0.8%)	4,058 (0.8%)	17,858 (0.8%)
Subtotal	3,563 (3.6%)	9,806 (4.1%)	5,850 (2.0%)	6,653 (2.0%)	14,011 (1.6%)	13,164 (2.7%)	53,047 (2.3%)
OTHER MEANS							
Amtrak	233 (0.2%)	2,156 (0.9%)	** (0.0%)	45 (0.0%)	2,653 (0.3%)	21 (0.0%)	5,108 (0.2%)
Walk	1,798 (1.8%)	1,591 (0.7%)	1,518 (0.5%)	1,251 (0.4%)	2,554 (0.3%)	2,705 (0.5%)	11,418 (0.5%)
Bike	347 (0.4%)	373 (0.1%)	357 (0.1%)	678 (0.2%)	1,127 (0.1%)	589 (0.1%)	3,471 (0.1%)
School Bus	2,111 (2.1%)	4,437 (1.8%)	5,087 (1.8%)	5,198 (1.5%)	9,723 (1.1%)	6,886 (1.4%)	33,442 (1.4%)
Airplane	** (0.0%)	20,614 (8.6%)	4,553 (1.6%)	20,504 (6.0%)	71,323 (8.3%)	27,901 (5.7%)	144,895 (6.3%)
Taxi	366 (0.4%)	137 (0.1%)	54 (0.0%)	259 (0.1%)	661 (0.1%)	293 (0.1%)	1,770 (0.1%)
Other	265 (0.3%)	413 (0.2%)	281 (0.1%)	615 (0.2%)	3,569 (0.4%)	16,057 (3.2%)	21,200 (0.9%)
Subtotal	5,120 (5.2%)	29,720 (12.4%)	11,850 (4.1%)	28,550 (8.4%)	91,610 (10.7%)	54,452 (11.0%)	221,303 (9.6%)
TOTAL³	98,927 (100%)	240,395 (100%)	286,722 (100%)	340,376 (100%)	856,002 (100%)	492,850 (100%)	2,315,273 (100%)

** Indicates no data reported.

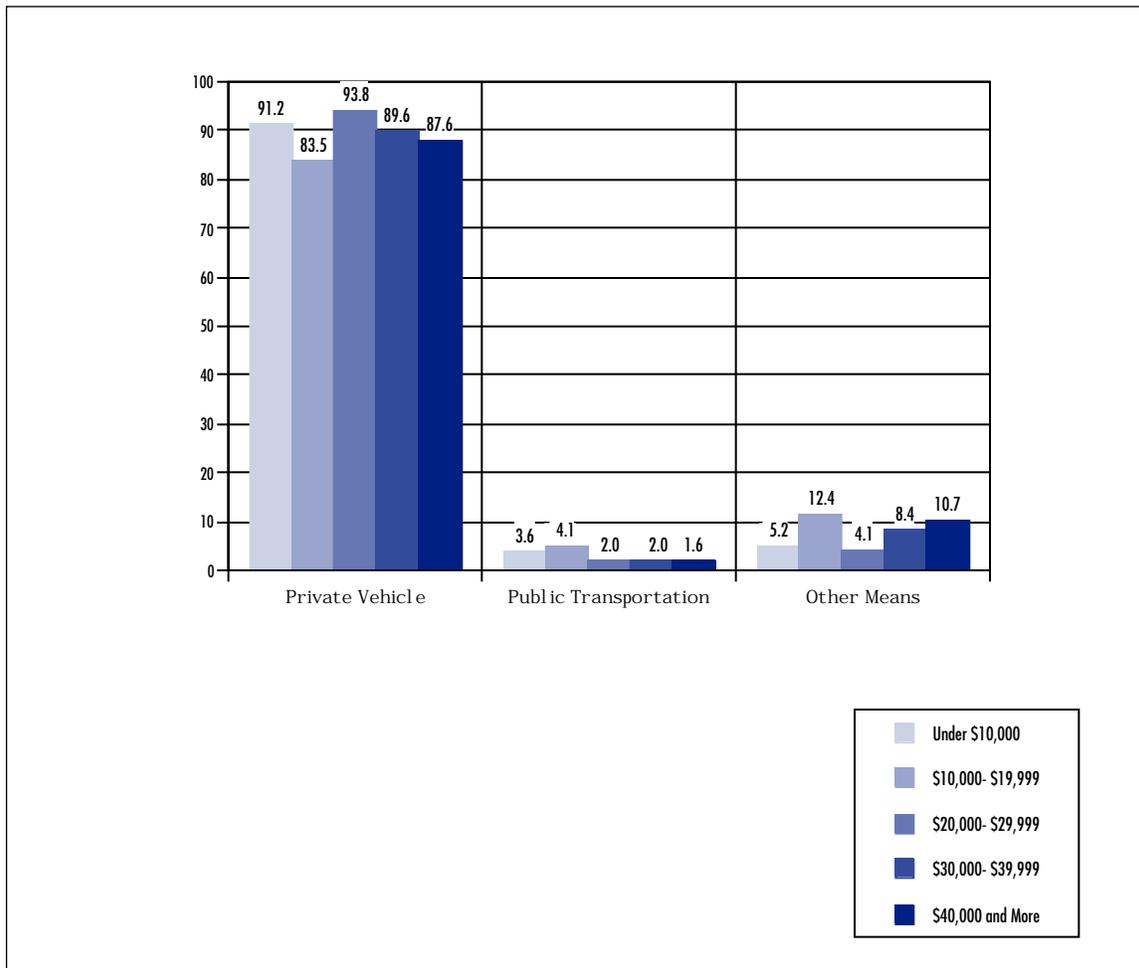
¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

³ Includes miles of travel where mode of transportation is unreported.

FIGURE 4.19

**DISTRIBUTION OF PERSON MILES OF TRAVEL BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS**



The following three tables present data on travel by households that did not own any vehicles. These households walked more than

five times as often as other households and used public transit almost ten times as often.

TABLE 4.36

NUMBER OF PERSON TRIPS TAKEN BY HOUSEHOLDS WITHOUT ANY VEHICLES
BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,999	\$40,000- and More	Unreported Income	TOTAL
PRIVATE VEHICLE	867	563	248	84	125	1,037	2,924
	(27.6%)	(28.8%)	(25.1%)	(17.0%)	(20.4%)	(36.7%)	(29.2%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	401	311	125	90	52	432	1,411
	(12.8%)	(15.9%)	(12.6%)	(18.3%)	(8.5%)	(15.3%)	(14.1%)
Rail/Subway ²	33	90	94	59	73	145	493
	(1.0%)	(4.6%)	(9.5%)	(11.9%)	(11.9%)	(5.1%)	(4.9%)
Subtotal	433	401	219	149	124	577	1,904
	(13.8%)	(20.5%)	(22.2%)	(30.2%)	(20.4%)	(20.4%)	(19.0%)
OTHER MEANS							
Amtrak	20	4	**	**	**	**	24
	(0.6%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.2%)
Bicycle	22	48	45	7	**	50	172
	(0.7%)	(2.4%)	(4.6%)	(1.3%)	(0.0%)	(1.8%)	(1.7%)
Walk	1,567	880	434	231	334	990	4,436
	(49.9%)	(45.0%)	(44.1%)	(46.9%)	(54.6%)	(35.0%)	(44.3%)
Taxi	68	8	32	19	24	87	238
	(2.2%)	(0.4%)	(3.2%)	(3.9%)	(4.0%)	(3.1%)	(2.4%)
Other	158	52	8	4	4	74	300
	(5.0%)	(2.6%)	(0.8%)	(0.7%)	(0.7%)	(2.6%)	(3.0%)
Subtotal	1,834	991	520	261	362	1,202	5,169
	(58.4%)	(50.7%)	(52.7%)	(52.8%)	(59.2%)	(42.5%)	(51.6%)
TOTAL³	3,140	1,956	985	494	611	2,826	10,012
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

** Indicates no data reported.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Includes trips where mode of transportation was unreported.

FIGURE 4.20

**PERSON TRIP COMPARISON BETWEEN HOUSEHOLDS WITHOUT ANY VEHICLES AND HOUSEHOLDS WITH VEHICLES BY MODE OF TRANSPORTATION
1990 NPTS**

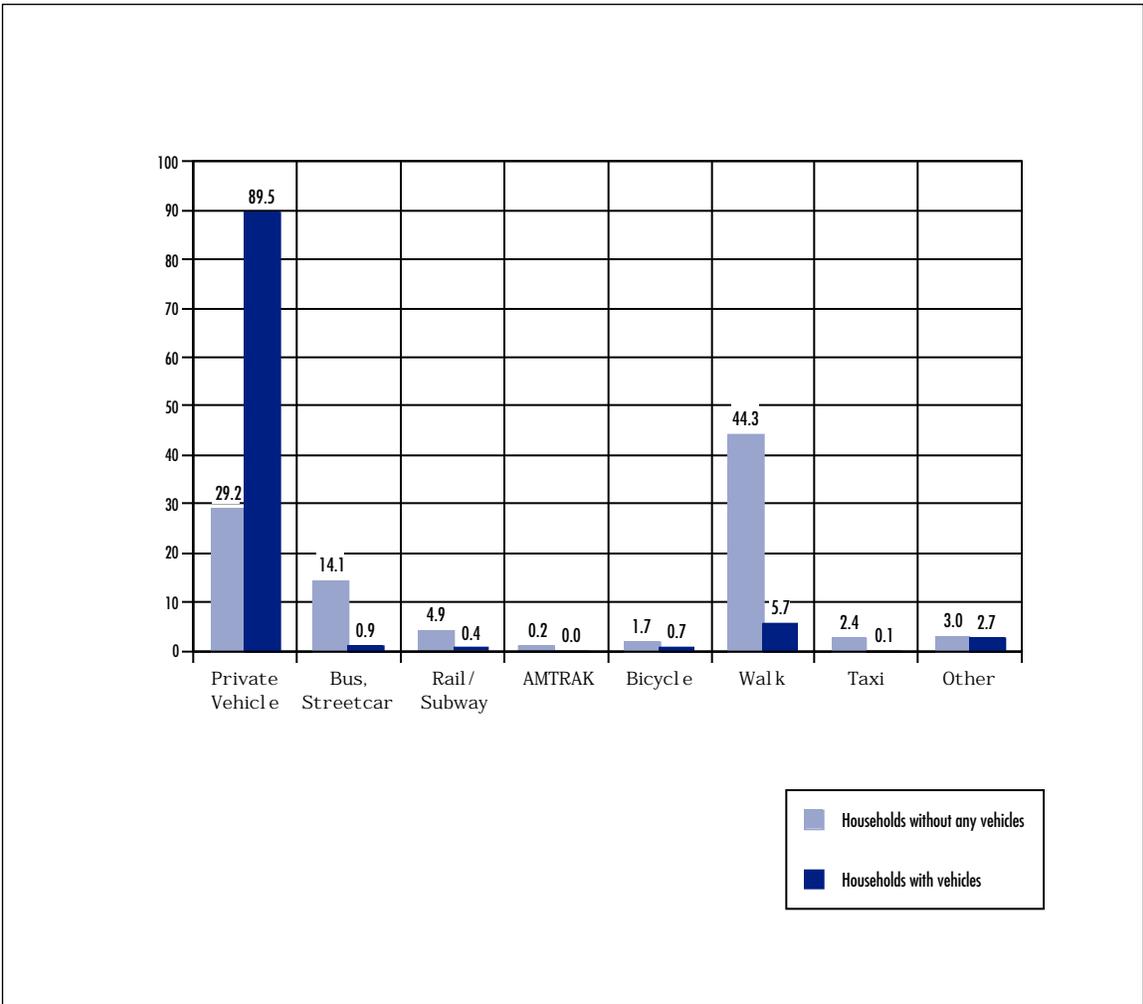


TABLE 4.37

**NUMBER OF PERSON TRIPS TAKEN BY HOUSEHOLDS WITHOUT ANY VEHICLES
BY HOUSEHOLD INCOME AND URBANIZED AREA SIZE
1990 NPTS
(THOUSANDS)**

URBANIZED AREA	Under \$10,000	\$10,000- \$19,999	\$20,000- \$29,999	\$30,000- \$39,999	\$40,000 and More	Unreported Income	TOTAL	Number of Households Without Vehicles
50,000 - 199,999	357,570 (11.4%)	168,647 (8.6%)	152,819 (15.5%)	7,100 (1.4%)	556 (0.1%)	304,964 (10.8%)	991,656 (9.9%)	834
200,000 - 499,999	174,415 (5.6%)	132,236 (6.8%)	17,734 (1.8%)	10,415 (2.1%)	** (0.0%)	175,751 (6.2%)	510,552 (5.1%)	534
500,000 - 999,999	190,795 (6.1%)	127,281 (6.5%)	23,100 (2.3%)	6,804 (1.4%)	1,036 (0.2%)	185,525 (6.6%)	534,540 (5.3%)	524
1,000,000 or more without rail/subway	326,329 (10.4%)	378,023 (19.3%)	155,877 (15.8%)	41,005 (8.3%)	17,282 (2.8%)	480,058 (17.0%)	1,398,574 (14.0%)	1,343
1,000,000 or more with rail/subway ¹	971,131 (30.9%)	716,339 (36.6%)	445,720 (45.2%)	364,315 (73.8%)	298,330 (48.8%)	1,139,207 (40.3%)	3,935,042 (39.3%)	2,719
Manhattan Area ²	71,562 (2.3%)	110,155 (5.6%)	121,618 (12.3%)	56,134 (11.4%)	242,129 (39.6%)	138,340 (4.9%)	739,938 (7.4%)	471
Not in Urbanized Area	1,047,761 (33.4%)	323,367 (16.5%)	68,566 (7.0%)	7,878 (1.6%)	51,946 (8.5%)	401,741 (14.2%)	1,901,259 (19.0%)	2,148
TOTAL	3,139,563 (100.0%)	1,956,048 (100.0%)	985,434 (100.0%)	493,651 (100.0%)	611,279 (100.0%)	2,825,586 (100.0%)	10,011,561 (100.0%)	8,573
NUMBER OF HOUSEHOLDS WITHOUT VEHICLES	2,800	1,517	525	301	317	3,113	8,573	

^{**} Indicates no data reported.

¹ Does not include the Manhattan area.

² Manhattan is singled out because it is the one area where significant number of higher income households choose not to own a vehicle. Manhattan refers to Manhattan only, not the NY metropolitan area.

Table 4.37 shows that among households that did not own any vehicles, those that lived in large urban areas with subway/elevated rail took almost 30% more trips per household than those that lived in large

urban areas without subway/elevated rail. Households without a vehicle that lived in non-urbanized areas took the least number of trips.

FIGURE 4.21

**PERSON TRIP COMPARISON BETWEEN HOUSEHOLDS WITHOUT ANY VEHICLES
AND HOUSEHOLDS WITH VEHICLES BY HOUSEHOLD INCOME
1990 NPTS
(WITHIN VEHICLE OWNERSHIP CATEGORY)**

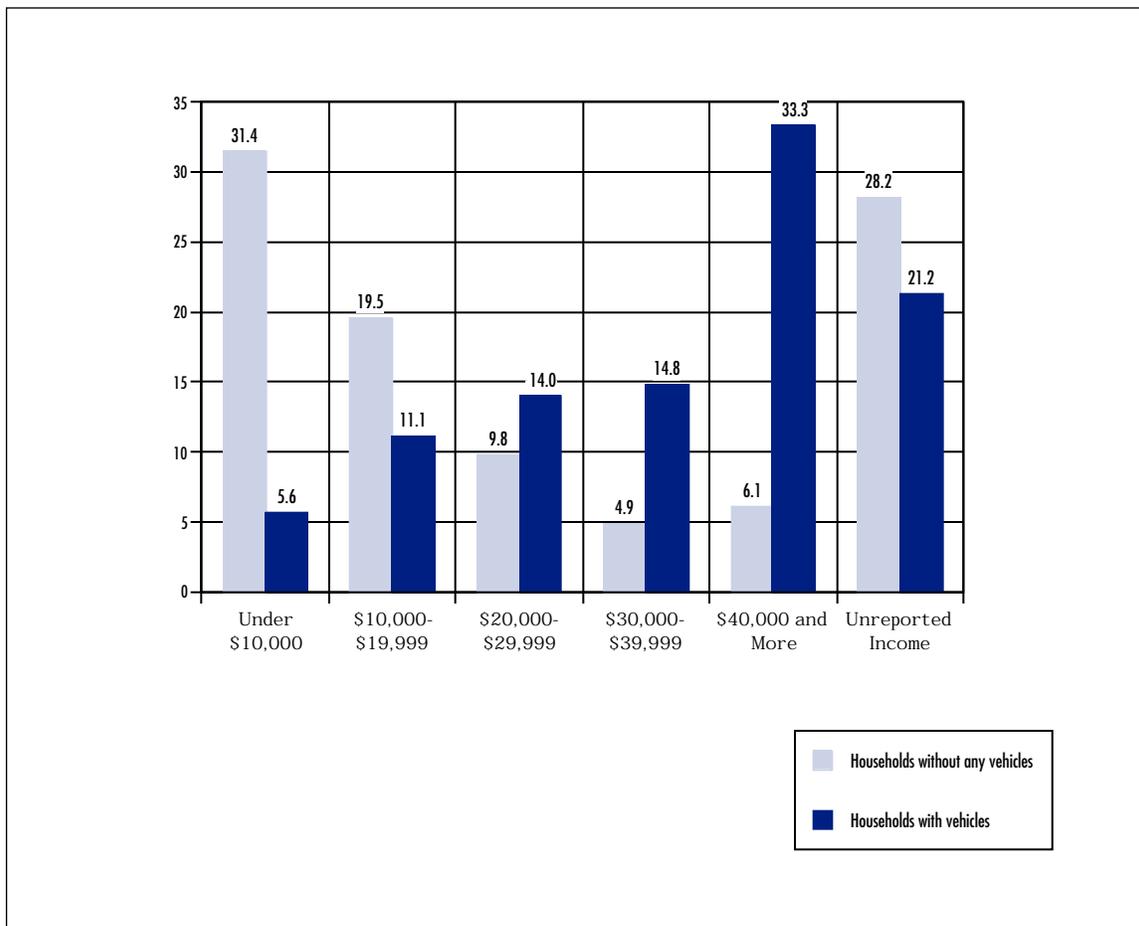


TABLE 4.38

NUMBER OF PERSON TRIPS TAKEN BY HOUSEHOLDS WITHOUT ANY VEHICLES
AND LOCATED WHERE PUBLIC TRANSPORTATION IS AVAILABLE¹
BY MODE OF TRANSPORTATION AND URBANIZED AREA SIZE
1990 NPTS (MILLIONS)

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

	50,000 - 199,999	200,000 - 499,999	500,000 - 999,999	1,000,000+ without rail/subway	1,000,000+ with rail/subway ³	Manhattan Area ⁴	Not in Urbanized Area	TOTAL
PRIVATE VEHICLE	299	213	225	442	687	112	233	2,211
	(35.0%)	(43.1%)	(48.6%)	(34.5%)	(18.3%)	(15.7%)	(22.7%)	(25.8%)
PUBLIC TRANSPORTATION								
Bus, Streetcar	123	57	76	278	673	97	43	1,346
	(14.4%)	(11.6%)	(16.4%)	(21.7%)	(17.9%)	(13.6%)	(4.1%)	(15.7%)
Rail/Subway ⁵	**	4	0	**	325	126	8	463
	(0.0%)	(0.8%)	(0.0%)	(0.0%)	(8.7%)	(17.7%)	(0.8%)	(5.4%)
Subtotal	123	61	76	278	998	222	51	1,809
	(14.4%)	(12.4%)	(16.4%)	(21.7%)	(26.6%)	(31.3%)	(5.0%)	(21.1%)
OTHER MEANS								
Amtrak	**	**	**	**	24	**	**	24
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.6%)	(0.0%)	(0.0%)	(0.3%)
Bicycle	35	7	12	14	28	12	39	147
	(4.1%)	(1.4%)	(2.6%)	(1.1%)	(0.7%)	(1.7%)	(3.8%)	(1.7%)
Walk	341	169	127	507	1,865	329	635	3,972
	(39.9%)	(34.2%)	(27.4%)	(39.6%)	(49.7%)	(46.3%)	(61.9%)	(46.3%)
Taxi	22	7	0	26	101	29	30	215
	(2.6%)	(1.3%)	(0.0%)	(2.0%)	(2.7%)	(4.1%)	(2.9%)	(2.5%)
Other	33	37	23	13	42	6	36	191
	(3.9%)	(7.6%)	(4.9%)	(1.0%)	(1.1%)	(0.9%)	(3.5%)	(2.2%)
Subtotal	431	220	162	560	2,060	376	740	4,549
	(50.5%)	(44.5%)	(34.9%)	(43.8%)	(54.8%)	(52.9%)	(72.1%)	(53.0%)
TOTAL⁶	854	493	463	1,280	3,755	710	1,027	8,583
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

** Indicates data not reported.

¹ The availability of public transportation applies only to the place of residence; therefore, people who report no public transportation available can still make non-home-based trips using public transportation.

² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Does not include the Manhattan area.

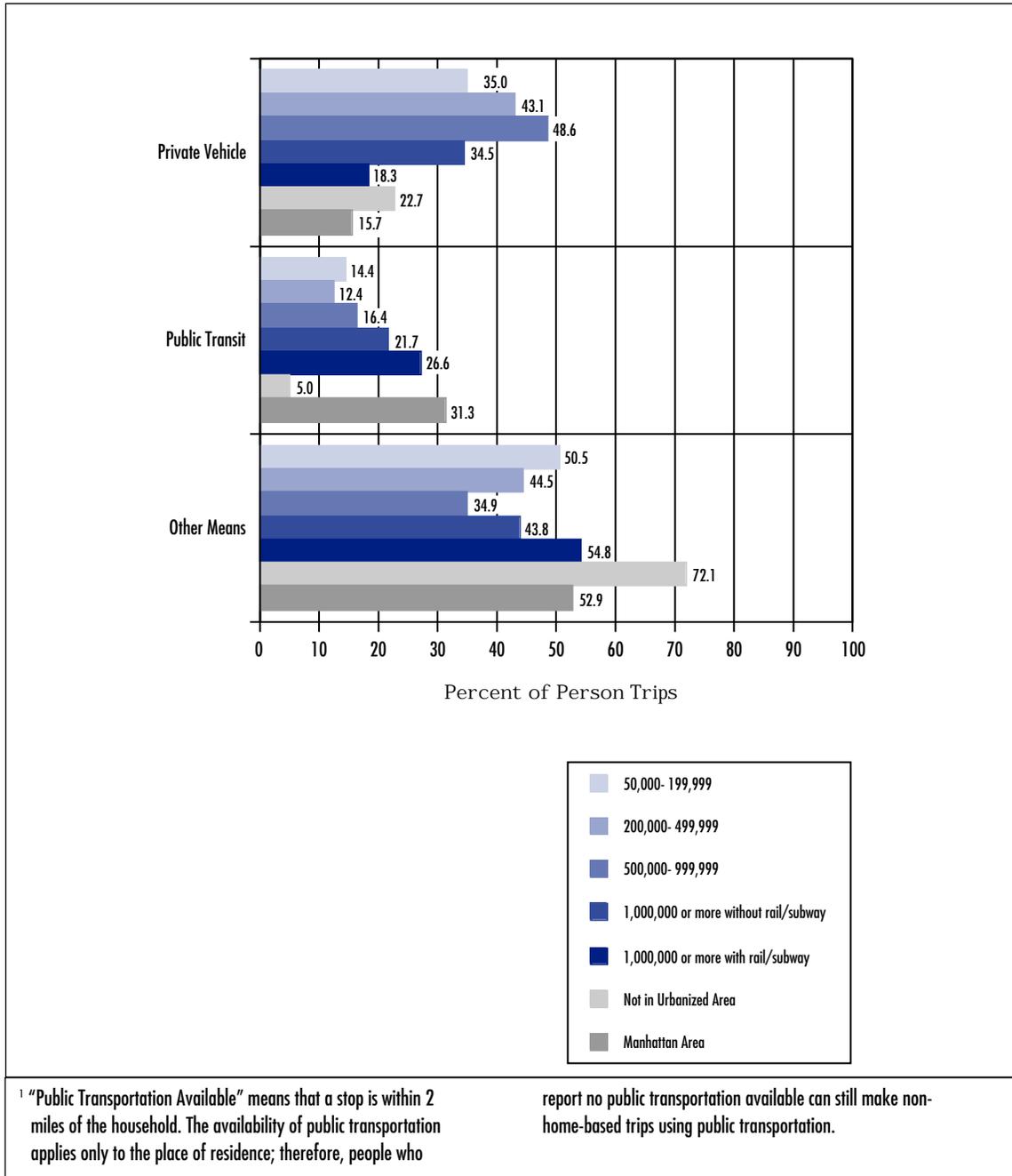
⁴ Manhattan is singled out because it is the one area where significant number of higher income households choose not to own a vehicle. Manhattan refers to Manhattan only, not the NY metropolitan area.

⁵ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁶ Includes some trips where mode of transportation was unreported.

FIGURE 4.22

DISTRIBUTION OF PERSON TRIPS BY MODE OF TRANSPORTATION AND URBANIZED AREA SIZE TAKEN BY HOUSEHOLDS WITHOUT ANY VEHICLES AND LOCATED WHERE PUBLIC TRANSPORTATION IS AVAILABLE¹ 1990 NPTS



HOUSEHOLD CHARACTERISTICS PERSON TRIPS AND PERSON MILES OF TRAVEL

TABLE 4.39

**NUMBER OF PERSON TRIPS BY MODE OF TRANSPORTATION AND TRIP PURPOSE
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

Mode	Earning a Living	Family & Personal Business	Civic, Educational & Religious	Social & Recreational	Other	TOTAL ²
PRIVATE VEHICLE						
Auto, Van—Driver	36,289 (67.4%)	63,044 (60.8%)	7,798 (27.5%)	28,136 (45.5%)	910 (49.7%)	136,212 (54.6%)
Auto, Van—Passenger	3,865 (7.2%)	21,630 (20.9%)	8,550 (30.1%)	18,828 (30.5%)	414 (22.6%)	53,314 (21.4%)
Pickup	8,244 (15.3%)	10,426 (10.1%)	1,144 (4.0%)	5,670 (9.2%)	143 (7.8%)	25,633 (10.3%)
Other Private Vehicle	637 (1.2%)	843 (0.8%)	54 (0.2%)	686 (1.1%)	14 (0.8%)	2,233 (0.9%)
Subtotal—Private	49,035 (91.1%)	95,943 (92.6%)	17,546 (61.8%)	53,320 (86.3%)	1,480 (80.8%)	217,392 (87.1%)
PUBLIC TRANSPORTATION						
Bus, Streetcar	1,228 (2.3%)	809 (0.8%)	942 (3.3%)	536 (0.9%)	29 (1.6%)	3,543 (1.4%)
Rail/Subway ³	856 (1.6%)	173 (0.2%)	134 (0.5%)	181 (0.3%)	3 (0.2%)	1,349 (0.5%)
Subtotal—Public	2,084 (3.9%)	983 (0.9%)	1,076 (3.8%)	717 (1.2%)	32 (1.7%)	4,892 (2.0%)
OTHER MEANS						
Amtrak	22 (0.0%)	26 (0.0%)	** (0.0%)	5 (0.0%)	2 (0.1%)	54 (0.0%)
Walk	2,153 (4.0%)	5,835 (5.6%)	3,650 (12.9%)	6,128 (9.9%)	241 (13.2%)	18,007 (7.2%)
Bike	174 (0.3%)	347 (0.3%)	249 (0.9%)	979 (1.6%)	17 (0.9%)	1,767 (0.7%)
School Bus	64 (0.1%)	155 (0.2%)	5,748 (20.2%)	104 (0.2%)	21 (1.1%)	6,092 (2.4%)
Airplane	52 (0.1%)	42 (0.0%)	6 (0.0%)	92 (0.1%)	11 (0.6%)	203 (0.1%)
Taxi	107 (0.2%)	133 (0.1%)	30 (0.1%)	152 (0.2%)	** (0.0%)	422 (0.2%)
Other	104 (0.2%)	97 (0.1%)	53 (0.2%)	257 (0.4%)	16 (0.9%)	527 (0.2%)
Subtotal—Other	2,676 (5.0%)	6,635 (6.4%)	9,735 (34.3%)	7,718 (12.5%)	307 (16.8%)	27,071 (10.8%)
TOTAL²	53,843 (100.0%)	103,608 (100.0%)	28,397 (100.0%)	61,799 (100.0%)	1,831 (100.0%)	249,562 (100.0%)
Avg. Trip Length (Miles)⁴	11.8	7.1	5.4	13.2	10.3	9.5

** Indicates no data reported.

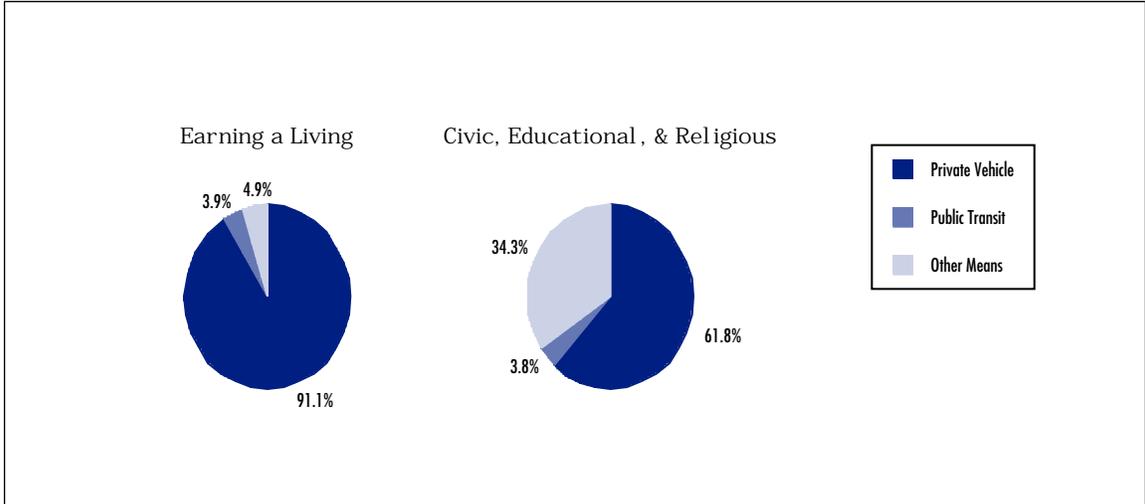
¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips where mode of transportation, trip purpose, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Information based only on observations with valid trip length data.

FIGURE 4.23
DISTRIBUTION OF PERSON TRIPS BY MODE OF TRANSPORTATION AND SELECTED TRIP PURPOSE
1990 NPTS



As expected, the majority of person trips were taken in privately owned vehicles. Only 1.7 percent of all trips were on public transportation. However, 3.9% of all trips for earning a living and 3.8% of trips for civic, education, and religious purposes used public transportation. In terms of trips across modes, over one third of trips to school,

church or civic functions were by other modes, which include school buses, walking and bicycling.

In terms of trips within mode, of all trips taken by privately owned vehicles, 44% were for family and personal purposes. Of all trips taken by public transportation, 43% were for earning a living.

TABLE 4.40

DISTRIBUTION OF PERSON TRIPS BY MODE OF TRANSPORTATION AND TRIP PURPOSE
1990 NPTS

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

Purpose	Private Transportation	Public Transportation	Other	TOTAL
ACROSS MODES				
Earning a Living	91.2%	3.9%	5.0%	100.0%
Family & Personal Business	92.6%	0.9%	6.4%	100.0%
Civic, Education, & Religious	61.9%	3.8%	34.3%	100.0%
Social & Recreational	86.3%	1.2%	12.5%	100.0%
Other	81.4%	1.7%	16.8%	100.0%
ALL PURPOSES	87.2%	2.0%	10.8%	100.0%
WITHIN MODES				
Earning a Living	22.6%	42.6%	9.9%	21.6%
Family & Personal Business	44.2%	20.1%	24.5%	41.5%
Civic, Education, & Religious	8.1%	22.0%	36.0%	11.4%
Social & Recreational	24.5%	14.7%	28.5%	24.8%
Other	0.7%	0.7%	1.1%	0.7%
TOTAL	100.0%	100.0%	100.0%	100.0%

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

FIGURE 4.24

**DISTRIBUTION OF PERSON TRIPS BY MODE OF TRANSPORTATION AND TRIP PURPOSE
(WITHIN MODE)
1990 NPTS**

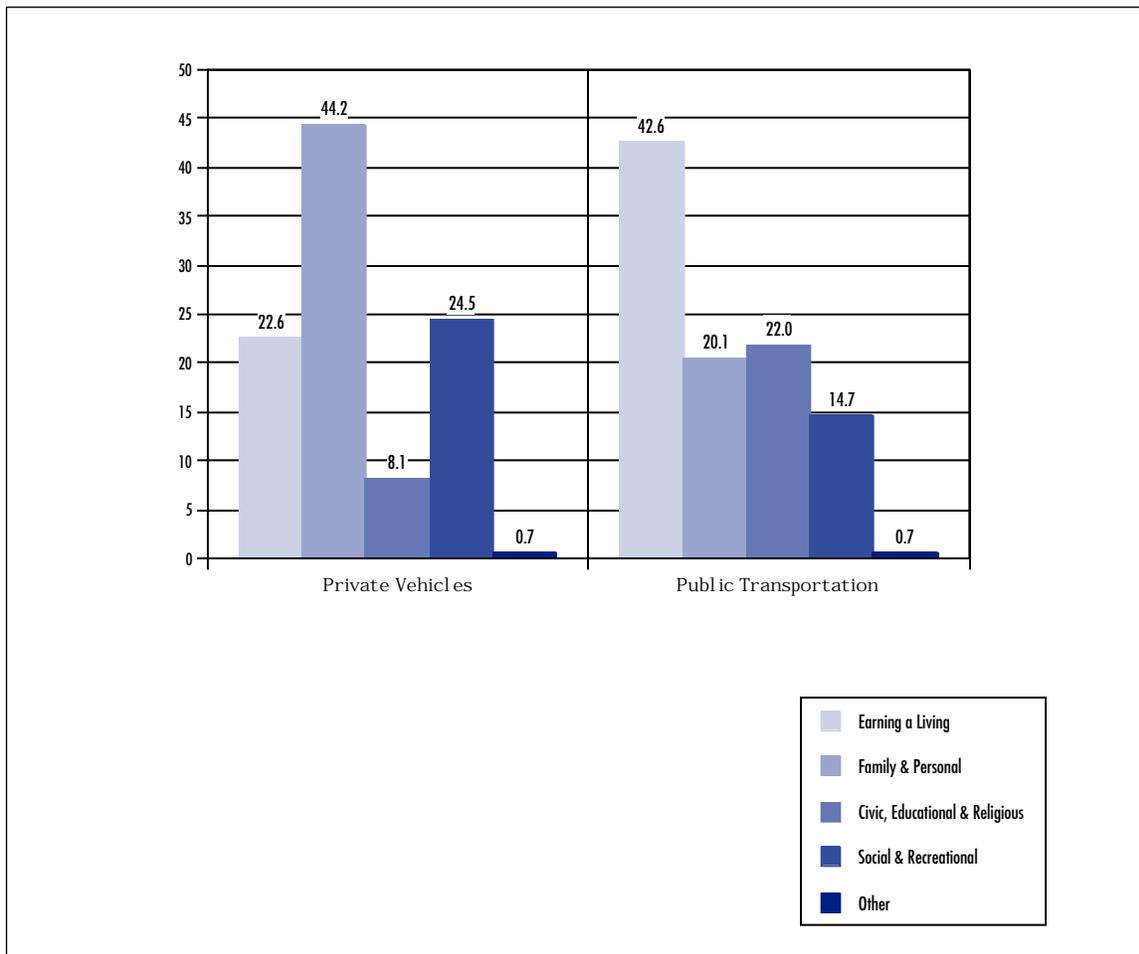


TABLE 4.41

STATISTICS OF PERSON TRIPS AND TRAVEL BY TRIP PURPOSE
1990 NPTS

	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ¹ (miles)
EARNING A LIVING			
To or From Work	50,314,271	526,155,669	10.65
	(20.2%)	(22.7%)	
Work-Related Business	3,528,663	97,379,907	28.20
	(1.4%)	(4.2%)	
Subtotal	53,842,934	623,535,576	11.80
	(21.6%)	(26.9%)	
FAMILY AND PERSONAL BUSINESS			
Shopping	47,056,740	249,620,633	5.38
	(18.9%)	(10.8%)	
Doctor/Dentist	2,799,748	28,313,659	10.59
	(1.1%)	(1.2%)	
Other Family or Personal Business	53,751,804	446,177,987	8.44
	(21.5%)	(19.3%)	
Subtotal	103,608,292	724,112,279	7.11
	(41.5%)	(31.3%)	
CIVIC, EDUCATIONAL AND RELIGIOUS			
Subtotal	28,397,077	149,271,747	5.39
	(11.4%)	(6.4%)	
SOCIAL AND RECREATIONAL			
Vacation	518,325	103,588,730	218.22
	(0.2%)	(4.5%)	
Visiting Friends/Relatives	24,265,233	279,056,307	11.73
	(9.7%)	(12.1%)	
Pleasure Driving	801,704	17,219,736	22.21
	(0.3%)	(0.7%)	
Other Social/Recreational	36,213,953	399,810,024	11.23
	(14.5%)	(17.3%)	
Subtotal	61,799,215	799,674,797	13.19
	(24.8%)	(34.6%)	
OTHER			
Subtotal	1,830,801	18,197,298	10.30
	(0.7%)	(0.8%)	
TOTAL²	249,562,297	2,315,273,365	9.45
	(100.0%)	(100.0%)	

¹ Average trip length is calculated using only those records with trip mile information present.

² Includes trips or miles of travel where trip purpose was unreported.

TABLE 4.42

STATISTICS OF SEGMENTED¹ PERSON TRIPS AND TRAVEL BY TRIP PURPOSE
1990 NPTS

	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ² (miles)
EARNING A LIVING			
To or From Work	1,034,307 (53.9%)	15,677,528 (69.4%)	17.12
Work-Related Business	38,131 (2.0%)	969,859 (4.3%)	25.98
Subtotal	1,072,438 (55.9%)	16,647,387 (73.7%)	17.47
FAMILY AND PERSONAL BUSINESS			
Shopping	143,793 (7.5%)	711,862 (3.2%)	6.59
Doctor/Dentist	30,510 (1.6%)	348,118 (1.5%)	12.56
Other Family or Personal Business	136,077 (7.1%)	1,209,782 (5.4%)	10.79
Subtotal	310,380 (16.2%)	2,269,762 (10.1%)	9.16
CIVIC, EDUCATIONAL AND RELIGIOUS			
Subtotal	292,038 (15.2%)	1,499,815 (6.6%)	6.05
SOCIAL AND RECREATIONAL			
Vacation	** (0.0%)	** (0.0%)	**
Visiting Friends/Relatives	142,503 (7.4%)	1,527,184 (6.8%)	12.89
Pleasure Driving	** (0.0%)	** (0.0%)	**
Other Social/Recreational	96,230 (5.0%)	605,305 (2.7%)	7.19
Subtotal	238,733 (12.4%)	2,132,489 (9.5%)	10.52
OTHER			
Subtotal	6,350 (0.3%)	24,829 (0.1%)	5.55
TOTAL³	1,919,939 (100.0%)	22,574,282 (100.0%)	13.63

** Indicates no data reported.

¹ See page 4-50 for explanation of segmented and non-segmented trips.

² Average trip length is calculated using only those records with trip mile information present.

³ Includes trips or miles of travel where trip purpose was unreported.

TABLE 4.43

STATISTICS OF NON-SEGMENTED¹ PERSON TRIPS AND TRAVEL BY TRIP PURPOSE
1990 NPTS

	Number of Person Trips (000)	Number of Person Miles (000)	Average Trip Length ² (miles)
EARNING A LIVING			
To or From Work	49,279,963 (19.9%)	510,478,140 (22.3%)	10.53
Work-Related Business	3,490,532 (1.4%)	96,410,048 (4.2%)	28.22
Subtotal	52,770,495 (21.3%)	606,888,188 (26.5%)	11.69
FAMILY AND PERSONAL BUSINESS			
Shopping	46,912,947 (18.9%)	248,908,770 (10.9%)	5.38
Doctor/Dentist	2,769,238 (1.1%)	27,965,540 (1.2%)	10.57
Other Family or Personal Business	53,615,728 (21.7%)	444,968,205 (19.4%)	8.44
Subtotal	103,297,913 (41.7%)	721,842,515 (31.5%)	7.10
CIVIC, EDUCATIONAL AND RELIGIOUS			
Subtotal	28,105,039 (11.3%)	147,771,932 (6.4%)	5.38
SOCIAL AND RECREATIONAL			
Vacation	518,325 (0.2%)	103,588,730 (4.5%)	218.22
Visiting Friends/Relatives	24,122,730 (9.7%)	277,529,123 (12.1%)	11.73
Pleasure Driving	801,704 (0.3%)	17,219,736 (0.8%)	22.21
Other Social/Recreational	36,117,723 (14.6%)	399,204,719 (17.4%)	11.24
Subtotal	61,560,482 (24.9%)	797,542,308 (34.8%)	13.20
OTHER			
Subtotal	1,824,451 (0.7%)	18,172,469 (0.8%)	10.31
TOTAL³	247,642,358 (100.0%)	2,292,699,082 (100.0%)	9.43

¹ See page 4-50 for explanation of segmented and non-segmented trips.³ Includes trips or miles of travel where trip purpose was unreported.² Average trip length is calculated using only those records with trip mile information present.

TABLE 4.44

**NUMBER OF PERSON MILES OF TRAVEL BY MODE OF TRANSPORTATION AND TRIP PURPOSE
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

Mode	Earning a Living	Family & Personal Business	Civic, Educational & Religious	Social & Recreational	Other	TOTAL ²
PRIVATE VEHICLE						
Auto, Van—Driver	390,512 (62.6%)	393,349 (54.3%)	57,160 (38.3%)	321,045 (40.1%)	9,828 (54.0%)	1,172,029 (50.6%)
Auto, Van—Passenger	44,160 (7.1%)	196,326 (27.1%)	42,209 (28.3%)	276,552 (34.6%)	5,722 (31.4%)	565,042 (24.4%)
Pickup	102,568 (16.4%)	83,720 (11.6%)	7,076 (4.7%)	72,753 (9.1%)	1,556 (8.6%)	267,944 (11.6%)
Other Private Vehicle	12,738 (2.1%)	9,099 (1.3%)	288 (0.2%)	12,725 (1.6%)	116 (0.6%)	34,967 (1.5%)
Subtotal—Private	549,978 (88.2%)	682,493 (94.3%)	106,734 (71.5%)	683,075 (85.4%)	17,221 (94.6%)	2,039,982 (88.1%)
PUBLIC TRANSPORTATION						
Bus, Streetcar	10,721 (1.7%)	7,087 (1.0%)	8,851 (5.9%)	7,933 (1.0%)	597 (3.3%)	35,189 (1.5%)
Rail/Subway ³	12,172 (2.0%)	1,306 (0.2%)	1,086 (0.7%)	3,292 (0.4%)	2 (0.0%)	17,858 (0.8%)
Subtotal—Public	22,893 (3.7%)	8,393 (1.2%)	9,937 (6.7%)	11,225 (1.4%)	599 (3.3%)	53,047 (2.3%)
OTHER MEANS						
Amtrak	1,839 (0.3%)	724 (0.1%)	** (0.0%)	2,546 (0.3%)	** (0.0%)	5,108 (0.2%)
Walk	1,743 (0.3%)	3,164 (0.4%)	2,057 (1.4%)	4,205 (0.5%)	249 (1.4%)	11,418 (0.5%)
Bike	356 (0.0%)	527 (0.1%)	226 (0.2%)	2,324 (0.3%)	38 (0.2%)	3,471 (0.1%)
School Bus	563 (0.1%)	802 (0.1%)	29,766 (19.9%)	2,229 (0.3%)	83 (0.5%)	33,442 (1.4%)
Airplane	43,534 (7.0%)	25,116 (3.5%)	** (0.0%)	76,245 (9.5%)	** (0.0%)	144,895 (6.3%)
Taxi	375 (0.1%)	488 (0.1%)	196 (0.1%)	711 (0.1%)	** (0.0%)	1,770 (0.1%)
Other	1,890 (0.3%)	2,334 (0.3%)	181 (0.1%)	16,787 (2.1%)	7 (0.0%)	21,200 (0.9%)
Subtotal—Other	50,300 (8.1%)	33,154 (4.6%)	32,425 (21.7%)	105,047 (13.1%)	377 (2.1%)	221,304 (9.6%)
TOTAL²	623,536 (100.0%)	724,112 (100.0%)	149,272 (100.0%)	799,675 (100.0%)	18,197 (100.0%)	2,315,273 (100.0%)
Avg. Trip Length (Miles)⁴	11.8	7.1	5.4	13.2	10.3	9.5

** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes miles of travel where mode of transportation, trip purpose, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Average trip length is calculated using only those records with trip mile information present.

TABLE 4.45

**NUMBER OF PERSON TRIPS¹ BY MODE OF TRANSPORTATION AND TRIP PURPOSE
AND AVAILABILITY OF PUBLIC TRANSPORTATION
1990 NPTS (THOUSANDS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

Mode	Earning a Living	Family & Personal Business	Civic, Educational & Religious	Social & Recreational	Other	TOTAL ³
Where Public Transportation is Available						
Private	27,679,038 (87.4%)	53,710,873 (89.7%)	9,357,772 (59.1%)	30,628,414 (83.4%)	886,601 (76.2%)	122,308,391 (84.2%)
Public	1,956,429 (6.2%)	949,925 (1.6%)	842,434 (5.3%)	673,155 (1.8%)	31,829 (2.7%)	4,454,889 (3.1%)
Other	1,986,497 (6.3%)	5,197,841 (8.7%)	5,629,329 (35.5%)	5,394,212 (14.7%)	238,991 (20.6%)	18,446,870 (12.7%)
TOTAL³	31,653,116 (100.0%)	59,889,701 (100.0%)	15,846,647 (100.0%)	36,718,891 (100.0%)	1,162,944 (100.0%)	145,324,821 (100.0%)
Average Trip Length (miles)⁴	11.2	6.0	4.7	11.9	11.5	8.5
Where Public Transportation is NOT Available						
Private	20,731,913 (96.2%)	41,076,056 (96.5%)	8,041,388 (65.2%)	21,897,970 (90.3%)	588,368 (88.8%)	92,360,009 (91.1%)
Public	121,699 (0.6%)	32,820 (0.1%)	233,537 (1.9%)	43,702 (0.2%)	** (0.0%)	431,757 (0.4%)
Other	678,785 (3.2%)	1,420,471 (3.3%)	4,035,457 (32.7%)	2,277,707 (9.4%)	68,354 (10.3%)	8,480,976 (8.4%)
TOTAL³	21,543,439 (100.0%)	42,544,187 (100.0%)	12,334,511 (100.0%)	24,240,976 (100.0%)	662,343 (100.0%)	101,355,913 (100.0%)
Average Trip Length (miles)⁴	12.6	8.6	6.3	15.0	8.3	10.7
¹ Data on the availability of public transportation were missing for approximately 2.88 million person trips.			³ Includes trips where mode of transportation, trip purpose, or both were unreported.			
² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.			⁴ Average trip length is calculated using only those records with trip mile information present.			

AVAILABILITY of public transportation means that there is a stop or station for bus, subway, elevated rail, commuter rail or streetcar within 2 miles of the respondent's residence. Where public transportation was available, trip lengths were shorter than those in places without public transportation (Table 4.45). This difference was apparent across all major trip purposes. This pattern probably indicates that building and population density are more concentrated in places with public trans-

portation than those without public transportation. Note that people who reported that public transportation is not available to them at their residence can still make trips using public transportation. The availability of public transportation applies only to the place of residence, so that non-home-based trips could very well be made using public transportation.

Almost three-fourths of all public transit trips were made by people living within 1/4 mile of the nearest transit stop. As expected,

the percentage of trips by privately owned vehicles increased as the distance to the nearest public transportation increased.

TABLE 4.46

**NUMBER OF PERSON TRIPS¹ BY MODE OF TRANSPORTATION AND DISTANCE TO THE NEAREST PUBLIC TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT² IN CHAPTER 1, SECTION 5

Mode	Distance to Nearest Public Transportation					TOTAL ³
	Less than 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile	1 to 2 miles	2 or more miles	
Private	65,910 (81.0%)	24,793 (86.6%)	10,936 (88.1%)	8,412 (91.1%)	9,401 (90.0%)	119,453 (84.0%)
Public	3,311 (4.1%)	729 (2.5%)	217 (1.8%)	104 (1.1%)	85 (0.8%)	4,447 (3.1%)
Other	12,190 (15.0%)	3,104 (10.8%)	1,266 (10.2%)	719 (7.8%)	956 (9.2%)	18,236 (12.8%)
TOTAL³	81,412 (100.0%)	28,626 (100.0%)	12,419 (100.0%)	9,235 (100.0%)	10,443 (100.0%)	142,135 (100.0%)
All Modes	57.3%	20.1%	8.7%	6.5%	7.3%	100.0%

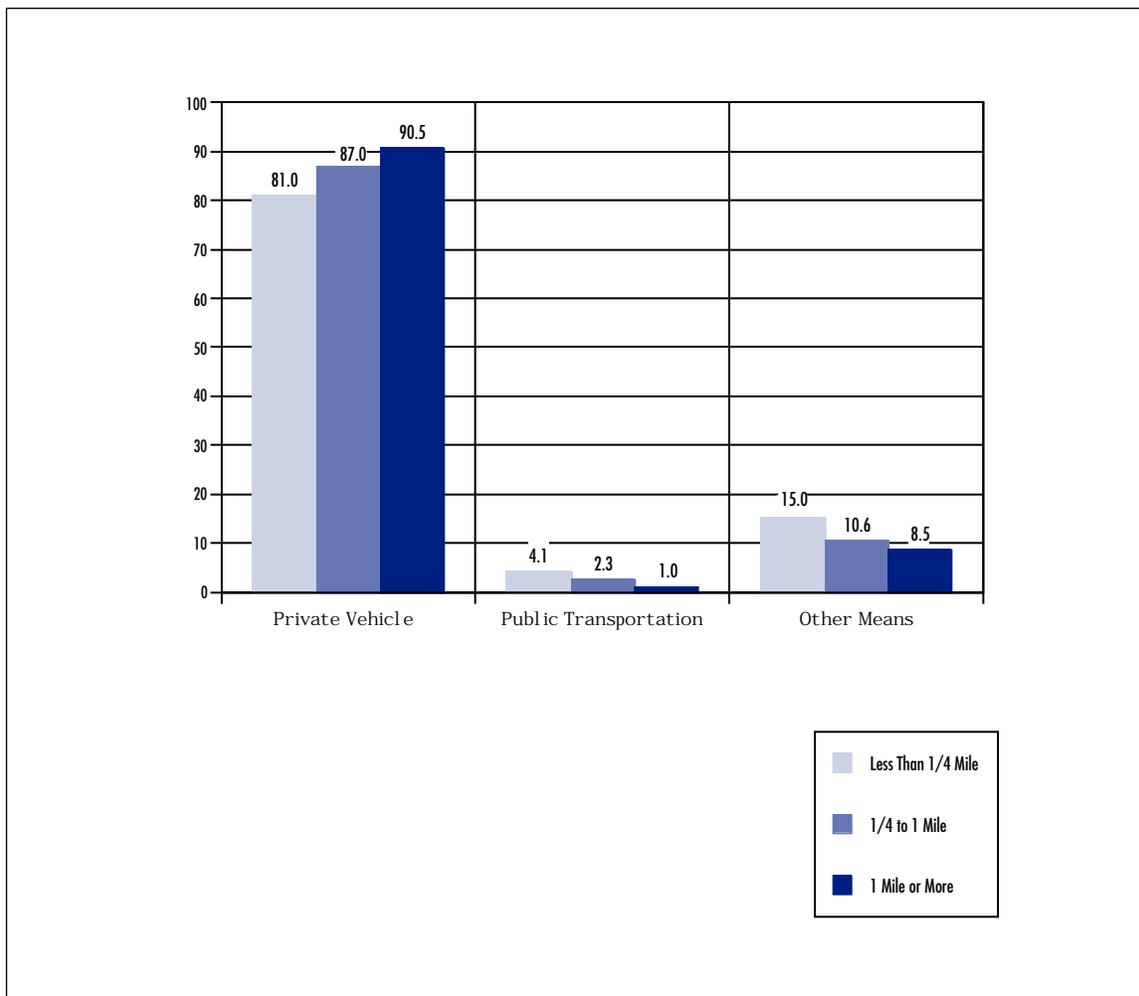
¹ Only includes trips that were taken by persons living in places where public transportation was available.

³ Does not include trips where mode of transportation or distance to the nearest public transportation was unreported.

² Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

FIGURE 4.25

**DISTRIBUTION OF PERSON TRIPS BY MODE OF TRANSPORTATION AND DISTANCE TO THE NEAREST PUBLIC TRANSPORTATION
1990 NPTS**



THE following six tables present data on personal travel by travel time. More than 70% of the person trips were less than 20 minutes long, and only 4.5% were more than 50 minutes long (Table 4.48). Almost half of the shorter trips (20 miles or less) were for family and personal business, while most of the trips lasting 50 minutes or longer were for social and recreational purposes (Table 4.47). Although trips of more than 50 minutes long accounted for less than 5% of the total person trips, they amounted to more than 35% of the total person miles of travel (Table 4.49), reflecting the longer distance of trips more than 50 minutes long.

For trips less than 30 minutes (Table 4.51), private vehicle was the most common mode, followed by walking. As expected, trips on public transportation tended to take longer than those by other modes. Trips by public transportation comprised 2% of all person trips, but accounted for 10.4% of all trips taking 50 minutes or more. Likewise, in other long trips (more than 50 minutes long), airplane trips accounted for only 1.6% of the total long trips but accounted for more than 16% of the total person miles of travel in long trips (Table 4.52).

TABLE 4.47

**NUMBER OF PERSON TRIPS BY TRAVEL TIME CATEGORY AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

	Travel Time						TOTAL ¹
	0 - 9 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 49 Min.	50+ Min.	
EARNING A LIVING							
To or From Work	12,787 (13.5%)	16,462 (20.4%)	8,996 (28.9%)	5,445 (30.0%)	2,960 (34.5%)	2,923 (26.1%)	50,314 (20.2%)
Work-Related Business	1,292 (1.4%)	960 (1.2%)	427 (1.4%)	232 (1.3%)	154 (1.8%)	395 (3.5%)	3,529 (1.4%)
Subtotal	14,079 (14.9%)	17,422 (21.6%)	9,423 (30.2%)	5,677 (31.3%)	3,114 (36.3%)	3,318 (29.7%)	53,843 (21.6%)
FAMILY AND PERSONAL BUSINESS							
Shopping	22,929 (24.3%)	15,140 (18.7%)	4,231 (13.6%)	2,093 (11.5%)	818 (9.5%)	738 (6.6%)	47,057 (18.9%)
Doctor/Dentist	565 (0.6%)	1,004 (1.2%)	524 (1.7%)	324 (1.8%)	158 (1.8%)	124 (1.1%)	2,800 (1.1%)
Other Family or Personal Business	24,234 (25.7%)	17,046 (21.1%)	5,421 (17.4%)	2,969 (16.3%)	1,273 (14.8%)	1,904 (17.0%)	53,752 (21.5%)
Subtotal	47,728 (50.6%)	33,190 (41.1%)	10,176 (32.7%)	5,386 (29.7%)	2,249 (26.2%)	2,766 (24.7%)	103,609 (41.5%)
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	10,203 (10.8%)	9,946 (12.3%)	3,620 (11.6%)	2,017 (11.1%)	878 (10.2%)	708 (6.3%)	28,397 (11.4%)
SOCIAL AND RECREATIONAL							
Vacation	43 (0.0%)	42 (0.1%)	34 (0.1%)	33 (0.2%)	23 (0.3%)	281 (2.5%)	518 (0.2%)
Visiting Friends/Relatives	9,046 (9.6%)	7,308 (9.0%)	3,150 (10.1%)	1,895 (10.4%)	818 (9.5%)	1,519 (13.6%)	24,265 (9.7%)
Pleasure Driving	79 (0.1%)	170 (0.2%)	97 (0.3%)	135 (0.7%)	66 (0.8%)	206 (1.8%)	802 (0.3%)
Other Social/Recreational	12,499 (13.3%)	12,065 (14.9%)	4,432 (14.2%)	2,902 (16.0%)	1,379 (16.1%)	2,262 (20.2%)	36,214 (14.5%)
Subtotal	21,667 (23.0%)	19,585 (24.2%)	7,713 (24.8%)	4,965 (27.3%)	2,286 (26.6%)	4,268 (38.2%)	61,799 (24.8%)
OTHER							
Subtotal	624 (0.7%)	623 (0.8%)	220 (0.7%)	109 (0.6%)	59 (0.7%)	120 (1.1%)	1,831 (0.7%)
TOTAL¹	94,321 (100.0%)	80,777 (100.0%)	31,154 (100.0%)	18,159 (100.0%)	8,588 (100.0%)	11,186 (100.0%)	249,562 (100.0%)

¹ Includes trips where travel time, trip purpose, or both were unreported.

TABLE 4.48

**DISTRIBUTION OF PERSON TRIPS BY TRAVEL TIME CATEGORY AND TRIP PURPOSE
1990 NPTS
(ACROSS TRAVEL TIME)**

	Travel Time						TOTAL ¹
	0 - 9 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 49 Min.	50+ Min.	
EARNING A LIVING							
To or From Work	25.4%	32.7%	17.9%	10.8%	5.9%	5.8%	100.0%
Work-Related Business	36.6%	27.2%	12.1%	6.6%	4.4%	11.2%	100.0%
Subtotal	26.1%	32.4%	17.5%	10.5%	5.8%	6.2%	100.0%
FAMILY AND PERSONAL BUSINESS							
Shopping	48.7%	32.2%	9.0%	4.4%	1.7%	1.6%	100.0%
Doctor/Dentist	20.2%	35.9%	18.7%	11.6%	5.6%	4.4%	100.0%
Other Family or Personal Business	45.1%	31.7%	10.1%	5.5%	2.4%	3.5%	100.0%
Subtotal	46.1%	32.0%	9.8%	5.2%	2.2%	2.7%	100.0%
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	35.9%	35.0%	12.7%	7.1%	3.1%	2.5%	100.0%
SOCIAL AND RECREATIONAL							
Vacation	8.3%	8.1%	6.6%	6.4%	4.4%	54.2%	100.0%
Visiting Friends/Relatives	37.3%	30.1%	13.0%	7.8%	3.4%	6.3%	100.0%
Pleasure Driving	9.9%	21.2%	12.1%	16.8%	8.2%	25.7%	100.0%
Other Social/Recreational	34.5%	33.3%	12.2%	8.0%	3.8%	6.2%	100.0%
Subtotal	35.1%	31.7%	12.5%	8.0%	3.7%	6.9%	100.0%
OTHER							
Subtotal	34.1%	34.0%	12.0%	6.0%	3.2%	6.6%	100.0%
TOTAL¹	37.8%	32.4%	12.5%	7.3%	3.4%	4.5%	100.0%

¹ Includes trips where travel time, trip purpose, or both were unreported.

TABLE 4.49

**DISTRIBUTION OF PERSON MILES OF TRAVEL BY TRAVEL TIME CATEGORY AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

	Travel Time						TOTAL ¹
	0 - 9 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 49 Min.	50+ Min.	
EARNING A LIVING							
To or From Work	25,146 (15.9%)	98,776 (23.3%)	105,490 (30.9%)	95,153 (32.1%)	72,289 (35.4%)	118,848 (14.5%)	526,156 (22.7%)
Work-Related Business	2,323 (1.5%)	5,423 (1.3%)	4,909 (1.4%)	4,309 (1.4%)	4,302 (2.1%)	68,017 (8.3%)	97,380 (4.2%)
Subtotal	27,469 (17.4%)	104,199 (24.6%)	110,399 (32.3%)	99,462 (33.5%)	76,591 (37.5%)	186,865 (22.9%)	623,536 (26.9%)
FAMILY AND PERSONAL BUSINESS							
Shopping	35,844 (22.6%)	72,241 (17.2%)	44,232 (12.9%)	33,364 (11.2%)	21,235 (10.4%)	36,719 (4.5%)	249,621 (10.8%)
Doctor/Dentist	1,145 (0.7%)	5,713 (1.3%)	5,643 (1.7%)	5,338 (1.8%)	4,373 (2.1%)	5,561 (0.7%)	28,314 (1.2%)
Other Family or Personal Business	40,490 (25.6%)	89,600 (21.1%)	61,446 (18.0%)	50,966 (17.2%)	32,995 (16.1%)	163,860 (20.0%)	446,178 (19.3%)
Subtotal	77,479 (49.0%)	168,054 (39.6%)	111,321 (32.6%)	89,668 (30.2%)	58,603 (28.7%)	206,140 (25.2%)	724,113 (31.3%)
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	16,071 (10.2%)	41,497 (9.8%)	29,321 (8.6%)	20,527 (6.9%)	12,726 (6.2%)	24,161 (3.0%)	149,272 (6.4%)
SOCIAL AND RECREATIONAL							
Vacation	113 (0.1%)	331 (0.1%)	447 (0.1%)	659 (0.2%)	2,119 (1.0%)	81,063 (9.9%)	103,589 (4.5%)
Visiting Friends/Relatives	14,127 (8.9%)	41,153 (9.7%)	36,698 (10.7%)	35,911 (12.1%)	19,313 (9.4%)	124,486 (15.2%)	279,056 (12.0%)
Pleasure Driving	204 (0.1%)	948 (0.2%)	1,216 (0.4%)	2,244 (0.8%)	1,544 (0.8%)	10,009 (1.2%)	17,220 (0.7%)
Other Social/Recreational	21,642 (13.7%)	64,733 (15.3%)	49,968 (14.6%)	46,578 (15.7%)	32,604 (15.9%)	175,556 (21.5%)	399,810 (17.3%)
Subtotal	36,086 (22.8%)	107,165 (25.3%)	88,329 (25.8%)	85,392 (28.8%)	55,580 (27.2%)	391,114 (47.8%)	799,675 (34.5%)
OTHER							
Subtotal	1,133 (0.7%)	3,100 (0.7%)	2,477 (0.7%)	1,368 (0.5%)	965 (0.5%)	8,985 (1.1%)	18,197 (0.8%)
TOTAL¹	158,281 (100.0%)	424,082 (100.0%)	341,861 (100.0%)	296,492 (100.0%)	204,484 (100.0%)	817,527 (100.0%)	2,315,273 (100.0%)

¹ Includes miles of travel where travel time, trip purpose, or both were unreported.

TABLE 4.50

**DISTRIBUTION OF PERSON MILES OF TRAVEL BY TRAVEL TIME CATEGORY AND TRIP PURPOSE
1990 NPTS
(ACROSS TRAVEL TIME)**

	Travel Time						TOTAL ¹
	0 - 9 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 49 Min.	50+ Min.	
EARNING A LIVING							
To or From Work	4.8%	18.8%	20.0%	18.1%	13.7%	22.6%	100.0%
Work-Related Business	2.4%	5.6%	5.0%	4.4%	4.4%	69.8%	100.0%
Subtotal	4.4%	16.7%	17.7%	16.0%	12.3%	30.0%	100.0%
FAMILY AND PERSONAL BUSINESS							
Shopping	14.4%	28.9%	17.7%	13.4%	8.5%	14.7%	100.0%
Doctor/Dentist	4.0%	20.2%	19.9%	18.9%	15.4%	19.6%	100.0%
Other Family or Personal Business	9.1%	20.1%	13.8%	11.4%	7.4%	36.7%	100.0%
Subtotal	10.7%	23.2%	15.4%	12.4%	8.1%	28.5%	100.0%
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	10.8%	27.8%	19.6%	13.8%	8.5%	16.2%	100.0%
SOCIAL AND RECREATIONAL							
Vacation	0.1%	0.3%	0.4%	0.6%	2.0%	78.3%	100.0%
Visiting Friends/Relatives	5.1%	14.7%	13.2%	12.9%	6.9%	44.6%	100.0%
Pleasure Driving	1.2%	5.5%	7.1%	13.0%	9.0%	58.1%	100.0%
Other Social/Recreational	5.4%	16.2%	12.5%	11.7%	8.2%	43.9%	100.0%
Subtotal	4.5%	13.4%	11.0%	10.7%	7.0%	48.9%	100.0%
OTHER							
Subtotal	6.2%	17.0%	13.6%	7.5%	5.3%	49.4%	100.0%
TOTAL¹	6.8%	18.3%	14.8%	12.8%	8.8%	35.3%	100.0%

¹ Includes miles of travel where travel time, trip purpose, or both were unreported.

TABLE 4.51

**NUMBER OF PERSON TRIPS BY TRAVEL TIME CATEGORY AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Travel Time						TOTAL ²
	0 - 9 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 49 Min.	50+ Min.	
PRIVATE VEHICLE	82,552	72,275	27,568	15,340	7,177	9,091	217,393
	(87.5%)	(89.5%)	(88.5%)	(84.5%)	(83.6%)	(81.3%)	(87.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	296	785	710	588	325	668	3,543
	(0.3%)	(1.0%)	(2.3%)	(3.2%)	(3.8%)	(6.0%)	(1.4%)
Rail/Subway ³	29	123	168	241	234	498	1,349
	(0.0%)	(0.2%)	(0.5%)	(1.3%)	(2.7%)	(4.5%)	(0.5%)
Subtotal	325	908	878	829	559	1,166	4,892
	(0.3%)	(1.1%)	(2.8%)	(4.6%)	(6.5%)	(10.4%)	(2.0%)
OTHER MEANS							
Amtrak	4	6	2	17	1	23	54
	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.2%)	(0.0%)
Bike	879	445	146	140	55	42	1,767
	(0.9%)	(0.5%)	(0.5%)	(0.8%)	(0.6%)	(0.4%)	(0.7%)
Walk	9,672	4,754	1,243	833	254	248	18,007
	(10.3%)	(5.9%)	(4.0%)	(4.6%)	(3.0%)	(2.2%)	(7.2%)
School Bus	616	2,077	1,206	925	477	304	6,092
	(0.7%)	(2.6%)	(3.9%)	(5.1%)	(5.6%)	(2.7%)	(2.4%)
Airplane	**	**	1	4	9	176	203
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(1.6%)	(0.1%)
Other	244	301	102	54	54	129	949
	(0.2%)	(0.4%)	(0.3%)	(0.3%)	(0.6%)	(1.1%)	(0.4%)
Subtotal	11,415	7,583	2,700	1,973	850	922	27,072
	(12.1%)	(9.4%)	(8.7%)	(10.9%)	(9.9%)	(8.2%)	(10.8%)
TOTAL²	94,321	80,777	31,154	18,159	8,588	11,186	249,562
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips where travel time, mode of transportation, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

TABLE 4.52

**NUMBER OF PERSON MILES OF TRAVEL BY TRAVEL TIME CATEGORY AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Travel Time						TOTAL ²
	0-9 Min.	10-19 Min.	20-29 Min.	30-39 Min.	40-49 Min.	50+ Min.	
PRIVATE VEHICLE	153,071	409,487	328,020	280,667	190,206	634,126	2,039,982
	(96.7%)	(96.6%)	(96.0%)	(94.7%)	(93.0%)	(77.6%)	(88.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	411	2,870	3,472	4,286	2,697	19,756	35,189
	(0.3%)	(0.7%)	(1.0%)	(1.5%)	(1.3%)	(2.4%)	(1.5%)
Rail/Subway ³	70	469	804	2,276	2,125	10,074	17,858
	(0.0%)	(0.1%)	(0.2%)	(0.8%)	(1.0%)	(1.2%)	(0.8%)
Subtotal	482	3,339	4,276	6,562	4,822	29,829	53,047
	(0.3%)	(0.8%)	(1.3%)	(2.2%)	(2.4%)	(3.6%)	(2.3%)
OTHER MEANS							
Amtrak	7	53	12	235	34	4,767	5,108
	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.6%)	(0.2%)
Bike	543	712	569	547	385	414	3,471
	(0.3%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.1%)	(0.1%)
Walk	2,863	2,542	1,383	1,247	578	582	11,418
	(1.8%)	(0.6%)	(0.4%)	(0.4%)	(0.3%)	(0.1%)	(0.5%)
School Bus	973	7,034	6,803	6,195	5,085	5,104	33,442
	(0.6%)	(1.6%)	(2.0%)	(2.1%)	(2.5%)	(0.6%)	(1.4%)
Airplane	**	**	**	264	2,560	134,983	144,895
	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(1.2%)	(16.5%)	(6.3%)
Other	299	881	711	537	773	7,410	22,969
	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.4%)	(0.9%)	(1.0%)
Subtotal	4,686	11,222	9,478	9,025	9,415	153,260	221,303
	(3.0%)	(2.6%)	(2.8%)	(3.0%)	(4.6%)	(18.7%)	(9.6%)
TOTAL²	158,281	424,082	341,861	296,492	204,484	817,527	2,315,273
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

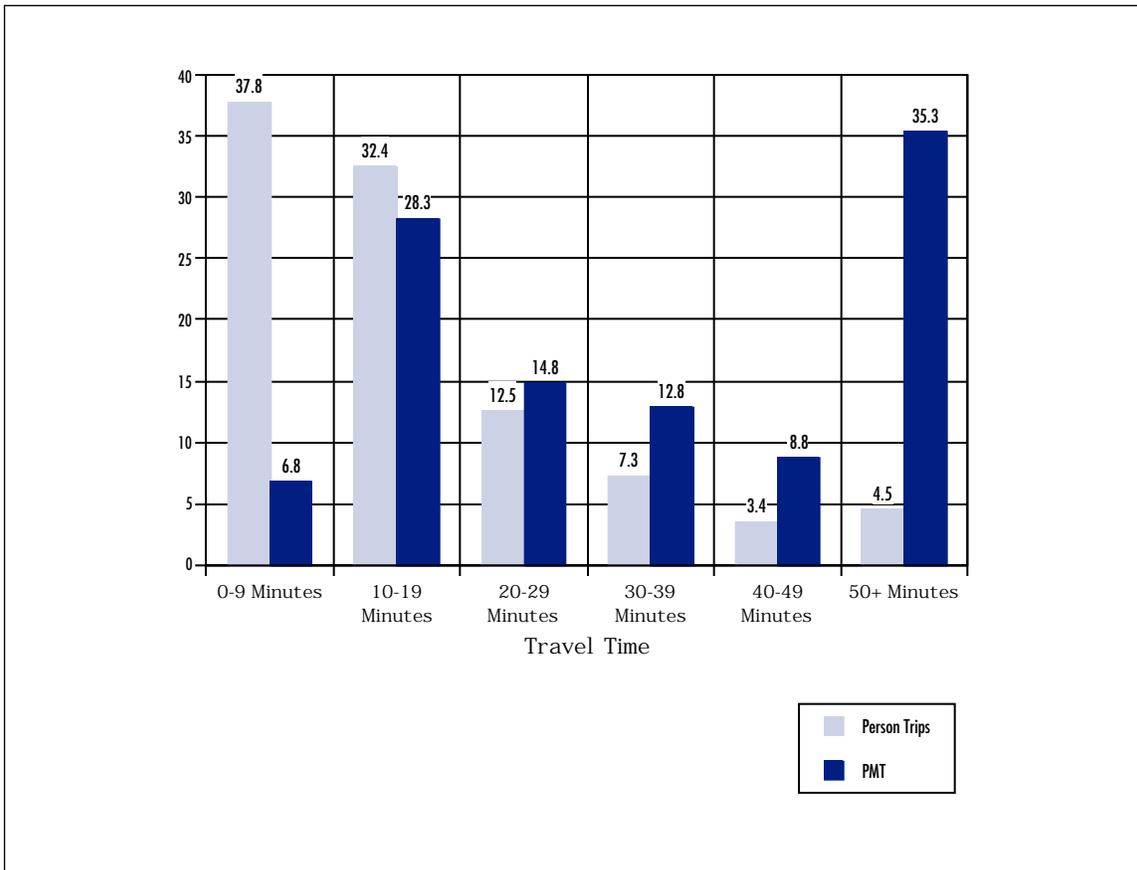
** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes miles of travel where travel time, mode of transportation, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

FIGURE 4.26
DISTRIBUTION OF PERSON TRIPS AND TRAVEL BY TRAVEL TIME CATEGORY
1990 NPTS



THE number of trips decreased as trip length increased. More than 60% of the person trips were to places less than 5 miles away and only 4.5% were to places more than 30 miles away. As trips got longer than 30 miles, use of privately owned vehicles decreased, and use of trains and airplanes increased.

As expected, people travelled shorter distances for family and personal trips and for civic, educational or religious purposes compared to other trips; and longer distances for recreational purposes. Tables 4.53 through 4.58 present data on person travel by trip length based on the 1990 NPTS data.

TABLE 4.53

**NUMBER OF PERSON TRIPS BY TRIP LENGTH CATEGORY AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	TOTAL ²
PRIVATE VEHICLE	127,224	38,682	18,270	10,048	9,192	10,583	217,393
	(82.8%)	(94.3%)	(95.1%)	(95.8%)	(97.0%)	(94.9%)	(87.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	1,927	647	237	153	89	133	3,543
	(1.2%)	(1.6%)	(1.2%)	(1.5%)	(0.9%)	(1.2%)	(1.4%)
Rail/Subway ³	427	231	89	92	103	164	1,349
	(0.3%)	(0.6%)	(0.5%)	(0.9%)	(1.1%)	(1.5%)	(0.5%)
Subtotal	2,354	878	326	245	192	297	4,892
	(1.5%)	(2.1%)	(1.7%)	(2.3%)	(2.0%)	(2.7%)	(2.0%)
OTHER MEANS							
Amtrak	6	2	18	0	2	19	54
	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.2%)	(0.0%)
Bike	1,611	88	26	7	7	3	1,767
	(1.0%)	(0.2%)	(0.1%)	(0.1%)	(0.1%)	(0.0%)	(0.7%)
Walk	17,722	82	17	18	1	*	18,007 ⁴
	(11.5%)	(0.2%)	(0.1%)	(0.2%)	(0.0%)	(0.0%)	(7.2%)
School Bus	3,997	1,159	484	148	48	46	6,092
	(2.6%)	(2.8%)	(2.5%)	(1.4%)	(0.5%)	(0.4%)	(2.4%)
Airplane	**	**	**	**	2	131	203
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(1.2%)	(0.1%)
Other	607	116	43	19	26	66	949
	(0.4%)	(0.3%)	(0.2%)	(0.2%)	(0.3%)	(0.6%)	(0.4%)
Subtotal	23,943	1,447	588	192	86	268⁴	27,072
	(15.6%)	(3.5%)	(3.1%)	(1.8%)	(0.9%)	(2.4%)	(10.8%)
TOTAL²	153,570	41,007	19,205	10,486	9,475	11,153	249,562
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

* Indicates insufficient data reported.

** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips where trip length, mode of transportation, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes records where insufficient data were reported in other cells.

TABLE 4.54

**NUMBER OF PERSON MILES OF TRAVEL BY TRIP LENGTH CATEGORY AND MODE OF TRANSPORTATION
1990 NPTS (MILLIONS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	TOTAL
PRIVATE VEHICLE	296,289	315,566	248,892	190,993	243,550	744,691	2,039,982
	(90.8%)	(94.4%)	(95.1%)	(95.7%)	(97.0%)	(79.0%)	(88.1%)
PUBLIC TRANSPORTATION							
Bus, Streetcar	4,687	5,135	3,317	2,951	2,509	16,591	35,189
	(1.4%)	(1.5%)	(1.3%)	(1.5%)	(1.0%)	(1.8%)	(1.5%)
Rail/Subway ²	1,155	1,929	1,260	1,808	2,768	8,939	17,858
	(0.4%)	(0.6%)	(0.5%)	(0.9%)	(1.1%)	(0.9%)	(0.8%)
Subtotal	5,842	7,064	4,576	4,759	5,277	25,529	53,047
	(1.8%)	(2.1%)	(1.7%)	(2.4%)	(2.1%)	(2.7%)	(2.3%)
OTHER MEANS							
Amtrak	25	12	268	3	60	4,741	5,108
	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.5%)	(0.2%)
Bike	2,007	689	362	116	159	137	3,471
	(0.6%)	(0.2%)	(0.1%)	(0.1%)	(0.1%)	(0.0%)	(0.1%)
Walk	10,058	624	248	346	30	*	11,418 ³
	(3.1%)	(0.2%)	(0.1%)	(0.2%)	(0.0%)	(0.0%)	(0.5%)
School Bus	10,696	9,268	6,586	2,856	1,235	2,801	33,442
	(3.3%)	(2.8%)	(2.5%)	(1.4%)	(0.5%)	(0.3%)	(1.4%)
Airplane	**	**	**	**	45	144,850	144,895
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(15.4%)	(6.3%)
Other	1,125	993	591	366	705	19,189	22,969
	(0.3%)	(0.3%)	(0.2%)	(0.2%)	(0.3%)	(2.0%)	(1.0%)
Subtotal	23,911	11,585	8,055	3,687	2,235	171,830³	221,303
	(7.3%)	(3.5%)	(3.1%)	(1.8%)	(0.9%)	(18.2%)	(9.6%)
TOTAL⁴	326,135	334,221	261,770	199,479	251,197	942,471	2,315,273
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

* Indicates insufficient data reported.

** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

³ Includes records where insufficient data were reported in other cells.

⁴ Includes miles of travel where mode of transportation was unreported.

FIGURE 4.27

DISTRIBUTION OF PERSON MILES OF TRAVEL BY TRIP LENGTH CATEGORY
AND MODE OF TRANSPORTATION
(WITHIN TRIP LENGTH CATEGORY)
1990 NPTS

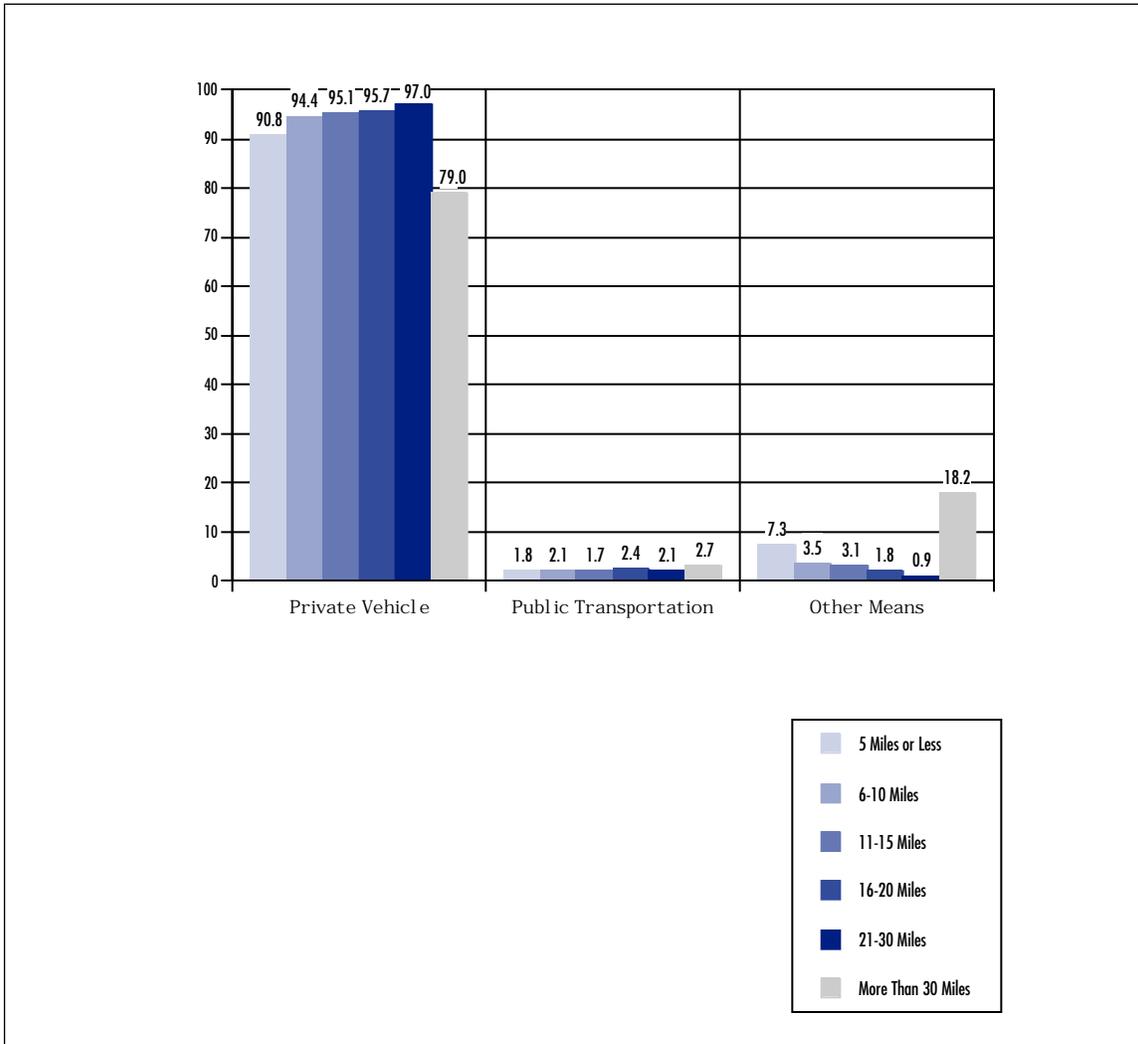


TABLE 4.55

**DISTRIBUTION OF PERSON TRIPS AND TRAVEL BY TRIP LENGTH CATEGORY AND MODE OF TRANSPORTATION
1990 NPTS (WITHIN MODE)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

	Person Trips						TOTAL ²
	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	
PRIVATE VEHICLE	58.5%	17.8%	8.4%	4.6%	4.2%	4.9%	100.0%
PUBLIC TRANSPORTATION							
Bus, Streetcar	54.4%	18.3%	6.7%	4.3%	2.5%	3.8%	100.0%
Rail/Subway ³	31.6%	17.1%	6.6%	6.8%	7.6%	12.1%	100.0%
Subtotal	48.1%	17.9%	6.7%	5.0%	3.9%	6.1%	100.0%
OTHER MEANS							
Amtrak	11.1%	3.7%	33.3%	0.0%	3.7%	35.2%	100.0%
Bike	91.2%	5.0%	1.5%	0.4%	0.4%	0.2%	100.0%
Walk	98.4%	0.5%	0.1%	0.1%	0.0%	0.0%	100.0%
School Bus	65.6%	19.0%	7.9%	2.4%	0.8%	0.8%	100.0%
Airplane	**	**	**	**	1.0%	64.5%	100.0%
Other	64.0%	12.2%	4.5%	2.0%	2.7%	7.0%	100.0%
Subtotal	88.5%	5.3%	2.2%	0.7%	0.3%	1.0%	100.0%
TOTAL²	61.5%	16.4%	7.7%	4.2%	3.8%	4.5%	100.0%
	Person Miles of Travel						
PRIVATE VEHICLE	14.5%	15.5%	12.2%	9.4%	11.9%	36.5%	100.0%
PUBLIC TRANSPORTATION							
Bus, Streetcar	13.3%	14.6%	9.4%	8.4%	7.1%	47.1%	100.0%
Rail/Subway ³	6.5%	10.8%	7.1%	10.1%	15.5%	50.1%	100.0%
Subtotal	11.0%	13.3%	8.6%	9.0%	9.9%	48.1%	100.0%
OTHER MEANS							
Amtrak	0.5%	0.2%	5.2%	0.1%	1.2%	92.8%	100.0%
Bike	57.8%	19.9%	10.4%	3.3%	4.6%	3.9%	100.0%
Walk	88.1%	5.5%	2.2%	3.0%	0.3%	1.0%	100.0%
School Bus	32.0%	27.7%	19.7%	8.5%	3.7%	8.4%	100.0%
Airplane	**	**	**	**	0.0%	100.0%	100.0%
Other	4.9%	4.3%	2.6%	1.6%	3.1%	83.5%	100.0%
Subtotal	10.8%	5.2%	3.6%	1.7%	1.0%	77.6%	100.0%
TOTAL²	14.1%	14.4%	11.3%	8.6%	10.8%	40.7%	100.0%

** Indicates no data reported.

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips or miles of travel where trip length, mode of transportation, or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

FIGURE 4.28

**DISTRIBUTION OF PERSON MILES OF TRAVEL BY TRIP LENGTH CATEGORY
AND SELECTED MODE OF TRANSPORTATION
1990 NPTS
(WITHIN MODE)**

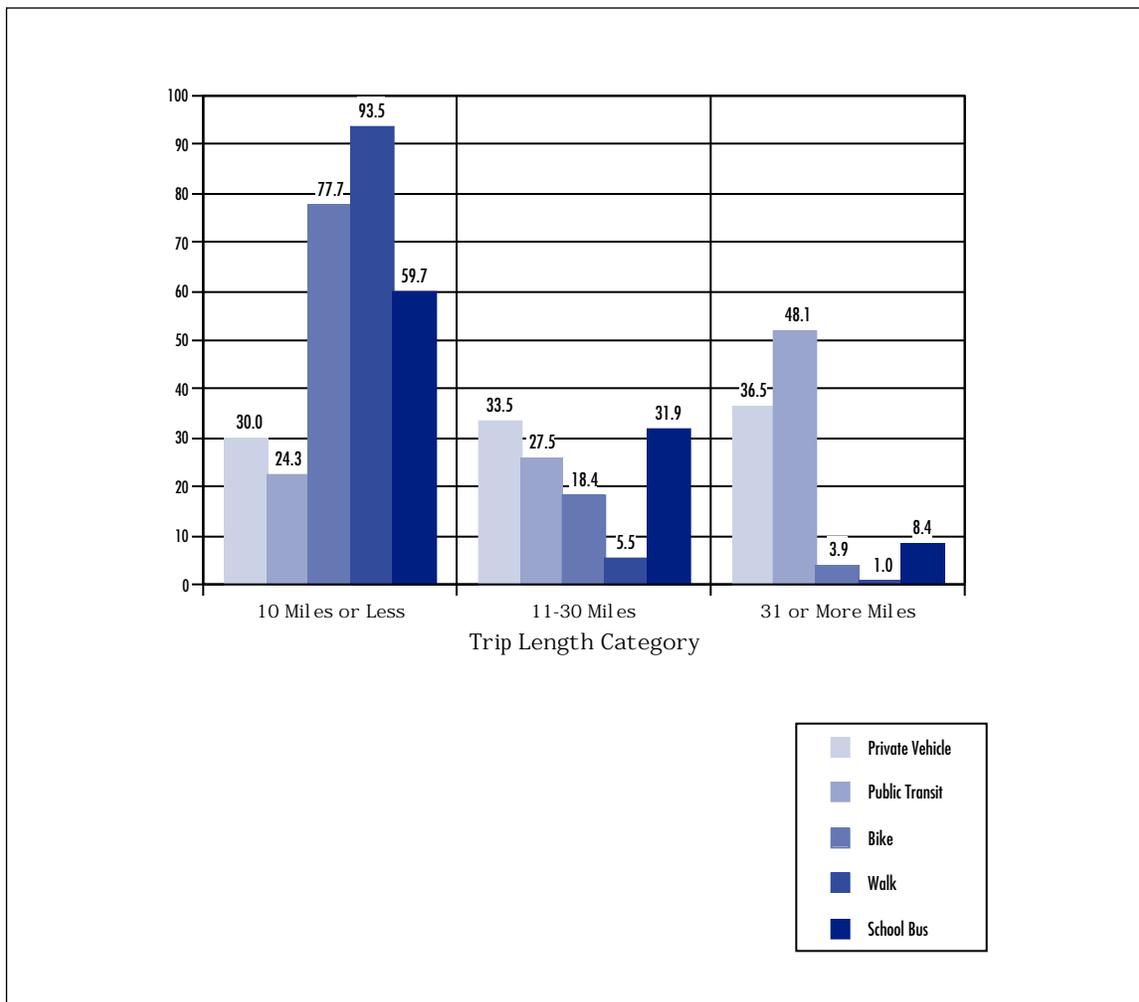


TABLE 4.56

**NUMBER OF PERSON TRIPS BY TRIP LENGTH CATEGORY AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	TOTAL ¹
EARNING A LIVING							
To or From Work	22,937 (14.9%)	10,610 (25.9%)	6,104 (31.8%)	3,511 (33.5%)	3,332 (35.2%)	2,903 (26.0%)	50,314 (20.2%)
Work-Related Business	1,886 (1.2%)	598 (1.4%)	288 (1.5%)	113 (1.1%)	140 (1.5%)	427 (3.8%)	3,529 (1.4%)
Subtotal	24,825 (16.2%)	11,208 (27.3%)	6,392 (33.3%)	3,624 (34.6%)	3,472 (36.6%)	3,330 (29.9%)	53,843 (21.6%)
FAMILY AND PERSONAL BUSINESS							
Shopping	34,698 (22.6%)	6,172 (15.1%)	2,446 (12.7%)	1,193 (11.4%)	996 (10.5%)	883 (7.9%)	47,057 (18.9%)
Doctor/Dentist	1,261 (0.8%)	614 (1.5%)	286 (1.5%)	158 (1.5%)	215 (2.3%)	140 (1.3%)	2,800 (1.1%)
Other Family or Personal Business	35,923 (23.4%)	8,120 (19.8%)	3,307 (17.2%)	1,895 (18.1%)	1,566 (16.5%)	2,025 (18.1%)	53,752 (21.5%)
Subtotal	71,882 (46.8%)	14,906 (36.4%)	6,039 (31.4%)	3,246 (31.0%)	2,777 (29.3%)	3,048 (27.3%)	103,609 (41.5%)
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	20,059 (13.1%)	4,392 (10.7%)	1,735 (9.0%)	736 (7.0%)	404 (4.3%)	382 (3.4%)	28,397 (11.4%)
SOCIAL AND RECREATIONAL							
Vacation	53 (0.0%)	31 (0.1%)	41 (0.2%)	23 (0.2%)	25 (0.3%)	302 (2.7%)	518 (0.2%)
Visiting Friends/Relatives	13,893 (9.1%)	4,006 (9.8%)	1,963 (10.2%)	1,209 (11.5%)	1,086 (11.4%)	1,631 (14.6%)	24,265 (9.7%)
Pleasure Driving	201 (0.1%)	150 (0.4%)	116 (0.6%)	60 (0.6%)	93 (1.0%)	115 (1.4%)	802 (0.3%)
Other Social/Recreational	21,470 (14.0%)	6,043 (14.7%)	2,766 (14.4%)	1,528 (14.6%)	1,582 (16.7%)	2,203 (19.8%)	36,214 (14.5%)
Subtotal	35,617 (23.2%)	10,230 (25.0%)	4,886 (25.4%)	2,820 (26.9%)	2,786 (29.4%)	4,291 (38.5%)	61,799 (24.8%)
OTHER							
Subtotal	1,160 (0.8%)	266 (0.6%)	146 (0.8%)	61 (0.6%)	35 (0.4%)	99 (0.9%)	1,831 (0.7%)
TOTAL¹	153,570 (100.0%)	41,007 (100.0%)	19,205 (100.0%)	10,487 (100.0%)	9,475 (100.0%)	11,153 (100.0%)	249,562 (100.0%)

¹ Includes trips where trip length, trip purpose, or both were unreported.

Almost 62% of all person trips are to places less than five miles from the origin. The number of trips decreases as the destination is further away from the origin, up to 30 miles away. The increase in the number of

trips to places more than 30 miles away from the origin might be attributed to longer vacationing trips. More than half of all vacationing trips are to places more than 30 miles away from home.

TABLE 4.57

DISTRIBUTION OF PERSON TRIPS BY TRIP LENGTH CATEGORY AND TRIP PURPOSE
1990 NPTS
(ACROSS TRIP LENGTH CATEGORY)

	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	TOTAL ¹
EARNING A LIVING							
To or From Work	45.6%	21.1%	12.1%	7.0%	6.6%	5.8%	100.0%
Work-Related Business	53.4%	16.9%	8.2%	3.2%	4.0%	12.1%	100.0%
Subtotal	46.1%	20.8%	11.9%	6.7%	6.4%	6.2%	100.0%
FAMILY AND PERSONAL BUSINESS							
Shopping	73.7%	13.1%	5.2%	2.5%	2.1%	1.9%	100.0%
Doctor/Dentist	45.0%	21.9%	10.2%	5.6%	7.7%	5.0%	100.0%
Other Family or Personal Business	66.8%	15.1%	6.2%	3.5%	2.9%	3.8%	100.0%
Subtotal	69.4%	14.4%	5.8%	3.1%	2.7%	2.9%	100.0%
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	70.6%	15.5%	6.1%	2.6%	1.4%	1.3%	100.0%
SOCIAL AND RECREATIONAL							
Vacation	10.2%	6.0%	7.9%	4.4%	4.8%	58.3%	100.0%
Visiting Friends/Relatives	57.3%	16.5%	8.1%	5.0%	4.5%	6.7%	100.0%
Pleasure Driving	25.1%	18.7%	14.5%	7.5%	11.6%	14.3%	100.0%
Other Social/Recreational	59.3%	16.7%	7.6%	4.2%	4.4%	6.1%	100.0%
Subtotal	57.6%	16.6%	7.9%	4.6%	4.5%	6.9%	100.0%
OTHER							
Subtotal	63.3%	14.5%	8.0%	3.3%	1.9%	5.4%	100.0%
TOTAL¹	61.5%	16.4%	7.7%	4.2%	3.8%	4.5%	100.0%

¹ Includes trips where trip length, trip purpose, or both were unreported.

TABLE 4.58

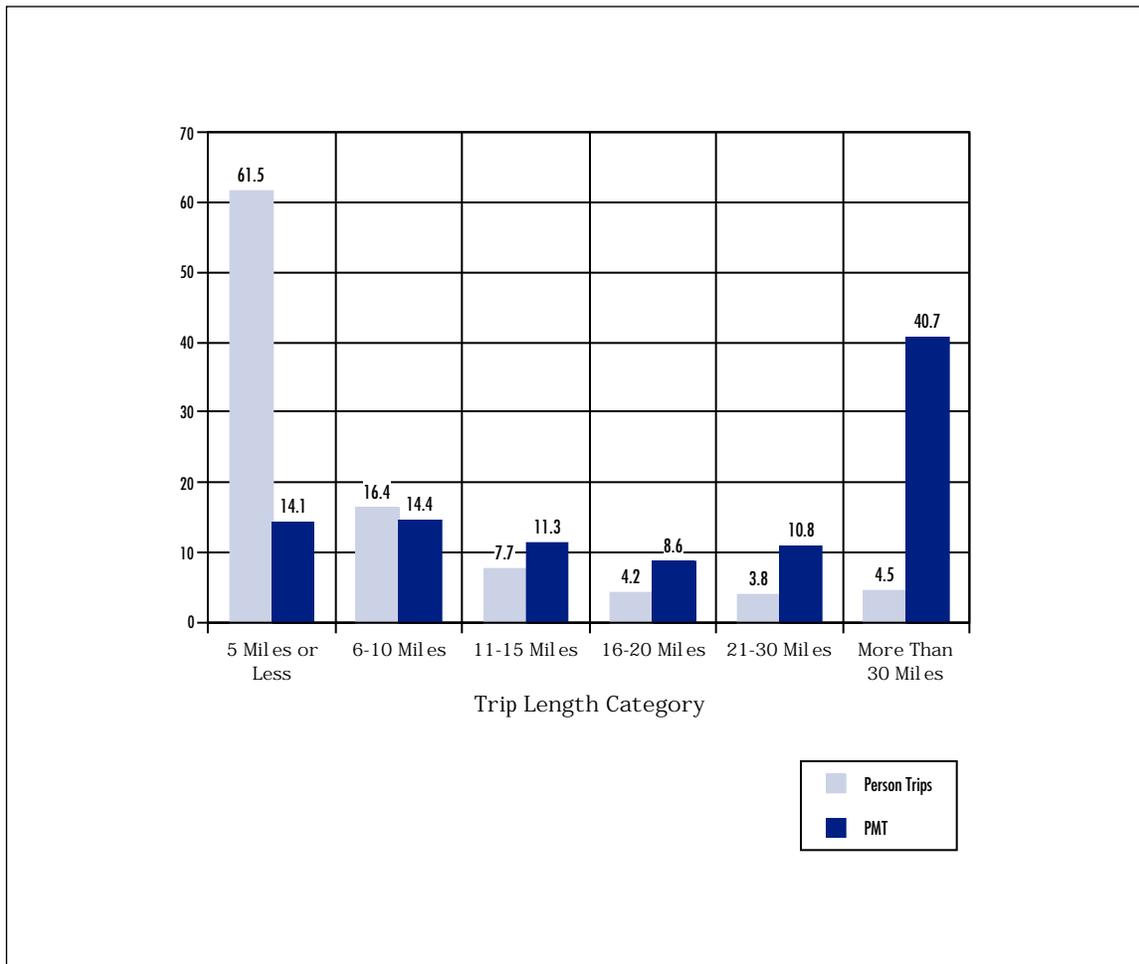
**NUMBER OF PERSON MILES OF TRAVEL BY TRIP LENGTH CATEGORY AND TRIP PURPOSE
1990 NPTS
(MILLIONS)**

	5 miles or less	6 - 10 miles	11 - 15 miles	16 - 20 miles	21 - 30 miles	> 30 miles	TOTAL
EARNING A LIVING							
To or From Work	56,843 (17.4%)	87,350 (26.1%)	82,452 (31.5%)	65,850 (33.0%)	87,222 (34.7%)	146,439 (15.5%)	526,156 (22.7%)
Work-Related Business	4,180 (1.3%)	4,840 (1.5%)	3,959 (1.5%)	2,115 (1.1%)	3,703 (1.5%)	78,584 (8.3%)	97,380 (4.2%)
Subtotal	61,023 (18.7%)	92,190 (27.6%)	86,411 (33.0%)	67,965 (34.1%)	90,925 (36.2%)	225,023 (23.9%)	623,536 (26.9%)
FAMILY AND PERSONAL BUSINESS							
Shopping	68,085 (20.9%)	49,988 (15.0%)	33,440 (12.8%)	22,742 (11.4%)	26,829 (10.7%)	48,537 (5.2%)	249,621 (10.8%)
Doctor/Dentist	3,266 (1.0%)	5,137 (1.5%)	3,849 (1.5%)	3,035 (1.5%)	5,730 (2.3%)	7,296 (0.8%)	28,314 (1.2%)
Other Family or Personal Business	75,220 (23.1%)	65,758 (19.7%)	45,131 (17.2%)	36,303 (18.2%)	41,424 (16.5%)	182,341 (19.3%)	446,178 (19.3%)
Subtotal	146,571 (44.9%)	120,883 (36.2%)	82,420 (31.5%)	62,080 (31.1%)	73,983 (29.5%)	238,174 (25.3%)	724,113 (31.3%)
CIVIC, EDUCATIONAL AND RELIGIOUS							
Subtotal	40,428 (12.4%)	34,802 (10.4%)	23,722 (9.1%)	14,061 (7.0%)	10,658 (4.2%)	25,600 (2.7%)	149,272 (6.4%)
SOCIAL AND RECREATIONAL							
Vacation	98 (0.0%)	261 (0.1%)	558 (0.2%)	422 (0.2%)	693 (0.3%)	101,558 (10.8%)	103,589 (4.5%)
Visiting Friends/Relatives	27,940 (8.6%)	32,963 (9.9%)	26,775 (10.2%)	23,103 (11.6%)	28,967 (11.5%)	139,308 (14.8%)	279,056 (12.0%)
Pleasure Driving	549 (0.2%)	1,234 (0.4%)	1,590 (0.6%)	1,182 (0.6%)	2,540 (1.0%)	10,125 (1.1%)	17,220 (0.7%)
Other Social/Recreational	46,989 (14.4%)	49,704 (14.9%)	38,193 (14.6%)	29,496 (14.8%)	42,440 (16.9%)	192,987 (20.5%)	399,810 (17.3%)
Subtotal	75,576 (23.2%)	84,162 (25.2%)	67,116 (25.6%)	54,203 (27.2%)	74,640 (29.7%)	443,978 (47.1%)	799,675 (34.5%)
OTHER							
Subtotal	2,471 (0.8%)	2,155 (0.6%)	2,006 (0.8%)	1,169 (0.6%)	962 (0.4%)	9,433 (1.0%)	18,197 (0.8%)
TOTAL¹	326,135 (100.0%)	334,221 (100.0%)	261,770 (100.0%)	199,479 (100.0%)	251,197 (100.0%)	942,471 (100.0%)	2,315,273 (100.0%)

¹ Includes miles of travel where trip purpose was unreported.

FIGURE 4.29

**DISTRIBUTION OF PERSON TRIPS AND TRAVEL BY TRIP LENGTH CATEGORY
1990 NPTS**



Contrary to popular perception, the greatest number of person trips and person miles of travel did not take place in the summer. Both person trips and person miles of travel in the spring slightly exceeded that of the summer. This seasonal pattern is probably

due to the decline in trips to work and school over the summer. As expected, winter trips had the shortest average distance compared to trips taken in other seasons. Trip lengths for all seasons increased from 1983 to 1990, except for trips in spring.

TABLE 4.59

STATISTICS ON PERSON TRIPS AND TRAVEL BY SEASONAL VARIATION
1983 AND 1990 NPTS¹

Season	Person Trips (000)		Person Miles (000)		Average Trip Length ² (miles)	
	1983	1990	1983	1990	1983	1990
Winter (Dec - Feb)	53,911,920 (24.0%)	60,384,449 (24.2%)	426,073,942 (21.9%)	537,867,945 (23.2%)	7.9	9.1
Spring (Mar - May)	58,708,838 (26.2%)	68,942,319 (27.6%)	543,010,477 (27.9%)	628,158,333 (27.1%)	9.3	9.3
Summer (June - Aug)	56,750,784 (25.3%)	61,087,922 (24.5%)	533,670,482 (27.4%)	617,551,500 (26.7%)	9.4	10.3
Fall (Sept - Nov)	54,536,414 (24.3%)	59,147,607 (23.7%)	441,223,931 (22.7%)	531,695,586 (23.0%)	8.1	9.2
TOTAL	224,385,000 (100.0%)	249,562,297 (100.0%)	1,946,661,966³ (100.0%)	2,315,273,365 (100.0%)	8.7	9.5

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Includes miles of travel where season was unreported.

² Average trip is calculated only for records where trip mile information is present.

FIGURE 4.30

**AVERAGE LENGTH OF PERSON TRIPS BY SEASONAL VARIATION
1983 AND 1990 NPTS**

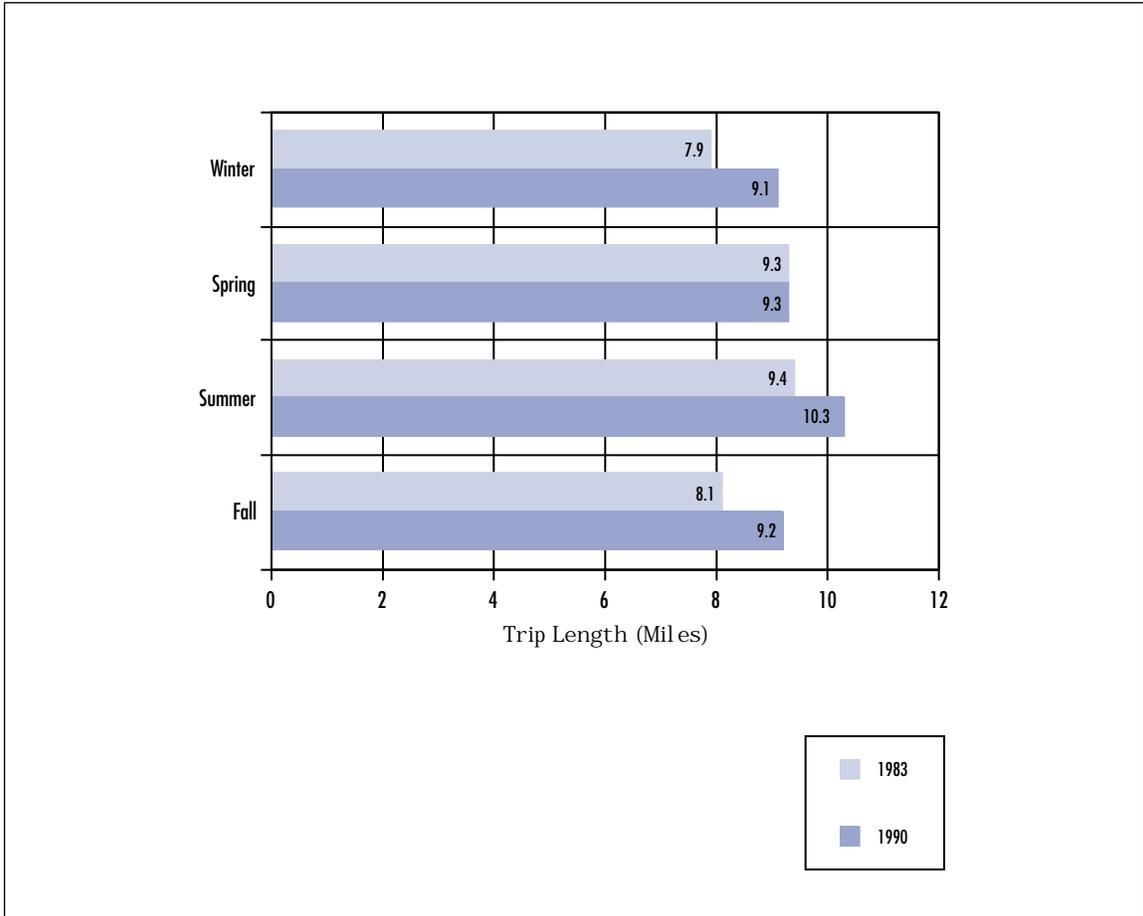


TABLE 4.60

**NUMBER OF PERSON TRIPS BY SEASONAL VARIATION AND MODE OF TRANSPORTATION
1990 NPTS (THOUSANDS)**

NOTE: SEE LIMITATIONS OF DATA ON TRANSIT¹ IN CHAPTER 1, SECTION 5

Mode	Winter	Spring	Summer	Fall
PRIVATE VEHICLE				
Auto, Van - Driver	33,300,000 (55.1%)	37,900,000 (55.0%)	32,600,000 (53.4%)	32,300,000 (54.6%)
Auto, Van - Passenger	12,938,020 (21.4%)	13,954,340 (20.2%)	14,259,580 (23.3%)	12,226,680 (20.6%)
Pickup Truck	6,144,000 (10.2%)	6,777,000 (9.8%)	6,823,000 (11.2%)	5,889,000 (10.0%)
Other Private Vehicle	468,200 (0.8%)	530,000 (0.8%)	839,200 (1.4%)	396,100 (0.7%)
Subtotal - Private	52,850,220 (87.5%)	59,161,340 (85.8%)	54,521,780 (89.3%)	50,811,780 (85.9%)
PUBLIC TRANSPORTATION				
Bus, Streetcar	764,085 (1.3%)	1,230,728 (1.8%)	771,474 (1.3%)	776,901 (1.3%)
Rail/Subway ²	362,197 (0.6%)	372,066 (0.5%)	349,935 (0.6%)	265,073 (0.4%)
Subtotal - Public	1,126,283 (1.9%)	1,602,794 (2.3%)	1,121,409 (1.8%)	1,041,974 (1.8%)
OTHER MEANS				
Amtrak	1,930 (0.0%)	17,275 (0.0%)	5,999 (0.0%)	29,110 (0.0%)
Walk	4,026,000 (6.7%)	5,434,000 (7.9%)	4,020,000 (6.6%)	4,527,000 (7.7%)
Bike	168,400 (0.3%)	495,200 (0.7%)	562,000 (0.9%)	540,900 (0.9%)
School Bus	1,948,000 (3.2%)	1,879,000 (2.7%)	420,300 (0.7%)	1,845,000 (3.1%)
Airplane	43,160 (0.1%)	38,770 (0.1%)	64,570 (0.1%)	56,350 (0.1%)
Other	185,050 (0.3%)	218,250 (0.3%)	317,400 (0.5%)	227,800 (0.4%)
Subtotal - Other	6,372,540 (10.6%)	8,082,495 (11.7%)	5,390,269 (8.8%)	7,226,160 (12.2%)
TOTAL³	60,384,449 (100.0%)	68,942,319 (100.0%)	61,087,922 (100.0%)	59,147,607 (100.0%)
ALL MODES	24.2%	27.6%	24.5%	23.7%

¹ Estimates of transit use are based on a total of 2870 travel day trips on transit in the NPTS sample. The NPTS estimate of transit trips is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Rail/Subway includes trips by subway, elevated rail and commuter train.

³ Includes trips where mode of transportation was unreported.

TABLE 4.60 presents the seasonal distribution of person trips by mode. There is little difference among seasons in number of trips Americans take, except slightly more trips take place in the spring. There are more trips in summer taken as the passengers of automobiles or vans than in other seasons, perhaps reflecting the

increase in vacation trips during summer. There are more trips in summer by the mode labeled as “other private vehicle,” which includes recreational vehicles and motor homes. As expected, the proportion of bike trips in winter is less than one third of that in the other three seasons, and spring and fall see more walking trips.

TABLE 4.61

**PERSON TRIPS AND PERSON MILES OF TRAVEL BY DAY OF WEEK
1983 AND 1990 NPTS¹**

Day	Person Trips (000)		Person Miles (000)		Average Trip Length ² (miles)	
	1983	1990	1983	1990	1983	1990
Sunday	28,336,695 (12.6%)	33,478,741 (13.4%)	313,174,252 (16.1%)	398,512,009 (17.2%)	11.1	12.1
Monday	32,549,817 (14.5%)	37,040,514 (14.8%)	273,462,065 (14.0%)	344,493,846 (14.9%)	8.4	9.5
Tuesday	31,724,352 (14.1%)	38,675,871 (15.5%)	245,833,182 (12.6%)	325,792,319 (14.1%)	7.8	8.6
Wednesday	32,872,904 (14.7%)	35,617,883 (14.3%)	244,761,980 (12.6%)	315,697,412 (13.6%)	7.5	9.1
Thursday	33,137,767 (14.8%)	38,200,175 (15.3%)	299,844,148 (15.4%)	300,537,714 (13.0%)	9.1	8.0
Friday	35,261,534 (15.7%)	33,296,806 (13.3%)	279,781,446 (14.4%)	290,550,850 (12.5%)	7.9	8.9
Saturday	30,501,931 (13.6%)	33,252,307 (13.3%)	289,804,893 (14.9%)	339,689,215 (14.7%)	9.5	10.4
TOTAL	224,385,000 (100.0%)	249,562,297 (100.0%)	1,946,661,966 (100.0%)	2,315,273,365 (100.0%)	8.7	9.5

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

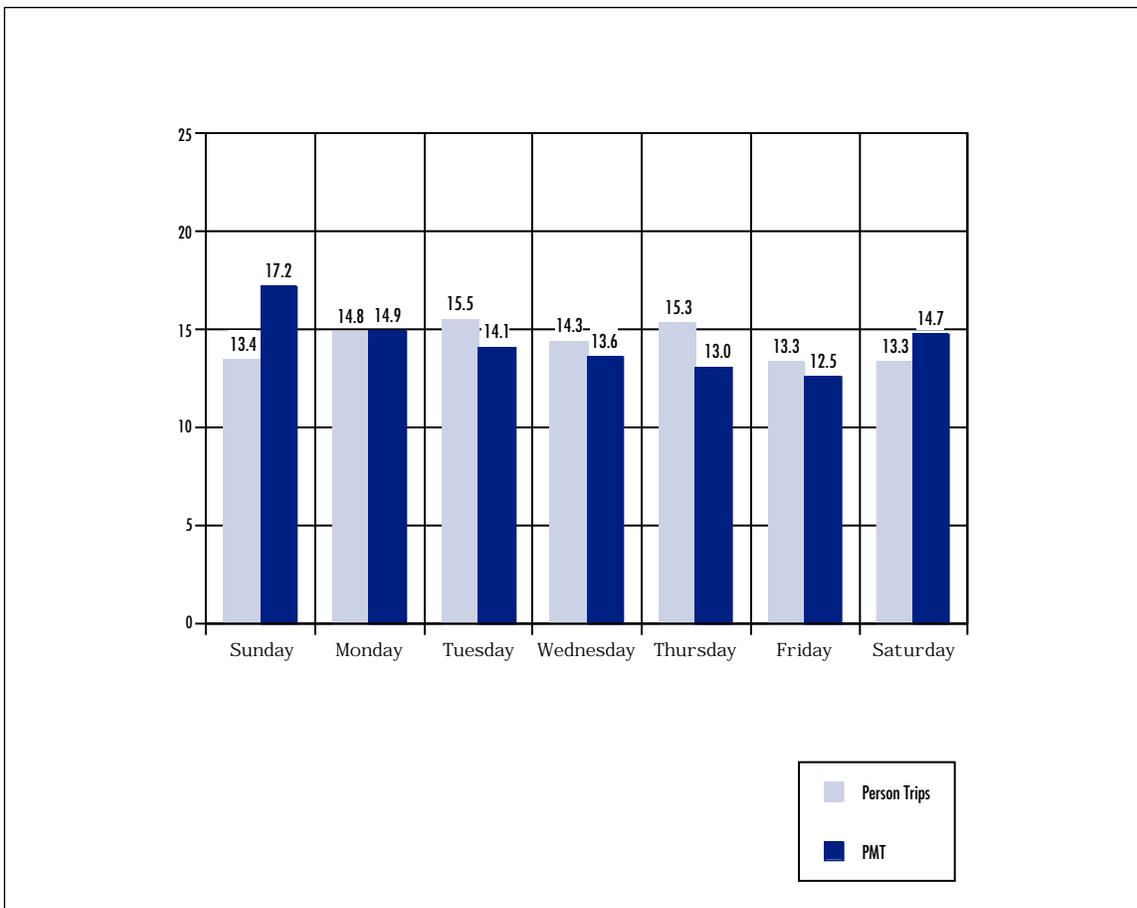
² Average trip length is calculated using only those records with trip mile information present.

Although Americans did not take as many trips on Sundays as on other days of the week, Sunday trips accounted for more person miles of travel than trips taken on other

days of the week, indicating Sunday trips were the longest. Trip lengths generally increased from 1983 to 1990 regardless of the day of the week.

FIGURE 4.31

**DISTRIBUTION OF PERSON TRAVEL BY DAY OF WEEK
1990 NPTS**

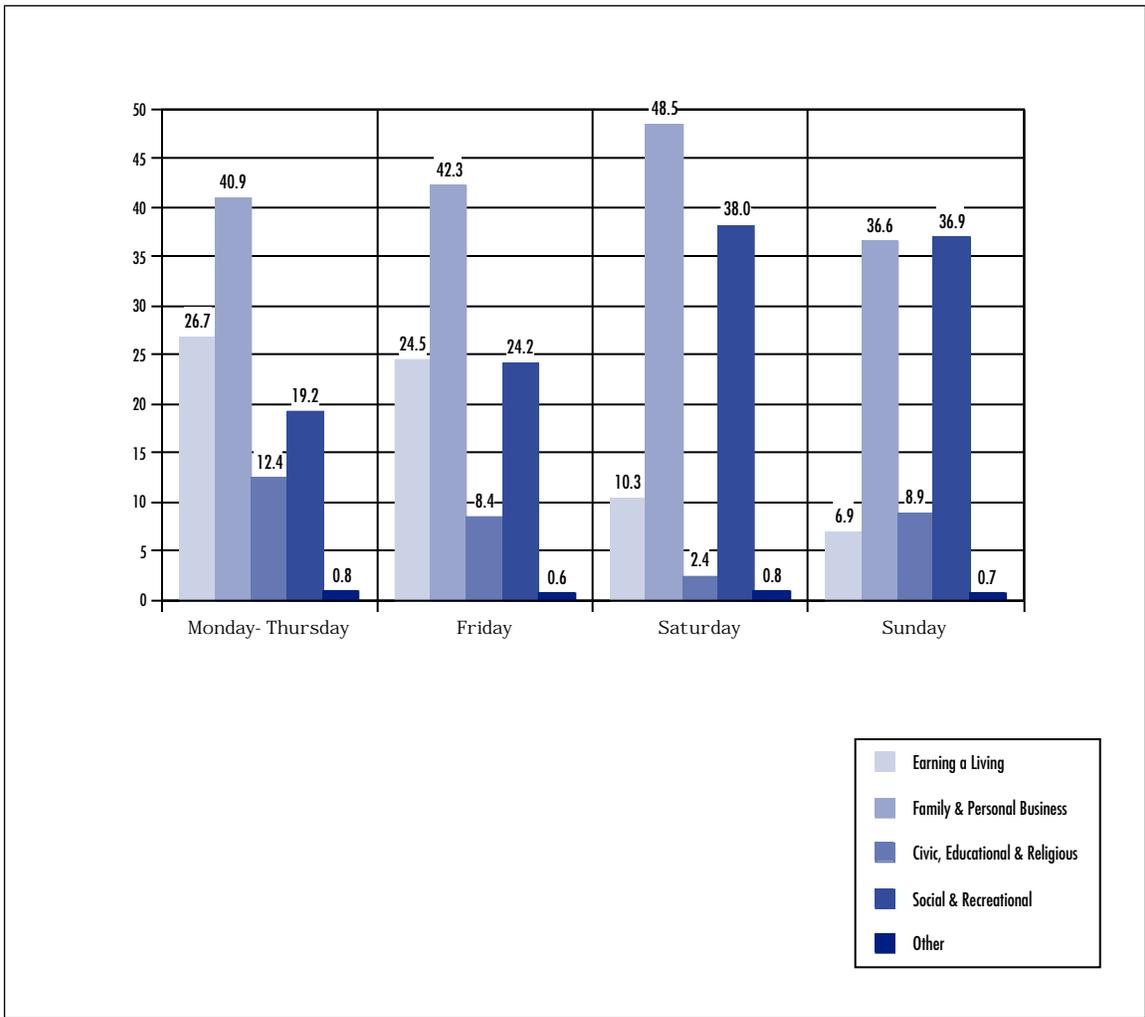


Family and personal business was the most common reason for travel regardless of the day of the week. During the weekdays, earning a living was the second most com-

mon reason to travel. However, the second most common reason to travel on Saturday and Sunday was for social and recreational purposes.

FIGURE 4.32

**DISTRIBUTION OF PERSON TRIPS BY DAY OF WEEK AND TRIP PURPOSE
1990 NPTS**



As expected, the shares of all trips for earning a living were considerably higher from Mondays through Thursdays than those for Fridays and weekends. In contrast to earning-a-living trips, social and recreational

trips peaked on weekends. The Sunday share of civic, education or religious trips was almost one-and-a-half times greater than those on other days of the week.

TABLE 4.63
DISTRIBUTION OF PERSON TRIPS BY DAY OF WEEK AND TRIP PURPOSE
1990 NPTS
(WITHIN PURPOSE)

Purpose	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	TOTAL
Earning a Living	4.3%	18.1%	19.2%	18.0%	18.9%	15.2%	6.4%	100.0%
Family & Personal Business	11.8%	15.0%	15.4%	13.7%	15.0%	13.6%	15.6%	100.0%
Civic, Educational & Religious	22.2%	15.2%	17.0%	15.9%	17.0%	9.9%	2.8%	100.0%
Social and Recreational	20.0%	11.6%	11.8%	11.2%	11.9%	13.1%	20.4%	100.0%
Other	12.2%	16.4%	14.2%	14.8%	18.0%	10.3%	14.2%	100.0%
ALL PURPOSES	13.4%	14.8%	15.5%	14.3%	15.3%	13.3%	13.3%	100.0%

The distribution of person trips by time of day shows that the “peak period” has widened to a ten-hour span, from nine o'clock in the morning to seven o'clock at night. Furthermore, the NPTS data show, contrary to much of public opinion, that only 47% of all trips were for commuting to work or work-related travel during the morning “peak period” from 6 to 9 a.m. These data suggest that the traditional concept of “peak

period” may no longer be appropriate. In the morning period from 6 to 9 a.m., commuting to work and work-related travel still accounted for the majority of the morning travel. However, trips for family and personal business, perhaps in an attempt to avoid the morning traffic congestion, have altered the traditional morning and afternoon peaks to a 10-hour “peak.”

TABLE 4.64
NUMBER OF PERSON TRIPS BY TIME OF DAY AND TRIP PURPOSE
1990 NPTS
(MILLION)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ¹
Earning a Living	2,902 (60.0%)	16,410 (47.4%)	5,765 (11.5%)	7,437 (14.6%)	14,189 (24.9%)	3,823 (12.0%)	2,209 (22.2%)	53,843 (21.6%)
Family and Personal Business	679 (14.0%)	6,986 (20.2%)	27,856 (55.6%)	25,234 (49.5%)	23,091 (40.5%)	11,383 (35.6%)	2,453 (24.7%)	103,608 (41.5%)
Civic, Educational, & Religious	50 (1.0%)	8,831 (25.5%)	5,736 (11.5%)	7,165 (14.1%)	3,277 (5.8%)	2,395 (7.5%)	394 (4.0%)	28,397 (11.4%)
Social and Recreational	1,183 (24.5%)	2,168 (6.3%)	10,255 (20.5%)	10,726 (21.0%)	16,023 (28.1%)	14,129 (44.2%)	4,789 (48.2%)	61,799 (24.8%)
Other	23 (0.5%)	212 (0.6%)	448 (0.9%)	413 (0.8%)	367 (0.6%)	199 (0.6%)	73 (0.7%)	1,831 (0.7%)
TOTAL¹	4,837 (100.0%)	34,614 (100.0%)	50,064 (100.0%)	50,984 (100.0%)	56,956 (100.0%)	31,933 (100.0%)	9,927 (100.0%)	249,562 (100.0%)
ALL PURPOSES	1.9%	13.9%	20.1%	20.4%	22.8%	12.8%	4.0%	100.0%

¹ Includes trips where trip purpose, time of day, or both were unreported.

TABLE 4.66

 NUMBER OF WEEKEND¹ PERSON TRIPS² BY TIME OF DAY AND TRIP PURPOSE
 1990 NPTS
 (MILLIONS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ³
Earning a Living	346 (33.0%)	1,199 (28.4%)	1,090 (5.9%)	970 (6.6%)	1,605 (10.0%)	1,046 (8.2%)	608 (13.3%)	7,012 (9.3%)
Family and Personal Business	176 (16.8%)	1,287 (30.5%)	8,703 (46.8%)	7,570 (51.4%)	6,400 (39.9%)	4,191 (32.8%)	1,134 (24.8%)	31,302 (41.7%)
Civic, Educational, & Religious	11 (1.0%)	750 (17.8%)	3,793 (20.4%)	684 (4.6%)	995 (6.2%)	785 (6.1%)	182 (4.0%)	7,352 (9.8%)
Social and Recreational	507 (48.4%)	937 (22.2%)	4,858 (26.1%)	5,359 (36.4%)	6,959 (43.4%)	6,718 (52.6%)	2,615 (57.1%)	28,861 (38.4%)
Other	8 (0.7%)	51 (1.2%)	159 (0.9%)	135 (0.9%)	70 (0.4%)	41 (0.3%)	28 (0.6%)	525 (0.7%)
TOTAL³	1,049 (100.0%)	4,224 (100.0%)	18,605 (100.0%)	14,722 (100.0%)	16,032 (100.0%)	12,783 (100.0%)	4,576 (100.0%)	75,104 (100.0%)
ALL PURPOSES	1.4%	5.6%	24.8%	19.6%	21.3%	17.0%	6.1%	100.0%

¹ "Weekend" is defined as the time between 6:00 p.m. Friday and midnight Sunday.

² Does not include trips where weekday/weekend status is unknown.

³ Includes trips where trip purpose, start time of trip, or both were unreported.

FIGURE 4.33

**DISTRIBUTION OF PERSON TRIPS BY DAY OF WEEK AND TIME OF DAY
1990 NPTS**

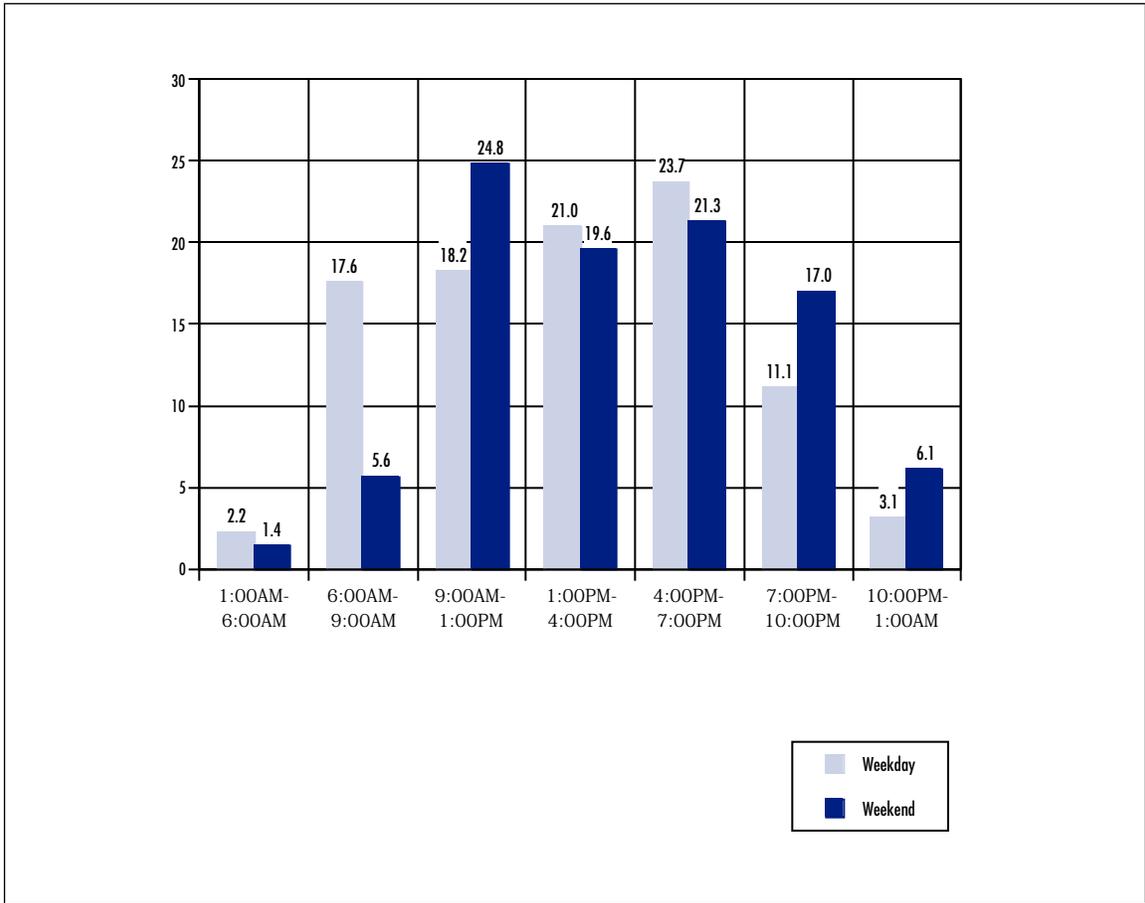
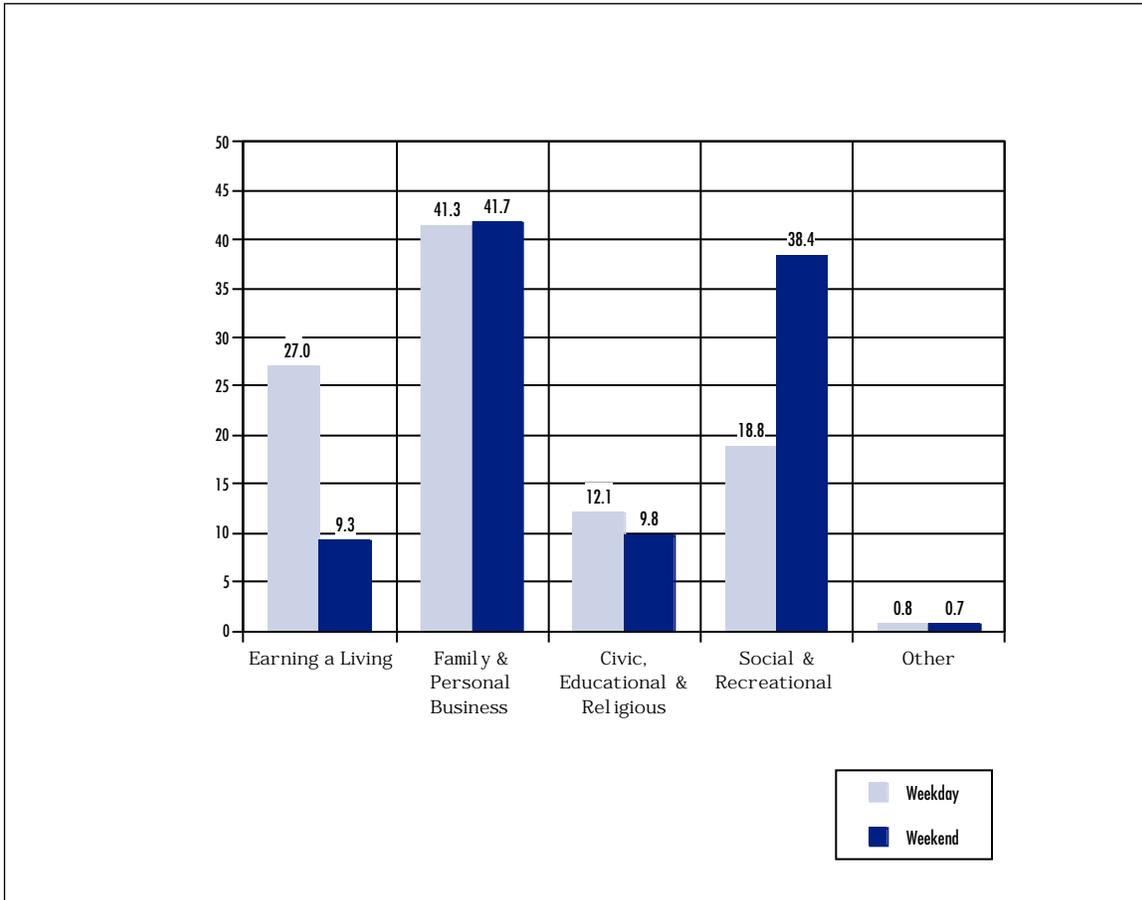


FIGURE 4.34

**DISTRIBUTION OF PERSON TRIPS BY DAY OF WEEK AND TRIP PURPOSE
1990 NPTS**





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