



U.S. Department
of Transportation
Federal Highway
Administration

1990 NPTS

**NATIONWIDE
PERSONAL
TRANSPORTATION
SURVEY**

**SUMMARY OF
TRAVEL TRENDS**

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16. Abstract This report is part of a series of products from the 1990 Nationwide Personal Transportation Survey (NPTS). The NPTS dataset contains information about the amount and nature of personal travel in the U.S., as related to the demographics of persons and households. This report highlights the survey results with emphasis on comparing the 1990 data to NPTS data collected in 1969, 1977, and 1983. Topics such as household vehicle availability and use, annual miles per licensed driver, household travel rates, vehicle occupancy, and home-to-work trips are included. The report also contains a brief look at travel by women and older persons. Each of these topics will be covered more extensively in later reports in this series.					
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INTRODUCTION



The mobility of the United States population is the greatest in our history. We take more trips and travel more miles than ever before.

Over the past several decades a primary reason for this increasing mobility has been economic growth. There is a strong relationship between the current high level of mobility and the long term performance of our economy.

While our greater mobility has benefitted us individually, there are growing serious concerns about traffic congestion, the effects of traffic congestion on air quality, the movement of people, the transport of goods, and therefore, the impact on the future economic viability of our Nation.

If we are to find a balance between the need to accommodate increasing mobility and the issues of congestion and air quality, we must begin by understanding the trends associated with personal travel in the U.S.

Trends and patterns in personal travel, together with other travel characteristics of individuals in the U.S., are contained in the 1990 and previous Nationwide Personal Transportation Surveys (NPTS). The NPTS is a survey of personal travel conducted about every 7 years. The NPTS is a unique source of data on personal travel and provides information on household trips, their purposes, and the transportation modes used. NPTS travel data can be linked to the demographics of individuals and households. Results supply essential information needed to address current transportation issues.

Several different agencies of the U.S. Department of Transportation sponsored the 1990 NPTS, which was conducted by the Research Triangle Institute.¹ The Federal Highway Administration, the Federal Transit Administration, the National Highway Traffic and Safety Administration, the Office

¹ The Research Triangle Institute is a private, non-profit organization located in the Raleigh-Durham area of North Carolina. The 1969, 1977 and 1983 NPTS Surveys were conducted by the Bureau of the Census.

of the Secretary of Transportation, and the Federal Railroad Administration participated in the survey.

Summary Of Travel Trends

This Summary of Travel Trends report presents an overview of data on travel behavior, transportation patterns, and demographic trends. This Summary updates and replaces an Early Results report² published in August 1991. The Early Results report used preliminary 1990 survey findings while this report uses final data. Specifically, this Summary report includes selected information on household composition, vehicle ownership, household travel patterns, journey to work, vehicle utilization, vehicle occupancy, modal split, characteristics of drivers, and travel by women and older persons.

This report consists of a series of tables, accompanying graphs, and brief notes highlighting observations in some of the tables. Please note that some tables may contain data on persons, households, or vehicles, which are expressed in thousands (000), as well as data on trips and travel, which are expressed in millions (000,000).

NPTS Survey

The NPTS obtains data on travel patterns by collecting information on all trips taken by the respondent on a specific day (known as "travel day"), combined with longer trips taken over a 2-week period (known as "travel period"). The respondent's travel is collected in several other sections of the survey, i.e.:

- each licensed driver is asked for an estimate of miles driven in the past 12 months, including miles driven in any vehicle;
- the respondent, or another adult household member, is asked for an estimate of the miles that each household vehicle was driven over the past 12 months, including miles driven by all drivers.

Therefore, one can estimate annual vehicle travel based on information from trips taken during the travel day, trips taken during the travel day and travel period, the driver's estimate of annual miles, or the estimate of annual miles that each household vehicle was driven. These multiple sources of data within the survey have caused confusion

² "1990 Nationwide Personal Transportation Survey: Early Results," Federal Highway Administration, U.S. Department of Transportation, August 1991.

for users of the NPTS data in the past. Accordingly, each table in this report lists the source of the data within the NPTS.

This report uses data from previous NPTS surveys, conducted in 1969, 1977, and 1983, to compare with 1990 NPTS results. For compatibility with previous survey data, all tables are based only on trips taken during travel day, except those tables using the annual estimates of the driver or vehicle (see bullets above). When comparing statistics from one NPTS survey year to the next, be aware that terminology, survey procedures, and target population used in the 1990 survey differ somewhat from the 1969, 1977, and 1983 surveys. The 1990 NPTS is different in several major aspects.²

1. The 1990 survey was a telephone survey while the earlier surveys were home interviews.
2. The 1990 survey was based on a random digit dialing (RDD) telephone number sample while the earlier surveys used household address samples.
3. The 1990 survey allowed a household member (proxy) to report another household member's trips if that household member could not be contacted, while the earlier surveys did not allow this practice. This type of

proxy interview occurred approximately 25% of the time in the 1990 survey. The trips and travel reported by proxies accounted for 11.4% of the total vehicle trips and 15.1% of the total vehicle miles of travel.

4. The sample size of each survey varied considerably; 15,000 households for the 1969 survey; 18,000 for 1977; 6,500 for 1983; and 22,000 for 1990.
5. Certain trips were included in the 1977, 1983, and 1990 surveys which were not included in the 1969 survey. These trips that were not collected in 1969 were walk and bicycle trips, and vehicle trips by pickup, other truck, motorcycle, moped, and recreational vehicle.
6. The 1990 survey data were edited during the data collection process by using a computer-aided telephone interview (CATI) technique while data from the earlier surveys were edited after the interview. The advantage of CATI over the conventional home interview is that many data inconsistencies and data quality problems can be identified during the interview and corrected immediately, instead of data being imputed, edited, or missing after the interview was completed.

Other 1990 NPTS Reports

No attempt is made in this report to present all of the data nor to analyze and discuss the data in any depth. More detailed and comprehensive results of the 1990 NPTS will be presented in later reports in the series. Currently, three additional NPTS reports are envisioned, and there is a possibility of more reports in specific subject areas. The three reports are:

- a comprehensive report of 1990 NPTS results providing more detailed data on the topics presented in this summary as well as other topics;
- a detailed discussion of current issues in personal travel using the NPTS data and other national transportation surveys;
- data tabulations and analysis of NPTS data on travel in urbanized areas.

For more information on the NPTS survey, contact:

Office of Highway Information
Management, HPM-40
Federal Highway Administration
Washington, D.C. 20590
Office: (202) 366-0160
Fax: (202) 366-7742

A public use tape and accompanying documentation for the 1990 NPTS are available for a fee by contacting:

Center for Transportation Information
DOT/Volpe National Transportation
Systems Center
Kendall Square
Cambridge, MA 02142
Office: (617) 494-2450
Fax: (617) 494-3633

SUMMARY OF TRAVEL TRENDS

TABLE 1

**Summary Statistics on Demographic Characteristics
and Total Travel
1969, 1977, 1983, and 1990 NPTS**

Percent Change

	1969	1977	1983	1990	69-90 ¹	69-90 ²
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 ³	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 ⁴	12 ⁴
LICENSED DRIVERS (000)						
All	102,986	127,552	147,015	163,025 ³	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 ³	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 VEHICLES⁵ (000)						
	72,500	120,098	143,714	165,221	4.0	128
HOUSEHOLD VEHICLE TRIPS (000,000)						
	87,284	108,826	126,874	158,927	2.9	82
HOUSEHOLD VMT (000,000)						
	775,940	907,603	1,002,139	1,409,600	2.9	82
PERSON TRIPS⁶ (000,000)						
	145,146	211,778	224,385	249,562	2.6	72
PERSON MILES OF TRAVEL⁶ (000,000)						
	1,404,137	1,879,215	1,946,662	2,315,300	2.4	65

Data source:
Household, person,
vehicle, and travel
day data.

¹ Compounded annual
rate of percent
change.

² Percentage change
rate.

³ Includes "don't
know" and
"refusals."

⁴ For years 1977 to
1990.

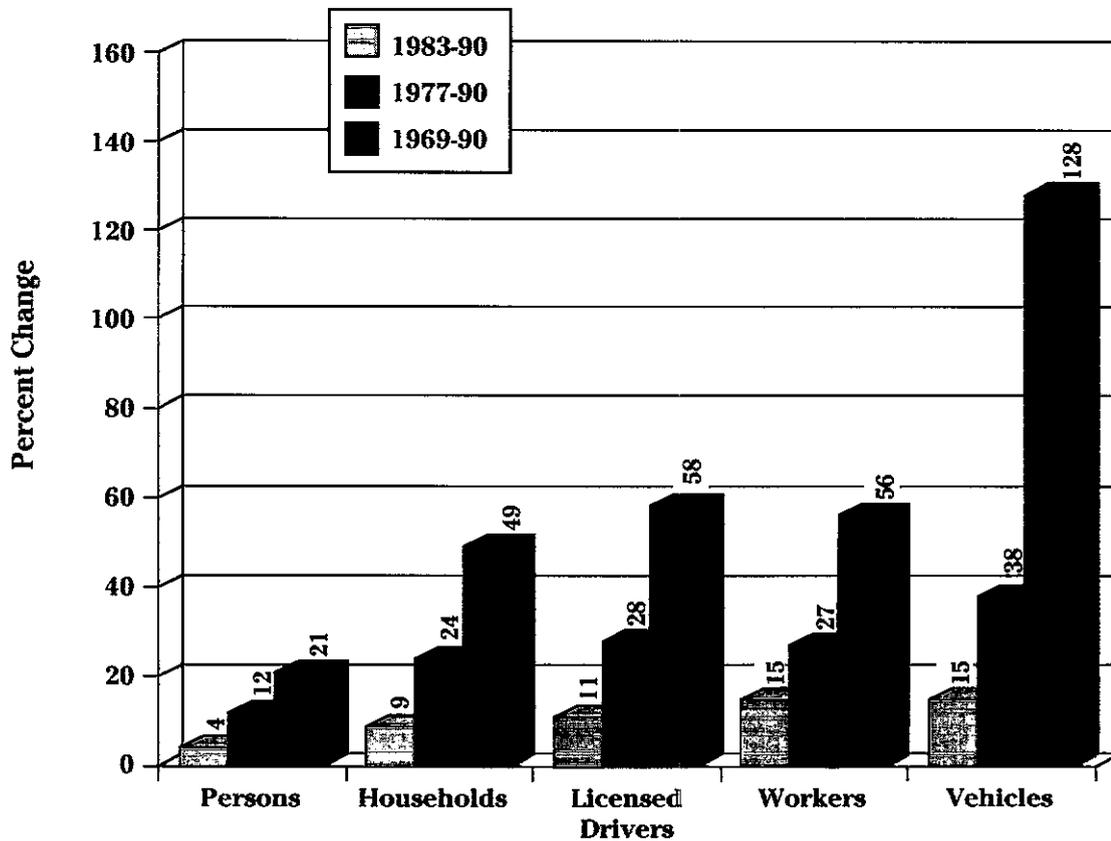
⁵ The 1969 survey
includes only
automobiles, station
wagons, and
vanbuses/minibuses
as household
vehicles.

⁶ The 1969 survey
does not include
walk and bicycle
trips.

Between 1969 and 1990 the number of households, drivers, workers, and vehicles grew at a much faster rate than the population.

FIGURE 1

Percent Change in Numbers of Individuals, Households, Drivers, Workers, and Vehicles 1969, 1977, 1983, and 1990 NPTS



Vehicles per household continued to increase despite steady decreases in household size. More daily trips and longer trip lengths resulted in a 29% increase (3.6% compounded annual increase) in daily household VMT from 1983 to 1990.

TABLE 2

**Summary Demographic and Travel Trends
1969, 1977, 1983, and 1990 NPTS**

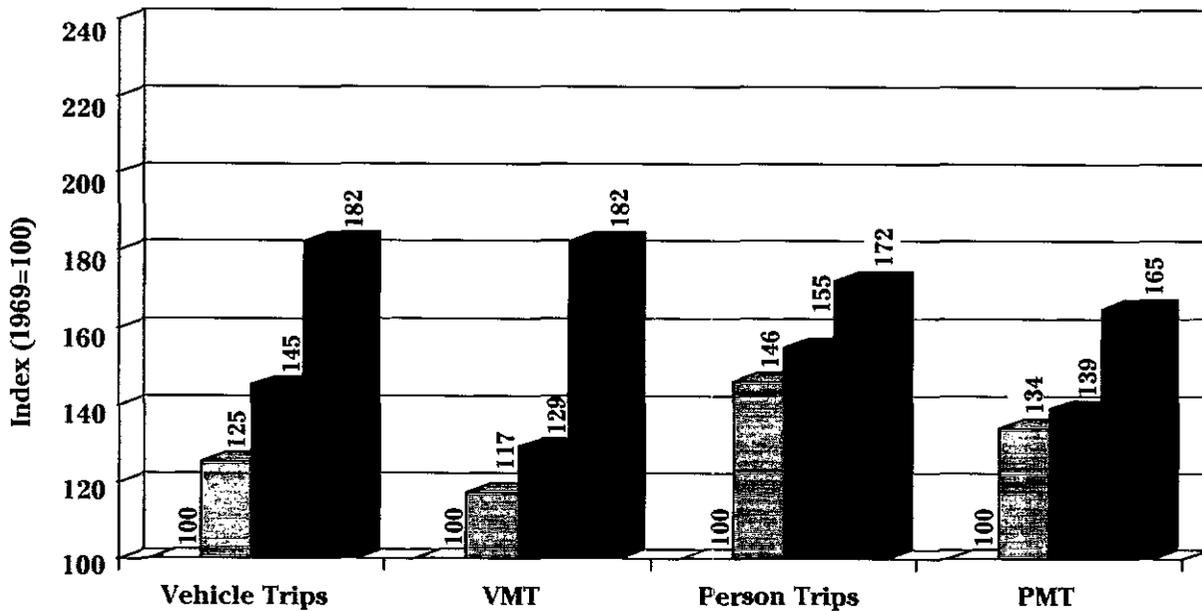
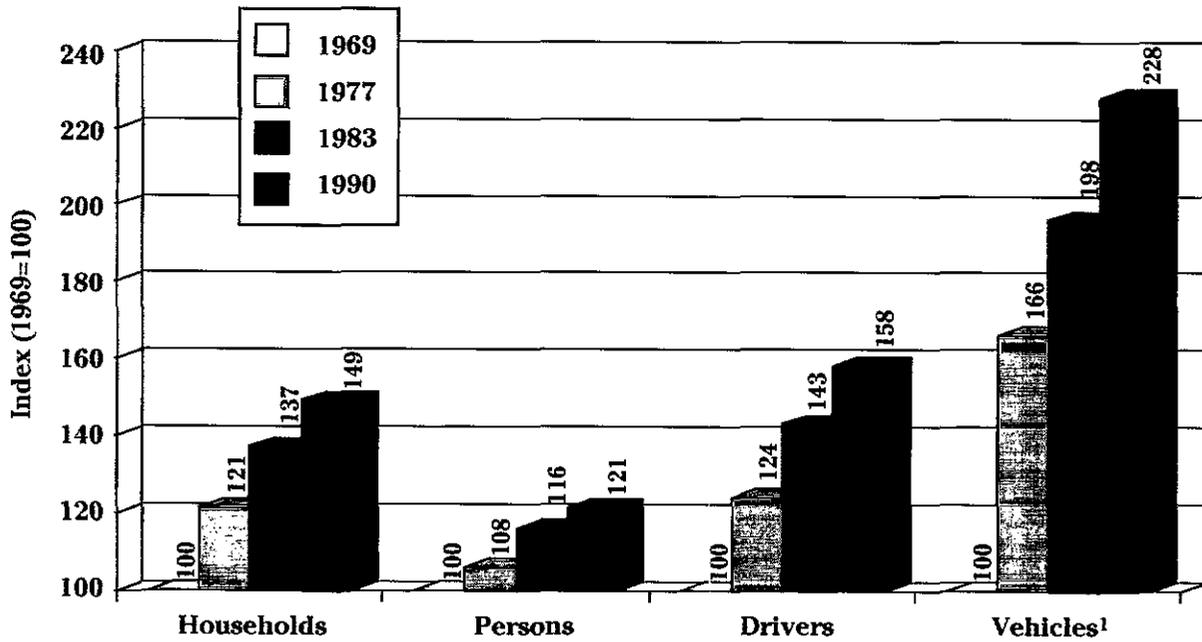
	1969 ¹	1977	1983	1990
Persons per household	3.16	2.83	2.69	2.56
Vehicles per household	1.16	1.59	1.68	1.77
Licensed drivers per household	1.65	1.69	1.72	1.75
Vehicles per licensed driver	0.70	0.94	0.98	1.01
Workers per household	1.21	1.23	1.21	1.27
Vehicles per worker	0.96	1.29	1.39	1.40
Daily vehicle trips per household	3.83	3.95	4.07	4.66
Daily VMT per household	34.01	32.97	32.16	41.37
Average vehicle trip length (miles)	8.89	8.34	7.90	8.87

Data source: Household, vehicle, and travel day data.

¹ The 1969 survey does not include pickups and other light trucks as household vehicles.

FIGURE 2

**Changes in Summary Demographic and Travel Patterns
1969, 1977, 1983, and 1990 NPTS**



¹ The 1969 survey does not include pickups and other light trucks as household vehicles.

Table 3 presents data from the NPTS and from other data sources. Given its project-specific goals, each data source has its own scope in terms of data collection method, target population, and data validation and estimation procedures. Therefore, comparison of NPTS data to data from other sources is informative but not conclusive.

Data on population and on the total number of households are estimated by the Bureau of the Census of the U.S. Department of Commerce as reported in the Statistical Abstract of the United States (110th edition, 1990, Washington, DC; and previous editions). Both NPTS and the Bureau of the Census measure the civilian, non-institutionalized population. 1990 data are from the 1990 Decennial Census.

Data on the number of licensed drivers are reported by the Federal Highway Administration of the U.S. Department of Transportation in its annual Highway Statistics (1990, Table DL-1A, p-28 and previous editions). Note that Highway Statistics shows the cumulative number of driver's licenses issued, whereas the NPTS estimates the number of people who hold a driver's license.

R.L. Polk and Company compiles annual data on the total number of vehicles in operation. While Polk's estimate includes all vehicles (personal or commercial), the NPTS' estimate includes all household-based vehicles but excludes most fleet vehicles.

TABLE 3**Comparison of Survey Variables
with Other Sources
(thousands)**

	1969		1977		1983		1990	
	Other Sources	NPTS	Other Sources	NPTS	Other Sources	NPTS	Other Sources	NPTS
Households ¹ (000)	61,806	62,504	74,142	75,412	83,918	85,371	91,947	93,347
Population ² (000)	199,145	197,213	218,106	213,141	232,086	229,453	247,826	239,416
Licensed Drivers ³ (000)	108,306	102,986	138,121	127,552	154,389	147,015	167,015	163,025
Vehicles ⁴ (000)	78,495	72,500 ⁵	128,196	120,098	147,104	143,714	179,299	165,221

¹⁻⁴ See page 10 for details.

⁵ The 1969 survey does not include pickups and other light trucks as household vehicles.

The percent of households without a vehicle dropped from 20.6% in 1969 to 9.2% in 1990, while the percent of households with three or more vehicles available quadrupled. Over the 1969 to 1990 period, the total number of households increased by 49% while the number of household vehicles increased by 128%.

TABLE 4

**Number of Households by Vehicles Available
1969, 1977, 1983, and 1990 NPTS
(thousands)**

Number of Vehicles Available	1969 ¹	1977	1983	1990	Percent Change	
					69-90 ²	69-90 ³
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
All Households	62,504	75,412	85,371	93,347	1.9	49
All 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

Data source: Household and vehicle data.

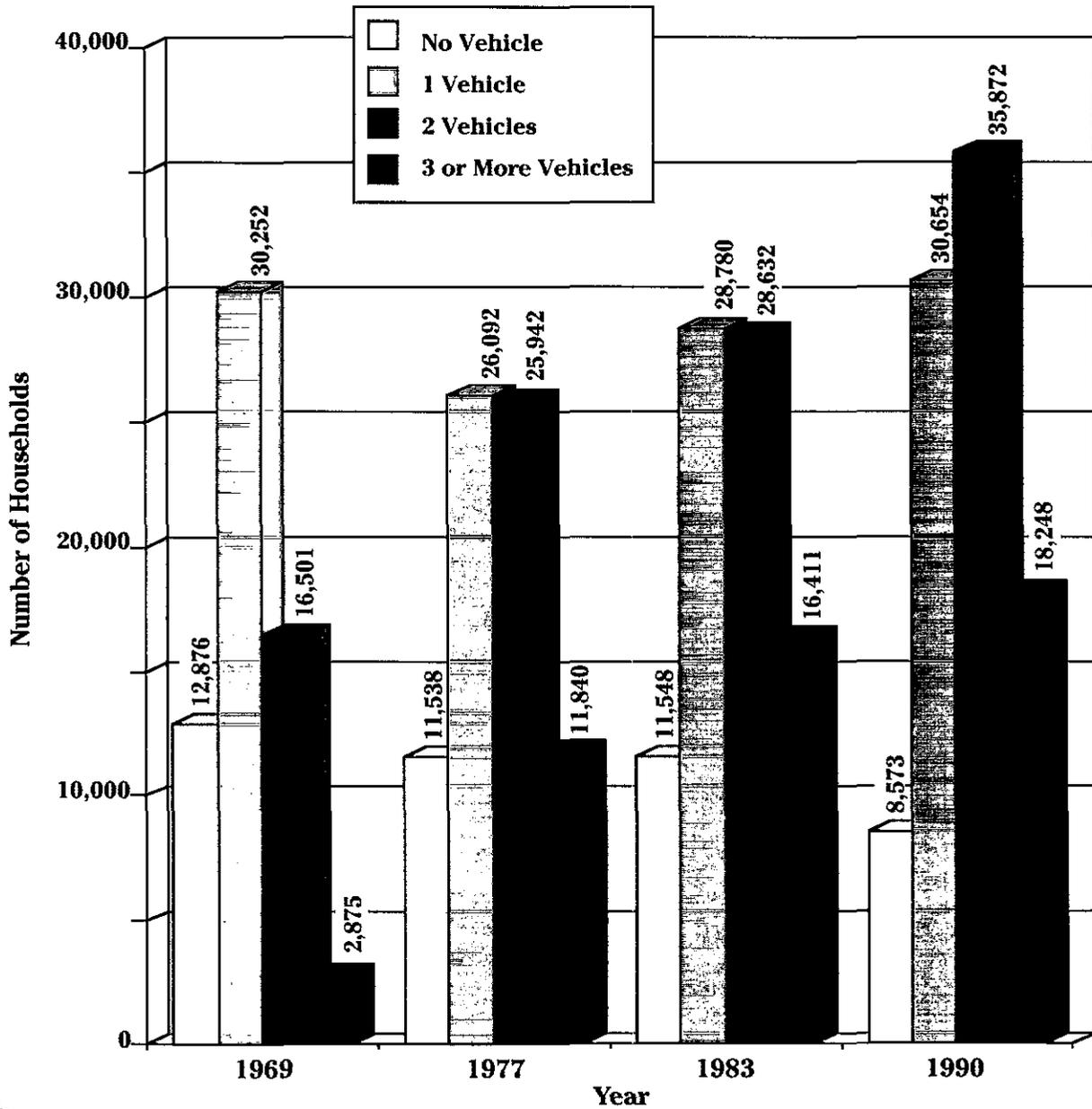
¹ The 1969 survey does not include pickups or other light trucks as household vehicles.

² Compounded annual rate of percentage change.

³ Percentage change rate.

FIGURE 3

**Number of Households by Number of Vehicles Available
1969, 1977, 1983, and 1990 NPTS**



Overall, the percentage of households that have at least one vehicle per adult increased. 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 percent and by 1990 it reached 76 percent.

TABLE 5

**Distribution of Households by
Number of Adults and Number of Vehicles Available
1969, 1977, 1983, and 1990 NPTS
(percentage)**

	1969 ¹	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

Data source: Household and vehicle data.

¹ The 1969 survey does not include pickups or other light trucks as household vehicles.

FIGURE 4

**Distribution of Households by Number of Adults
and Number of Vehicles Available
1969, 1977, 1983, and 1990 NPTS**

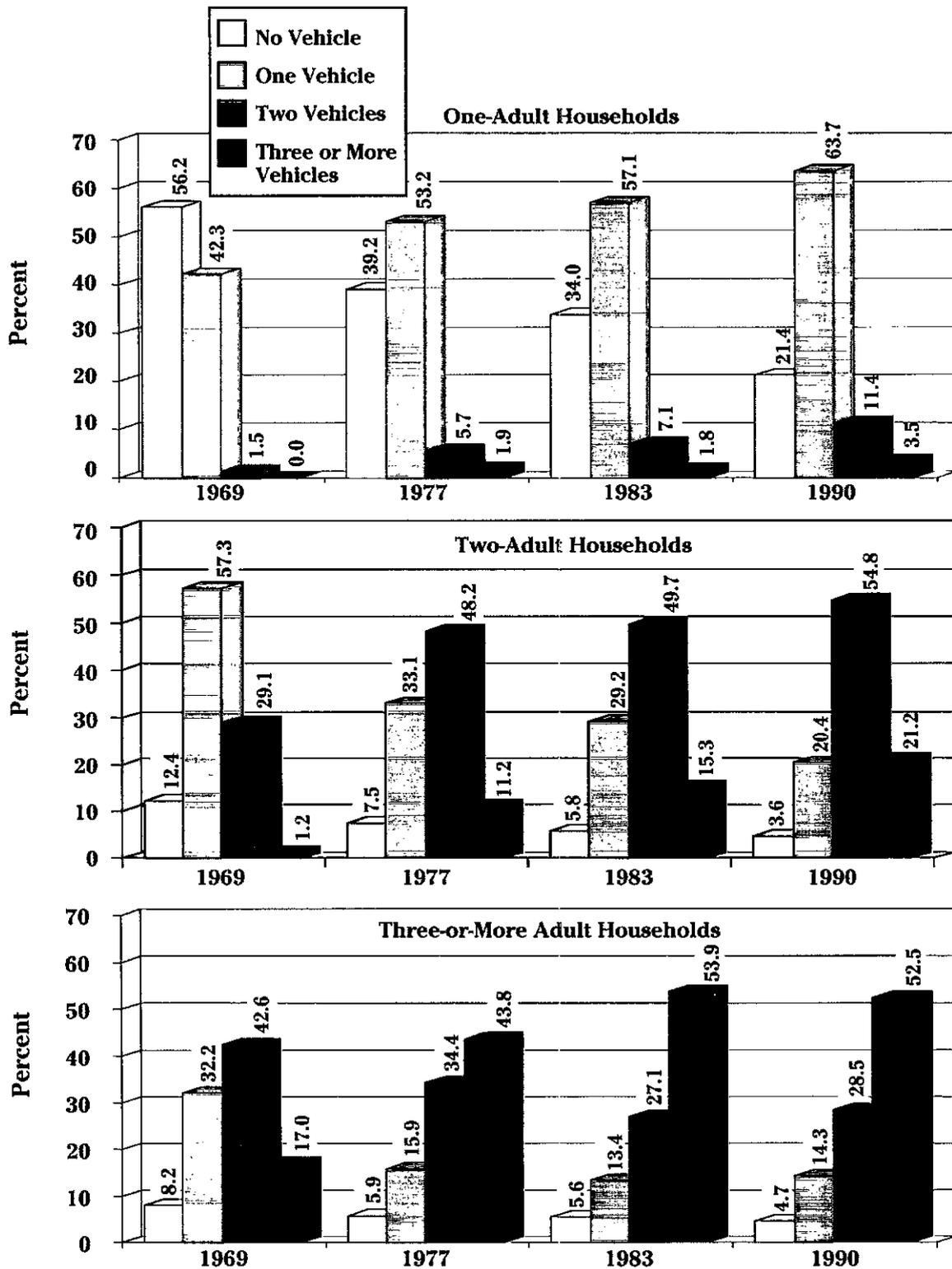


TABLE 6

**Distribution of Households by Number of
Licensed Drivers and Number of Vehicles Available¹
1969, 1977, 1983, and 1990 NPTS
(percentage)**

Household	1969 ²	1977	1983	1990
<i>NO LICENSED DRIVER</i>				
No vehicle	NA	NA	90.4	61.9
One vehicle	NA	NA	8.1	18.0
Two vehicles	NA	NA	1.2	14.1
Three or more vehicles	NA	NA	0.3	6.0
Total	NA	100.0	100.0	100.0
No. of Households (000)	NA	9,577	8,909	9,354
<i>ONE LICENSED DRIVER</i>				
No vehicle	15.6	9.6	11.2	6.3
One vehicle	79.2	67.8	70.6	59.4
Two vehicles	5.1	17.1	13.8	24.5
Three or more vehicles	0.1	5.5	4.4	9.8
Total	100.0	100.0	100.0	100.0
No. of Households (000)	NA	25,338	26,931	37,449

TABLE 6 (CONTINUED)

**Distribution of Households by Number of
Licensed Drivers and Number of Vehicles Available¹
1969, 1977, 1983, and 1990 NPTS
(percentage)**

Household	1969 ²	1977	1983	1990
TWO LICENSED DRIVERS				
No vehicle	2.3	1.1	1.2	0.9
One vehicle	52.5	24.1	22.0	16.5
Two vehicles	43.0	58.7	57.1	61.3
Three or more vehicles	2.2	16.1	19.7	21.3
Total	100.0	100.0	100.0	100.0
No. of Households (000)	NA	32,276	33,854	38,027
THREE OR MORE LICENSED DRIVERS				
No vehicle	0.8	0.4	0.1	1.1
One vehicle	17.2	5.7	4.6	5.0
Two vehicles	51.7	30.7	24.4	24.2
Three or more vehicles	30.3	63.2	70.9	69.7
Total	100.0	100.0	100.0	100.0
No. of Households (000)	NA	8,211	10,677	8,517

Data source: Household, person and vehicle data.

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

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

Both annual VMT and annual vehicle trips per household increased by 22 percent between 1969 and 1990. Work trips continued to account for the largest proportion of household travel, both in terms of miles and in number of trips. Average vehicle trip lengths, which had been decreasing from 1969 to 1983, showed increases in 1990. The largest increase in trip length was in work trips.

TABLE 7

**Average Annual VMT, Vehicle Trips and Trip Length
Per Household for Selected Trip Purposes
1969, 1977, 1983, and 1990 NPTS**

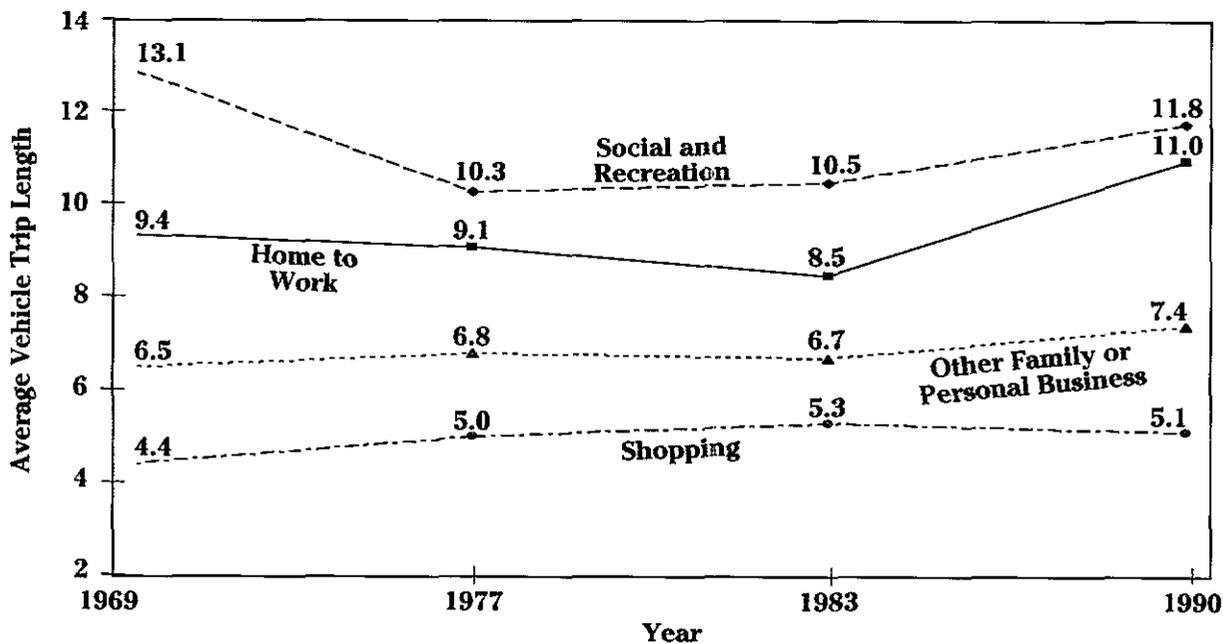
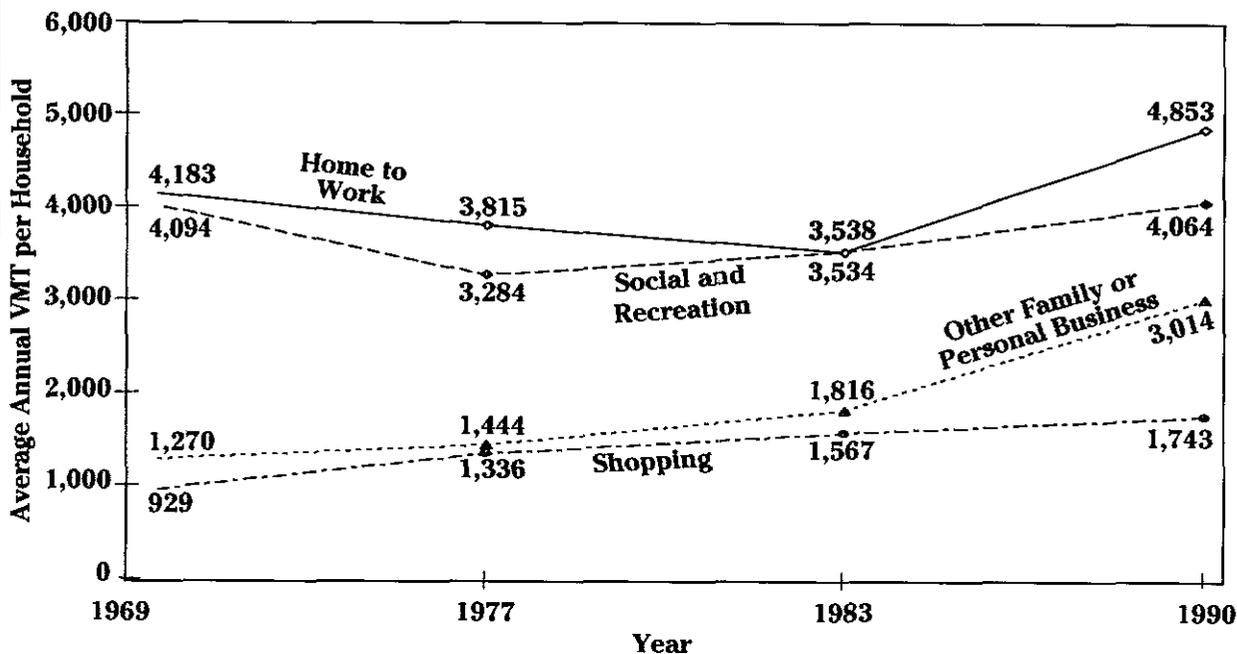
Trip Purpose	1969	1977	1983	1990	Percent Change 69-90
AVERAGE ANNUAL VMT					
Home to work	4,183	3,815	3,538	4,853	16
Shopping	929	1,336	1,567	1,743	88
Other family or personal business	1,270	1,444	1,816	3,014	137
Social and recreation	4,094	3,286	3,534	4,060	-1
All purposes¹	12,423	12,036	11,739	15,100	22
AVERAGE ANNUAL VEHICLE TRIPS					
Home to work	445	423	414	448	0.7
Shopping	213	268	297	345	62
Other family or personal business	195	215	272	411	111
Social and recreation	312	320	335	349	12
All purposes¹	1,396	1,442	1,486	1,702	22
AVERAGE VEHICLE TRIP LENGTH (MILES)					
Home to work	9.4	9.1	8.5	11.0	17
Shopping	4.4	5.0	5.3	5.1	16
Other family or personal business	6.5	6.8	6.7	7.4	14
Social and recreation	13.1	10.3	10.5	11.8	-10
All purposes¹	8.9	8.4	7.9	9.0	1

Data source: Travel Day data.

¹ Includes other purposes not shown above, such as trips to school, church, doctor, dentist, and work-related business trips.

FIGURE 5

**Household Vehicle Travel
for Selected Trip Purposes
1969, 1977, 1983, and 1990 NPTS**



From 1977 to 1990 the average vehicle occupancy, calculated as person miles per vehicle mile, declined steadily for commuting and shopping. Several factors contributed to the general decline in vehicle occupancy, including the increased number of vehicles per household and the decrease in average household size.

TABLE 8

**Average Vehicle Occupancy for Selected Trip Purposes
1977, 1983, and 1990 NPTS
(person miles per vehicle mile)**

Trip Purpose	1977	1983	1990	Percent Change	
				77-90 ¹	77-90 ²
Home to work	1.3	1.3	1.1	-1.3	-15
Shopping	2.1	1.8	1.7	-1.6	-19
Other family or personal business	2.0	1.8	1.8	-0.8	-10
Social and recreation	2.4	2.1	2.1	-1.0	-13
All Purposes³	1.9	1.7	1.6	-1.3	-16

Data source: Travel Day data.

¹ Compounded annual rate of percentage change.

² Percentage change rate.

³ Includes other purposes not shown above, such as trips to school, church, doctor, dentist, and work-related business trips.

FIGURE 6

**Average Vehicle Occupancy for
Selected Trip Purposes
1977, 1983, and 1990 NPTS
(person miles per vehicle mile)**

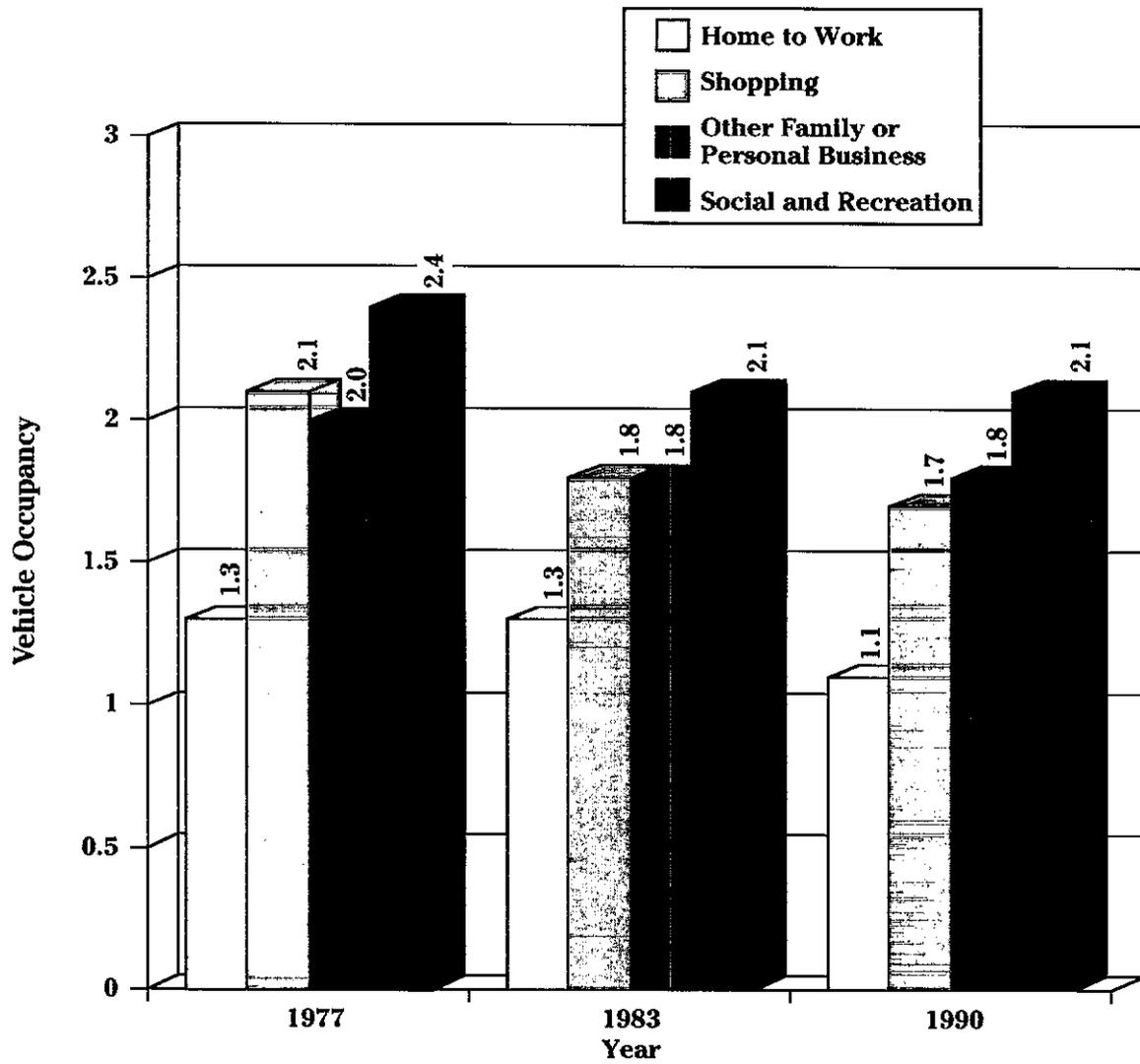


TABLE 9**Distribution of Journey-to-Work Trips by Usual Mode¹
1969, 1977, 1983, and 1990 NPTS
(percentage)**

Mode	1969	1977	1983	1990
Auto	82.7	80.5	77.6	91.4 ¹
Truck ²	8.1	12.5	14.8	—
Public Transit	8.4	4.7	5.8	5.5
Other	0.8 ³	2.3	1.8	3.1
Total	100.0	100.0	100.0	100.0

Data source: Person data.

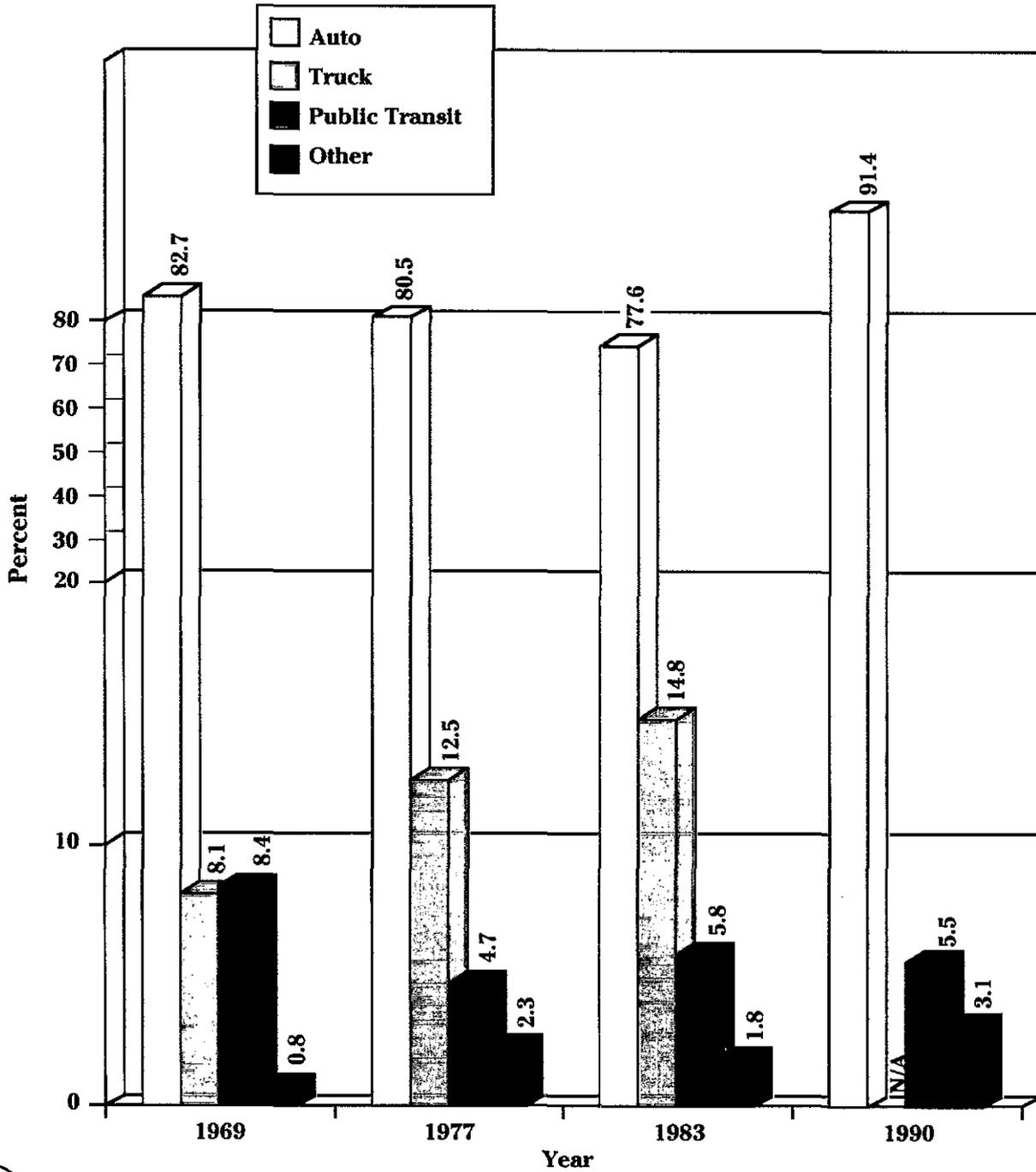
¹ Usual mode is defined as the means of transportation usually used to go to work during the week before the interview. Data in this table are derived from the person file. In the 1990 survey, automobile and truck are combined as a single mode in the person file.

² Household-based trucks, primarily pickups.

³ Excludes walk trips.

FIGURE 7

**Distribution of Journey-to-Work Trips by Usual Mode
1969, 1977, 1983, and 1990 NPTS**



The average commute trip length increased by 7% from 1983 to 1990, from 9.9 miles to 10.6 miles. Yet the commute time declined by 3% during the same period. This observation might be partially due to the fact that a greater number of suburban and exurban residential areas and employment centers were developed. The resulting commutes are longer but are travelled at faster speeds. The decline in travel time is also influenced by changes in commuting modes, with a decrease in transit and carpooling and an increase in driving alone.

TABLE 10

**Commuting Patterns of Home-to-Work Trip by Mode
1969, 1977, 1983, and 1990 NPTS**

Mode	1969	1977	1983	1990	Percent Change	
					69-90 ¹	69-90 ²
AVERAGE COMMUTE TRIP DISTANCE (MILES)						
Auto	9.4	9.2	9.9	10.4	0.5	11
Truck ³	14.2	10.6	11.4	13.0	-0.4	-8
Bus	8.7	7.2	8.6	9.3	0.3	7
ALL	9.9	9.2	9.9	10.6	0.3	7
AVERAGE COMMUTE TRAVEL TIME (MINUTES)						
ALL	22	20.4	20.4	19.7	-0.5	-10

Data source: 1969-1983 data are from person data on the "usual" work-trip.
1990 data are from travel day data. In the 1990 survey trip distance and time were from the travel day data because this information was not collected for the "usual" work trip.

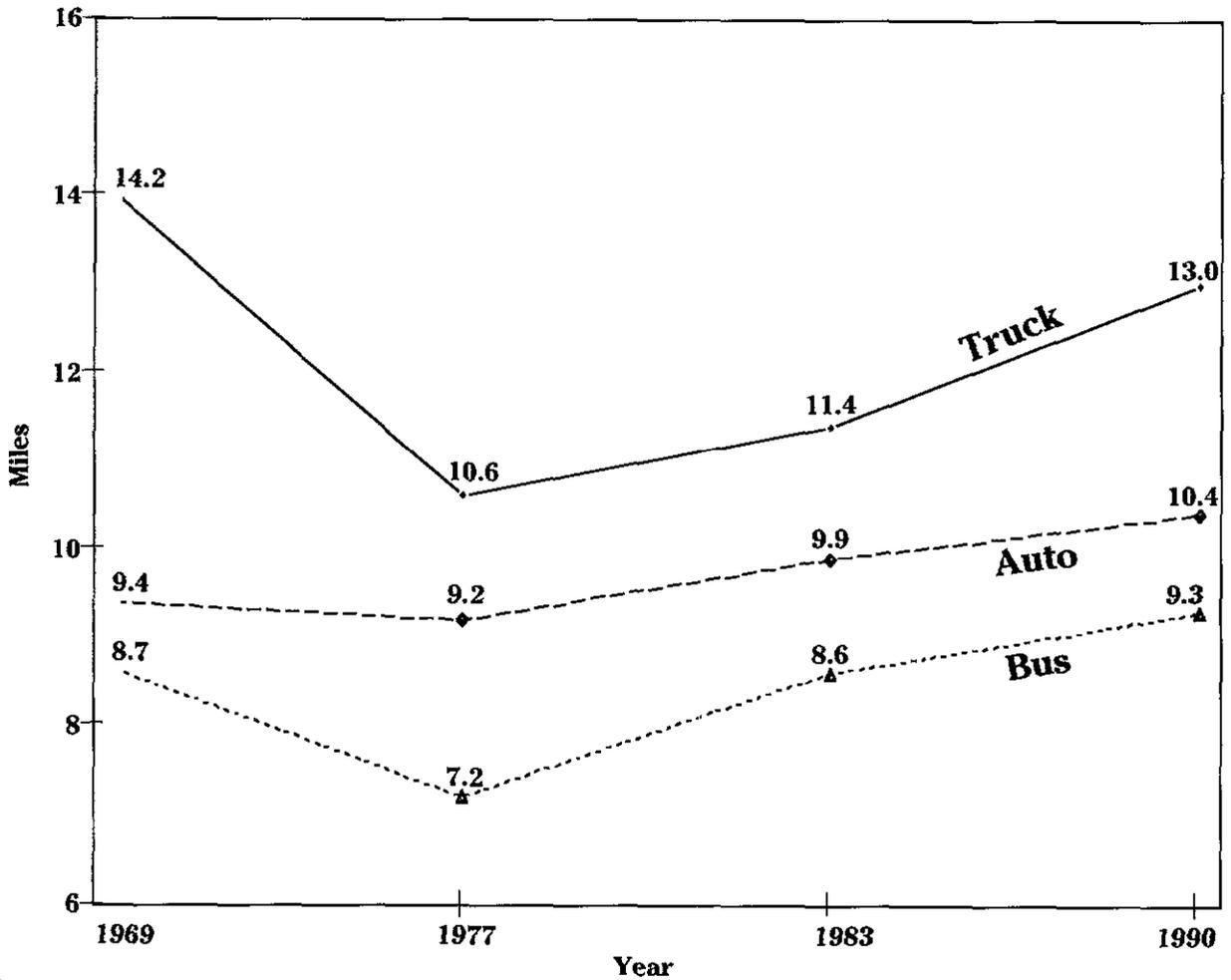
¹ Compounded annual rate of percentage change.

² Percentage change rate.

³ Household-based trucks, primarily pickups. Data in this table are derived from the travel day file which categorizes truck as a separate mode.

FIGURE 8

**Average Commute Trip Distance for Selected Modes
1969, 1977, 1983, and 1990 NPTS**



While 41.8% 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 vehicles (both cars and trucks) for a longer period of time. The percent of household automobiles that were 10 or more years old increased from 6.2 in 1969 to 29.9 by 1990.

TABLE 11

**Distribution of Vehicles by Vehicle Age
1969, 1977, 1983, and 1990 NPTS
(percentage)**

Vehicle Age (years)	1969 ¹	1977			1983			1990		
		Truck			Truck			Truck		
		Auto	/Van	All	Auto	/Van	All	Auto	/Van	All
0 - 2	41.8	27.3	29.9	27.8	20.0	16.6	19.2	15.6	19.7	16.6
3 - 5	31.9	30.4	25.6	29.6	28.0	26.6	27.6	27.7	27.2	27.5
6 - 9	20.1	26.7	21.1	25.7	27.4	25.0	26.9	26.8	20.9	25.3
10 or more	6.2	15.6	23.4	16.9	24.6	31.8	26.3	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	6.7	7.8	6.9	7.6	8.0	7.7

Data source: Vehicle data.

¹The 1969 survey does not include pickups and other light trucks as household vehicles.

FIGURE 9

**Distribution of Automobiles by Vehicle Age
1977, 1983, and 1990 NPTS**

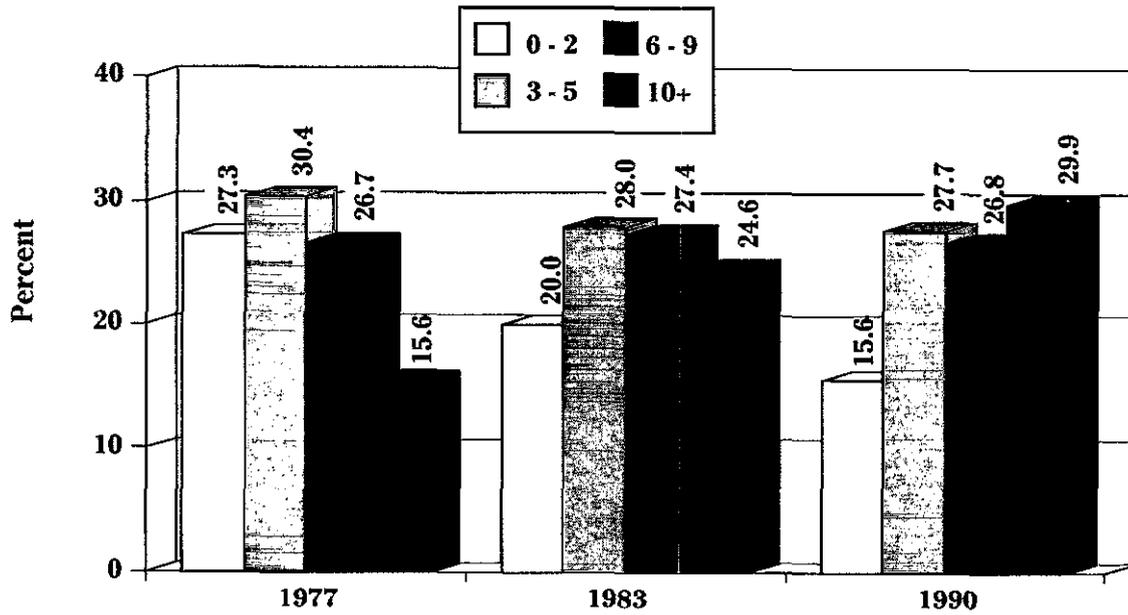
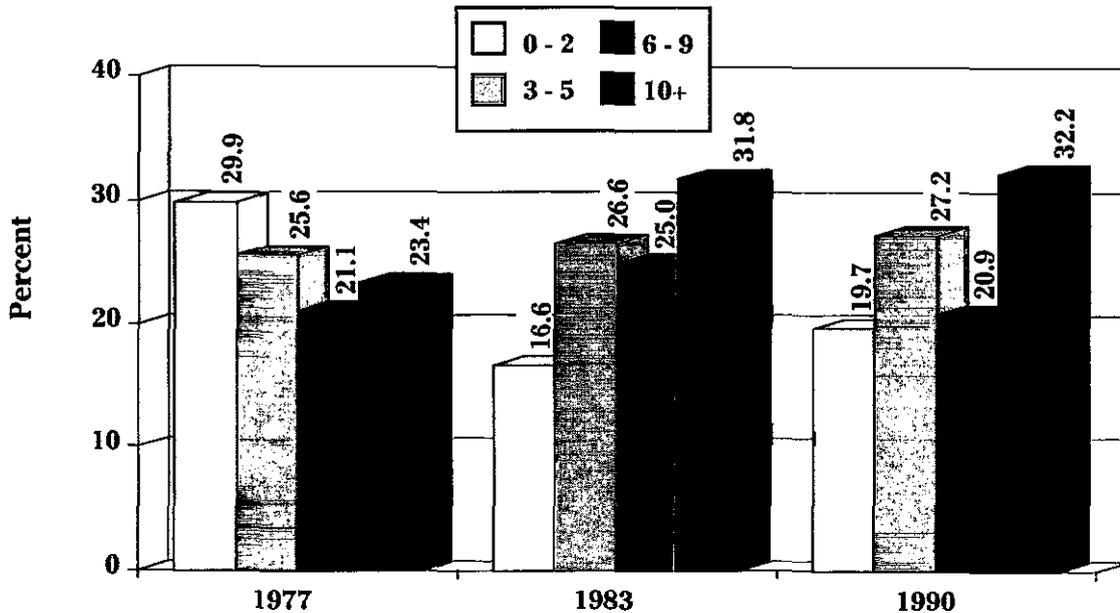


FIGURE 10

**Distribution of Household-Based Trucks by Vehicle Age
1977, 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 numbers of adult groups (Tables 13 and 14).

TABLE 12

**Average Annual Miles per Vehicle by Vehicle Age
1969, 1977, 1983, and 1990 NPTS**

Vehicle Age (years)	1969	1977	1983	1990	Percent Change	
					69-90 ¹	69-90 ²
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
Average³	11,600	10,679	10,315	12,458	0.3	7

Data source: Owner's annual estimate of miles driven per vehicle, including mileage driven by all drivers.

¹ Compounded annual rate of percent change.

² Percentage change rate.

³ Includes "don't know" and "refusals."

FIGURE 11

**Average Annual Miles per Vehicle by Vehicle Age
1969, 1977, 1983, and 1990 NPTS**

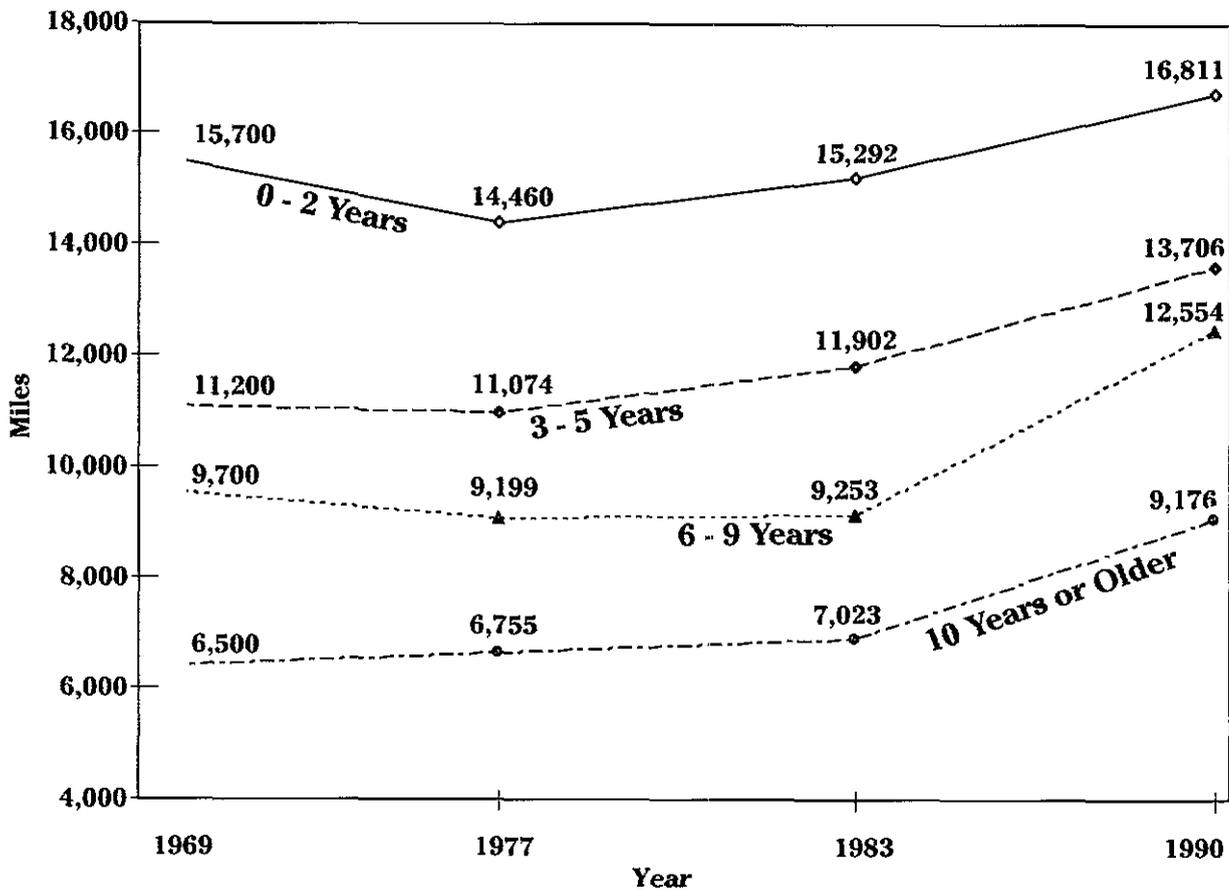


TABLE 13

**Average Annual Miles per Vehicle by Number of Vehicles Available
1969, 1977, 1983, and 1990 NPTS**

Number of Vehicles	1969 ¹	1977	1983	1990	Percent Change	
					69-90 ²	69-90 ³
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

Data source: Owner's annual estimate of miles driven per vehicle, including mileage driven by all drivers.

¹ The 1969 survey does not include pickups or other light trucks as household vehicles.

² Compounded annual rate of percentage change.

³ Percentage change rate.

FIGURE 12

**Average Annual Miles per Vehicle by
Number of Vehicles Available
1969, 1977, 1983, and 1990 NPTS**

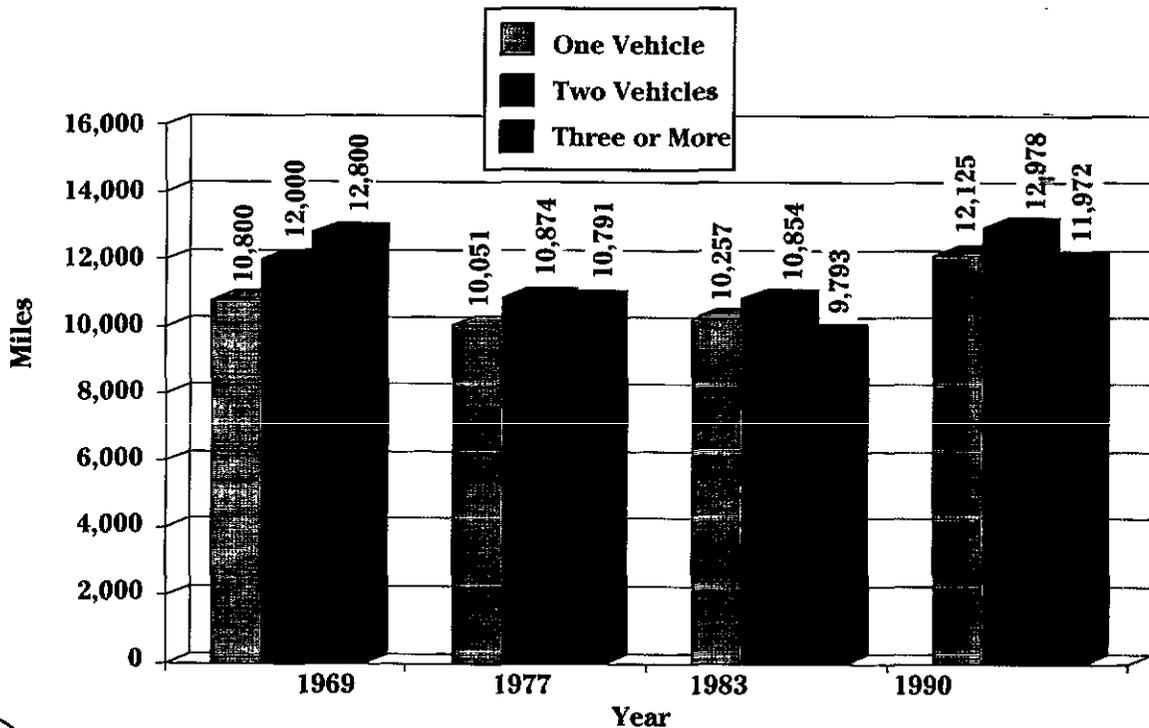


FIGURE 13

**Average Annual Miles per Vehicle by
Number of Adults in Household
1977, 1983, and 1990 NPTS**

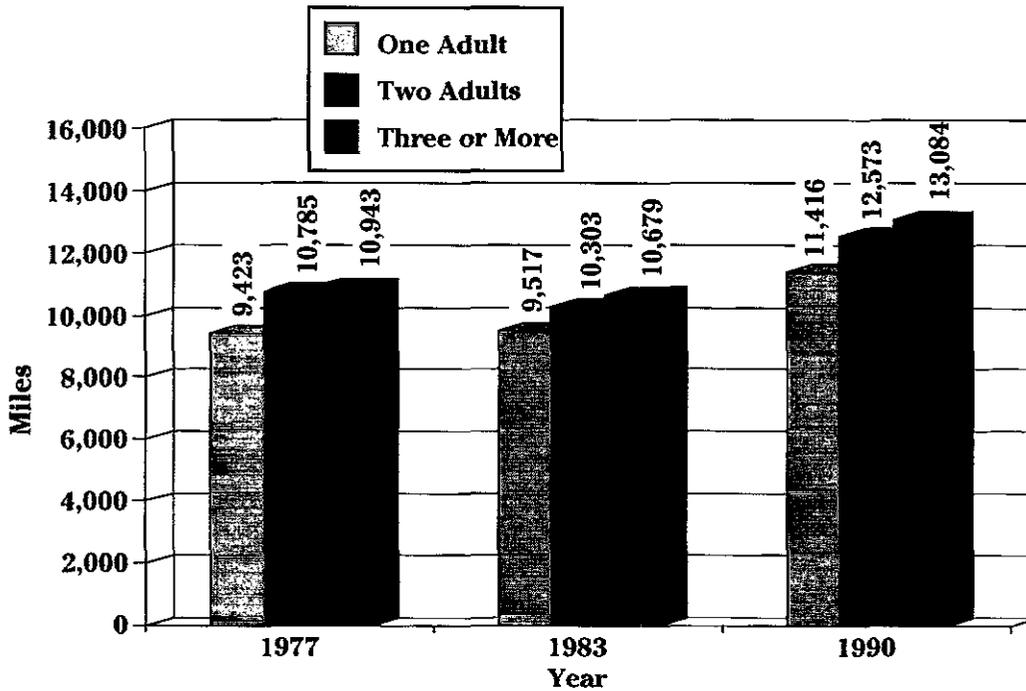


TABLE 14

**Average Annual Miles per Vehicle by
Number of Adults in Household
1977, 1983, and 1990 NPTS**

Number of Adults	1977	1983	1990	Percent Change	
				77-90 ¹	77-90 ²
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
All	10,679	10,315	12,458	1.2	17

Data source: Owner's annual estimate of miles driven per vehicle, including mileage driven by all drivers.

¹ Compounded annual rate of percentage change.

² Percentage change rate.

TABLE 15

**Average Annual Miles per Vehicle by
Number of Adults in Household and Number of
Vehicles Available¹
1983 and 1990 NPTS**

Household	1983	1990	Percent Change
			<u>83-90</u>
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
All	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
All	10,303	12,573	22

TABLE 15 (CONTINUED)

**Average Annual Miles per Vehicle by
Number of Adults in Household and Number of
Vehicles Available¹
1983 and 1990 NPTS**

Household	1983	1990	Percent Change
			83-90
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
All	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
All	11,034	13,378	21
AVERAGE			
	10,315	12,458	21

Data source: Owner's annual estimate of miles driven per vehicle, including mileage driven by all drivers.

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

The number of person trips increased 58% from 1969 to 1990, while the number by auto, van, and truck increased by 64% over the same time.

TABLE 16

**Annual Person Trips by Means of Transportation¹
1969, 1977, 1983, and 1990 NPTS
(millions)**

Mode	1969	1977	1983	1990	Percent Change	
					69-90 ²	69-90 ³
Auto & van	123,519	149,597	167,736	189,526	2.1	53
Truck ⁴	8,128	17,589	23,874	27,006	5.9	232
Subtotal - auto, van, truck	131,647	167,186	191,610	216,532	2.4	64
School bus	7,112	5,984	6,174	6,092	-0.7	-14
Public transit	4,935	4,896	5,531	4,947	0.0	0.2
Other ⁵	1,451	3,264	2,496	2,012	1.6	39
All¹	145,145	181,330	205,811	229,583	2.2	58

Data source: Travel Day data

¹ Excludes walking and bicycle trips and trips made by persons under 5 years old.

² Compounded annual rate of percentage change.

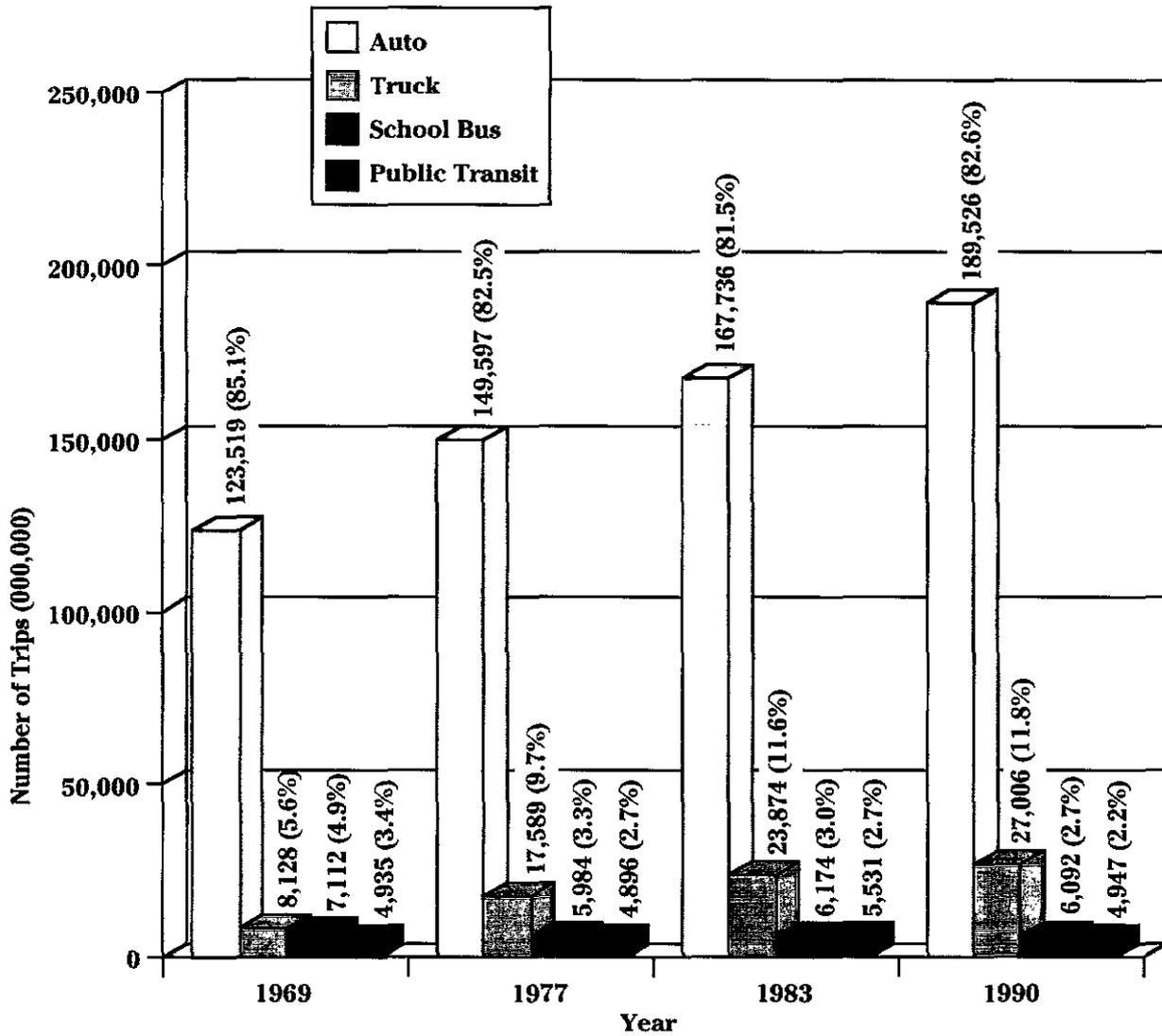
³ Percentage change rate.

⁴ Household-based trucks, primarily pickups.

⁵ Includes trips made by motorcycle, moped, other private vehicle, and taxi.

FIGURE 14

**Number of Person Trips for Selected Means of Transportation
1969, 1977, 1983, and 1990 NPTS
(millions)**



From 1983 to 1990, travel by women has increased greatly, from 6,382 annual miles per female driver in 1983 to 9,528 miles in 1990 – a 49 percent change. This increase can be explained partially by the increases in both female drivers and female workers during the same period. Male drivers also increased their driving, but not as dramatically as female drivers. The amount of annual travel increased for all age groups, for both females and males, with the largest increase being for drivers between 16 and 19 years old.

TABLE 17

**Average Annual Miles per Licensed Driver by Driver Age and Sex
1969, 1977, 1983, and 1990 NPTS
(miles)**

Age	1969	1977	1983	1990	Percent Change	
					69-90 ¹	69-90 ²
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

Data source: Driver's estimate of annual miles driven, including driving in all vehicles (personal and commercial).

¹ Compounded annual rate of percentage change.

² Percentage change rate.

FIGURE 15

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

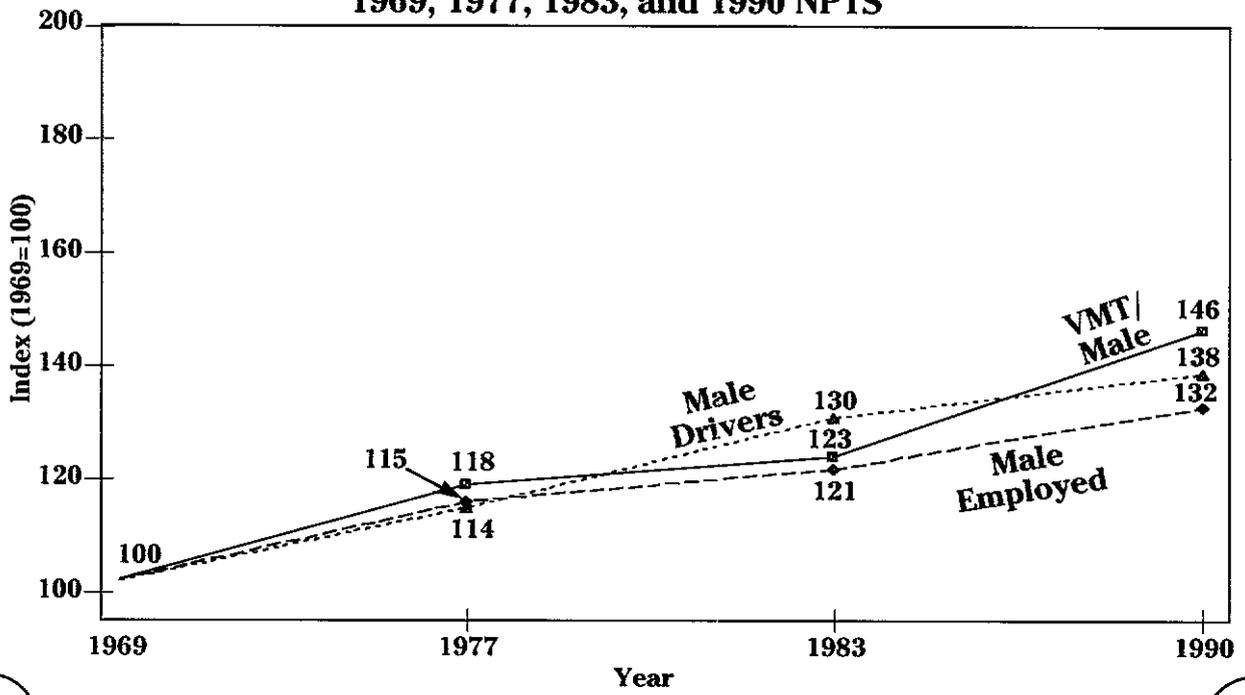
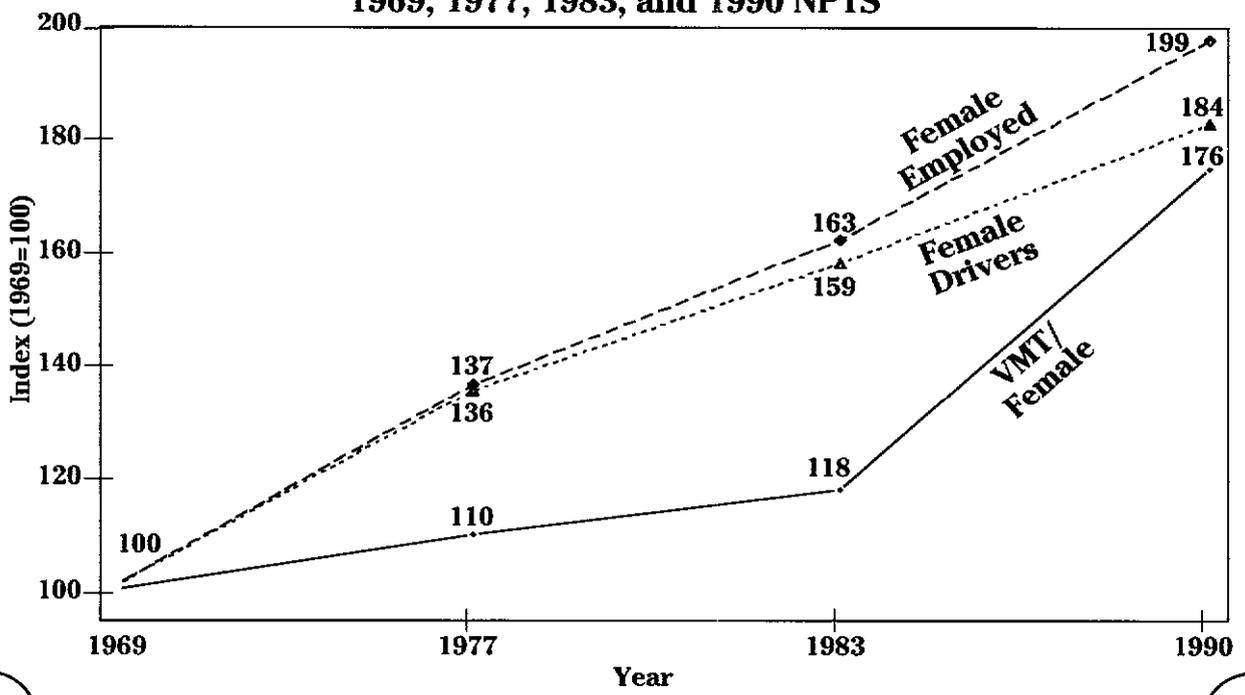


FIGURE 16

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





Although travel by males still accounts for a majority of total travel, travel by females continues to increase. A significant jump in the share of travel by females was observed in the past 20 years – from 26.8% in 1969 to 35.4% in 1990. From 1983 to 1990, the share of travel by males, regardless of age group, either remained relatively constant or decreased. By contrast, travel by females increased across all age groups, except for the 55 to 64 age group.

TABLE 18**Distribution of Estimated Annual Miles by
Driver Age and Sex
1969, 1977, 1983, and 1990 NPTS
(percentage)**

Age	1969	1977	1983	1990
MALE				
16 - 19	3.1	3.2	2.0	2.0
20 - 34	27.0	29.7	28.6	24.3
35 - 54	30.1	27.2	27.0	27.1
55 - 64	9.3	8.5	9.3	6.8
65+	3.7	3.7	3.8	4.4
Total	73.2	72.3	70.7	64.6
FEMALE				
16 - 19	1.5	1.6	1.1	1.5
20 - 34	9.9	11.9	12.4	14.6
35 - 54	11.3	10.1	10.9	14.3
55 - 64	2.9	2.8	3.4	2.9
65+	1.2	1.3	1.5	2.1
Total	26.8	27.7	29.3	35.4

Data source: Driver's estimate of annual miles driven, including driving in all vehicles (personal and commercial).

TABLE 19

**Person Trips by Mode and Purpose
1983 and 1990 NPTS
(millions)**

Purpose	Mode						Total	
	Private		Public		Other ¹		1983	1990
	1983	1990	1983	1990	1983	1990		
Earning a living	44,560 (87.1%)	49,116 (91.2%)	2,302 (4.5%)	2,100 (3.9%)	4,298 (8.4%)	2,639 (4.9%)	51,160 (100.0%)	53,855 (100.0%)
Family & personal business	70,020 (87.9%)	96,061 (92.6%)	876 (1.1%)	1,006 (1.0%)	8,762 (11.0%)	6,626 (6.4%)	79,658 (100.0%)	103,693 (100.0%)
Civic, educational & religious	14,800 (55.9%)	17,564 (61.9%)	1,244 (4.7%)	1,075 (3.8%)	10,433 (39.4%)	9,736 (34.3%)	26,477 (100.0%)	28,375 (100.0%)
Social & recreational	50,287 (81.2%)	53,348 (86.3%)	991 (1.6%)	742 (1.2%)	10,652 (17.2%)	7,727 (12.5%)	61,930 (100.0%)	61,817 (100.0%)
Other	4,319 (83.7%)	1,483 (81.4%)	41 (0.8%)	35 (1.9%)	800 (15.5%)	304 (16.7%)	5,160 (100.0%)	1,822 (100.0%)
All purposes	183,986 (82.0%)	217,572 (87.2%)	5,454 (2.4%)	4,958 (2.0%)	34,945 (15.6%)	27,032 (10.8%)	224,385 (100.0%)	249,562 (100.0%)

Data source: Travel Day data.

¹ Includes trips by bicycle, walking, school bus, taxi, airplane, Amtrak, moped and other modes.

In 1990, females took 17% more trips than in 1983. This overall increase was primarily due to the increase in the number of trips for family and personal business and work-related business. The number of trips taken by females for family and personal business grew by 37% from 1983 to 1990. During the same period, increased employment outside the household caused females to take 16% more work-related trips. Similar to the pattern for the overall population, females took more trips in private vehicles in 1990 than in 1983.

TABLE 20

**Person Trips Taken by Women by Mode and Purpose
1983 and 1990 NPTS
(millions)**

Purpose	Mode							
	Private		Public		Other ¹		Total	
	1983	1990	1983	1990	1983	1990	1983	1990
Earning a living	18,200 (87.2%)	21,900 (90.8%)	1,250 (6.0%)	1,011 (4.2%)	1,414 (6.8%)	1,204 (5.0%)	20,864 (100.0%)	24,115 (100.0%)
Family & personal business	40,000 (91.0%)	55,600 (92.6%)	476 (1.1%)	656 (1.1%)	3,475 (7.9%)	3,771 (6.3%)	43,951 (100.0%)	60,027 (100.0%)
Civic, educational & religious	8,172 (57.6%)	10,000 (65.4%)	720 (5.1%)	627 (4.1%)	5,296 (37.3%)	4,660 (30.5%)	14,188 (100.0%)	15,287 (100.0%)
Social & recreational	26,300 (85.4%)	27,200 (86.5%)	428 (1.4%)	384 (1.2%)	4,074 (13.2%)	3,851 (12.3%)	30,802 (100.0%)	31,435 (100.0%)
Other	2,276 (84.0%)	791 (83.8%)	48 (1.8%)	8 (0.8%)	385 (14.2%)	145 (15.4%)	2,709 (100.0%)	944 (100.0%)
All purposes	94,948 (84.4%)	115,491 (87.6%)	2,922 (2.6%)	2,686 (2.0%)	14,644 (13.0%)	13,631 (10.3%)	112,514 (100.0%)	131,808 (100.0%)

Data source: Travel Day data.

¹ Includes trips by bicycle, walking, school bus, taxi, airplane, Amtrak, moped and other modes.

Individuals 65 years and older took 6% more trips in 1990 than in 1983. This rate of increase is similar to the one observed in the overall population (6.6%).

However, the average trip length by individuals 65 and older has increased from 6.7 miles in 1983 to 8.0 miles in 1990 – a 19% increase, which is significantly higher than the 9.2% increase observed in the overall population. The increased number of trips and trip lengths have resulted in an increase of 26% in average annual person miles of travel by individuals 65 years and older.

TABLE 21

**Travel by Individuals 65 Years and Older Compared to All Age Groups
1983 and 1990 NPTS**

Age	Average Annual Person Trips			Average Annual Person Miles of Travel			Average Trip Length		
	1983	1990	Percent Change ¹	1983	1990	Percent Change ¹	1983	1990	Percent Change ¹
65 and older	672.3	713.5	6.1	4,447.5	5,596.4	25.8	6.7	8.0	19.4
All ages	977.9	1,042.4	6.6	8,483.9	9,670.6	14.0	8.7	9.5	9.2

Data source: Travel Day data.

¹ Percentage change rate.

GLOSSARY AND ABBREVIATIONS

ADULT

A person 16 years and older.

HOUSEHOLD

A group of persons whose usual place of residence is a specific housing unit. These persons may or may not be related to each other. The total of all U.S. households represents the total civilian, non-institutionalized population. This category does not include group quarters (i.e., 10 or more persons living together, none of whom are related).

HOUSEHOLD VEHICLE

A motorized vehicle that is owned, leased, rented, company-owned, or available under some other arrangement, such as borrowed. The vehicle must be available to be used regularly by household members during the travel period. Also included are vehicles used solely for business purposes or business-owned vehicles if kept at home and used for the home to work trip, (e.g., taxicabs, police cars, etc.) which may be owned by, or assigned to, household members for their regular use. Vehicles that were owned or available for use by members of the household during the travel period even though a vehicle may have been sold before the interview are also included. Excluded from this category are vehicles that were not working and not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

JOURNEY-TO-WORK

Includes travel to or from a place where

one reports for work. Does not include any other work-related travel.

MEANS OF TRANSPORTATION

A mode used for going from one place (origin) to another (destination). Included are private and public modes, as well as walking. For all travel day trips, each change of mode constitutes a separate trip. The following transportation modes, grouped by major mode, are included:

Private Vehicle

- **Automobile**

A licensed motorized vehicle, including cars, jeeps, and station wagons.

- **Van**

Vans and minivans designed to carry passengers or to haul cargo.

- **Pickup Truck**

A motorized vehicle with an enclosed cab that usually accommodates two to three passengers and an open cargo area in the rear. Pickup trucks usually have about the same wheelbase as a full-size station wagon.

- **Other Truck**

All trucks other than pickups (such as dump trucks and trailer trucks).

- **RV or Motor Home**

Includes self-powered recreational vehicles that are operated as a unit without being towed by another vehicle.

- **Motorcycle**
Includes large, medium, and small motorcycles. Does not include minibikes, which cannot be licensed for highway use.

Public Transportation

- **Bus**
Includes intercity buses, mass transit systems, buses, and shuttle buses that are available to the general public. Also included are Dial-A-Bus and Senior Citizen buses that are available to the public. Excluded from this category are (1) shuttle buses operated by a government agency or private industry for the convenience of employees, or (2) contracted or chartered buses or school buses.
- **Commuter Train**
Includes local and commuter train service other than elevated rail and subway. Intercity service by Amtrak is excluded.
- **Streetcar/Trolley**
Includes trolleys, streetcars, and cable cars.
- **Elevated Rail/Subway**
Includes elevated rail and subway trains.

Other Modes

- **Airplane**
Includes commercial airplanes and smaller planes that are available for use by the general public in

exchange for a fare. Private planes and helicopters are included under "other."

- **Taxi**
The use of a taxicab by a passenger for a fare. Also included are airport limousines.
- **Bicycle**
Includes bicycles of all speeds and sizes that do not have a motor.
- **Amtrak**
The U.S. national passenger railroad service providing intercity train service.
- **Walk**
Includes walking to a destination. Excluded is walking for exercise where the trip origin and destination are the same.
- **School Bus**
Includes county school buses, private school buses, and buses chartered from private companies for the express purposes of carrying students to or from school and/or school-related activities.
- **Moped (Motorized Bicycle)**
Includes motorized bicycles equipped with a small engine, typically 2 horsepower or less. Also included are minibikes such as dirt bikes and trail bikes. Note that a motorized bicycle may or may not be licensed for highway use.

- **Other**

Includes any type of transportation not listed above.

OCCUPANCY (VEHICLE)

The number of persons, including driver and passenger(s) in a vehicle. NPTS occupancy rates are generally calculated as person miles divided by vehicle miles.

PERSON MILES OF TRAVEL (PMT)

A measure of person travel. When one person travels one mile, one person mile of travel results. When one person travels five miles, five person miles of travel results. When four persons travel five miles in the same vehicle, 20 person miles of travel result.

PERSON TRIP

A person trip is a trip by one person in any mode of transportation. If more than one person is on the trip, each person is considered as making one person trip. For example, four persons traveling together in one auto account for four person trips.

TRAVEL DAY

A 24-hour period from 4:00 am to 3:59 am of the following day designated as the reference period for studying trips and travel of a particular household.

TRAVEL DAY TRIP

A travel day trip is defined as any one-way travel from one place (address) to another by any means of transportation (e.g., private vehicle, public transportation, bicycle, walking). When travel is to

more than one destination, a separate trip exists each time the following criteria are satisfied: the travel time between two destinations exceeds 5 minutes, and/or the purpose for travel to one destination is different from the purpose for travel to another.

The one exception is travel within a shopping center or mall. It is to be considered travel to one destination regardless of the number of stores visited.

TRIP PURPOSE

The main reason that motivates the trip. For purposes of this survey, there are 11 reasons for trips. For travel day trips, if there is more than one reason for the trip, and the reasons do not involve different destinations, then only the main reason is chosen. If there are two or more reasons, and they each involved different destinations, then each reason is classified as a separate trip. For travel period trips, if there was more than one reason, the primary reason was collected. The 11 trip reasons (grouped into the four major purposes) are defined as follows:

Earning a Living

- **To or From Work**

Includes travel to a place where one reports for work. Does not include any other work-related travel.

- **Work-Related Business**

Trips related to business activities except travel to the place of work, e.g., a plumber drives to a wholesale dealer to purchase supplies for his business.

Family and Personal Business

- **Shopping**

Includes purchases of commodities such as groceries, furniture, clothing, etc., for use or consumption elsewhere.

- **Doctor or Dentist**

Trips made for medical, dental, or psychiatric treatment or other related professional services.

- **Other Family or Personal Business**

Includes purchase of services such as cleaning garments, haircuts, and car repair and maintenance. Also includes trips to take someone else somewhere, i.e. "serve passenger" trips.

School or Church

- **School/Church**

Trips to school, college, or university for class(es), PTA meetings, seminars, etc., to church services or to participate in other religious activities. Social activities that take place at a church or school are classified as social and recreational.

Social and Recreational

- **Vacation**

Trips reported by the respondent as "vacation".

- **Visit Friends or Relatives**

Trips made to visit friends or relatives.

- **Pleasure Driving**

Includes trips made with no other purpose listed but to "go for a drive" with no destination in mind.

- **Other Social and Recreational**

Any purpose for a trip that does not fit into one of the above categories. For example, going to dinner with friends, attending movies/theater, etc.

VEHICLE

In the 1969 survey, "vehicle" refers to autos and passenger vans owned or available to the household. In the 1977, 1983, and 1990 surveys, the term "vehicle" was expanded to include pickups and other light trucks, RV's, motorcycles and mopeds owned or available to the household. Estimates show that in 1969 there were an additional 7.5 million pickups and other light trucks that are not reflected in the 1969 NPTS data.

VEHICLE MILES OF TRAVEL (VMT)

A unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.

VEHICLE TRIP

A trip by a single vehicle regardless of the number of persons in the vehicle.

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