

Travel by the Elderly

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Executive Summary

Introduction

The elderly are the fastest growing component of the U.S population and the very old are the fastest growing component of the elderly. Most elderly people today are drivers and over three fourths live in low density suburban or non-metropolitan places—places where the use of the private car is either encouraged or absolutely necessary. Although a declining *percentage* of the elderly live in rural areas, there is often a high *concentration* of elderly in the rural areas where they do live—areas where they face severe isolation if they lack transportation options.

Moreover, the diversity seen among younger Americans is increasingly being seen among those now elderly and there is little doubt that it will increase in the future. Cultural and ethnic preferences have important transportation implications; people will bring to their senior years the social, personal, and recreational patterns shaped by these preferences—including their traditional travel patterns—which include a very significant dependence on the private vehicle.

This report identifies socio-demographic changes in the older population and then ties the patterns to the travel patterns seen in the 1983 and 1990 Nationwide Personal Transportation Survey (NPTS). The analyses are based on unpublished tape-readable data from the 1990 NPTS as well as unpublished calculations originally made from the 1983 tapes.

Findings

The 1990 NPTS data show an elderly population whose reliance on the car has become more intense since 1983; no cohort of the elderly took less than 75% of all trips in a private vehicle as either a passenger or driver. Conversely, the elderly were even less likely to use public transit for their trips than ever before; no cohort of the elderly used transit for more than 5% of their trips and the average was substantially less. Although walking was the mode of second choice, its importance fell by one-third in urban areas and one-fourth in rural areas since 1983.

Linked to the use of the car is the increasing distance covered by the elderly; the elderly as a group drove 20% more miles than they had in 1983 while those over 70 drove 40% more. Even the very old were driving a substantial number of miles each day. Trip-making dropped substantially as people aged, with the biggest decrease occurring when people hit 85.

The NPTS data also show that there were important differences in the travel patterns of older men and women. Overall, elderly men took 24% more person trips, travelled 19% more miles, and made 94% more vehicle trips than elderly women. In spite of these differences, and even though fewer older women had licenses, women took almost as great a percentage of their trips in a private vehicle.

The data clearly show that having a drivers license is associated with substantial increases in the number of person trips and person and vehicle miles—the trip rates of men with licenses was almost double those of men without. The impact was especially important for the very old—men over 85 with licenses made three times as many trips as comparable men without.

The NPTS data also show that Whites are substantially more dependent on the private car than are Hispanics, Blacks, or other races—although all groups make more of their trips in a car than any other mode. White seniors of both sexes make more vehicle and person trips and travel more miles than any other ethnic or racial grouping. Moreover, white men and women have more similar patterns than the sexes within other groupings; White men make 21% more person trips than comparable females but Black men make almost 100% more trips than Black women.

Implications

The findings raise several major questions. First, we need to know to what extent the differences among the elderly are a function of choice and to what extent necessity. Knowing peoples' preferences will help us make more cost-effective investment and policy decisions. Second, we need to know if current sex, race, and ethnic differences in travel patterns are likely to continue because they reflect important cultural norms and expectations held by younger cohorts of the population. Third, it is important to know if the upward trends among the elderly in all aspects of travel will continue, and if they will continue, what the intensity of growth will be.

Fourth, we must recognize that the growing diversity of the elderly population also includes pockets of much older women living alone, and men and women who are below poverty level, and those who cannot or will not drive, or who cannot or will not obtain rides from others. This should prompt a concern with a more inclusive and comprehensive approach to an aging society. The analyses presented show that there are no easy answers to the problem of the mobility of Older Americans; effective solutions must reflect a comprehensive understanding of how elderly people meet their needs and the environmental constraints and barriers under which they operate.

In the future most elderly will be car drivers—and will hold onto their cars and licenses as long as possible. Until society can offer realistic ways for elderly drivers to meet their mobility needs—and those of their passengers—without driving it is both unreasonable and unfair to expect them to give up their cars. Therefore we must:

- improve the safety of cars and the road network, and,
- assist competent elderly drivers who have financial problems.

At the same time there are pockets of elderly people who cannot drive or afford to maintain a car; to address their needs, and to provide options for those who can chose, we must:

- develop a range of alternative transportation options for those who are non-drivers, or those who wish to decrease the amount of driving they do,
- develop mobility alternatives that are geared to the diversity of the older population, maximizing the choices offered the elderly traveller, and,
- provide more pedestrian friendly neighborhoods—to allow Older Americans to walk to meet some of their needs, or to easily access public transit, or simply for recreational purposes.

Finally in order to develop intelligent and comprehensive solutions to the mobility problems of Older Americans, we must:

- make clear the link between housing and land use choices, on one hand, and transportation needs on the other in all policy discussions.

Acknowledgments

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Introduction and Overview

The elderly are the fastest growing component of the U.S population; the number of those over 65 grew more than 20% between 1980 and 1990. This phenomenon is characteristic of most developed societies; for example, Germany and Denmark, which expect their total populations to decline in the next thirty years, are projecting an increase in the absolute number and percentage of those over 65. In addition to the overall growth of the elderly, there will be remarkable increase in the number of very old travellers; by the first decade of the Twenty-First Century almost 5% of the entire US population will be over 80.

Among this enlarging group of older people will be a wonderful mix of life styles, cultural and ethnic norms, residential choices, and travel patterns. Moreover, the elderly population will include a complicated mixture of skills and deficiencies, resources and needs, health and illness. An integral part of this mix: most older Americans will have been licensed drivers most of their lives, many of them still driving to meet their needs.

Given the aging of our society, and the large and growing number of very old people, it is important to identify the social, demographic, and cultural changes being experienced by older Americans and to evaluate how those trends affect transportation patterns. As the Bureau of the Census warns,

Within the coming decades, the United States will have a larger, more diverse older population...As individuals, and as a society, we will face a challenge to anticipate the change in needs and desires of a diverse, aging America.¹

This report identifies a range of socio-demographic changes in the older population using Census and other data and then attempts to tie these patterns to those seen in the travel data of the 1990 Nationwide Personal Transportation Study (NPTS).

The report largely uses descriptive statistics and simple cross-tabulations to deal with these issues. This approach is dictated by both the limits of the data and the policy and planning uses to which the analyses are likely to be linked. In particular, when the data on older travellers are disaggregated to any interesting extent, the numbers in each group become very small which may limit the meaningful use of more sophisticated techniques. Moreover, while a descriptive approach has its limitations, it produces analyses that are clear and easy to understand.

The travel analyses are based on unpublished tape-readable data from the 1990 NPTS as well as unpublished calculations originally made from the 1983 tapes. These data sources are augmented by other published and unpublished data sources which are identified.

This, the first major section of the report, evaluates demographic and licensing changes among those now elderly and those who will soon be, briefly chronicling their increasing diversity, their growing suburbanization, and their all but universal automobility. The second major section of the report analyzes NPTS data on the trip patterns and travel rates of older Americans; the third major section focuses on some of the gender as well as racial and ethnic differences that underlie the variations in travel seen among the elderly. Finally the fourth major section of the report analyzes the policy and program implications of the trends identified.

Understanding travel data on the elderly is an enterprise fraught with difficulty. Most elderly people travel longer and more often than their counterparts of only a few decades ago; it is both tempting and almost impossible to avoid saying that these increases represent "greater mobility." In fact, some elders, like those in rural and low density communities, *have to* travel further to access necessary services than did their counterparts of a few decades ago—and they *have to* do so in car, often in the face of declining physical or financial resources, because they lack any other viable option. Being *forced* to travel longer or to drive to reach desired services can hardly be considered better mobility. Unfortunately, when we examine the patterns of any set of travellers we rarely know if we are seeing what they want to do or what they are forced to do by societal constraints and environmental barriers.

A First Look

Table 1 illustrates the growing importance of the older component of the US population. In 1990 those over 65 accounted for almost 13% of the population; over 5% of the entire population of the United States was over 75. The US Census Bureau projects that by the end of the first decade of the next century over 14% of the US population will be over 65, almost half being over 75.

Table 2 further chronicles the growing concentration of much older seniors. Today those over 80 account for a far larger percentage of older Americans than they did just 20 years ago. Tables 1 and 2 also show the impact of the aging of the baby boomers: those born after the Second World War will become seniors at the end of the first decade of the 21st Century. This large influence will increase the proportion of younger senior citizens, so that the percentage of all seniors who are over 75 will drop slightly for a decade or so. However, within fifteen years, the proportions will turn again, and the percentage of those over 75, and even over 80, will continue to intensify.

However the very old are not evenly divided among population groups. In 1990 slightly fewer Black and Hispanic seniors were very old; by 2050 the Census estimates that over 38% of whites but only 33% of Blacks and Hispanics over 65 will be over 80. Moreover, a far smaller percentage of the total Black or Hispanic population are over 65; in 1990 only 8% of Blacks and 5% of Hispanics were seniors compared to over 13% of Whites. In spite of these differences, however, the total number of very old people of any race or ethnicity is substantial—in 1990 there were over 6.2 million Americans over 85, a number the Census expects to increase over 400% by 2050.

The Implications of Diversity

The diversity of America is increasingly being reflected in the makeup of the elderly; in 1990 roughly 7% of those over 65 were Black while 5% were of Hispanic origin (of any race). However, the Census

Table 1 Current and Projected Distribution of Population over 65, 1990-2010

		DISTRIBUTION OF POPULATION OVER 65			
YEAR		Percent of U.S. Population	TOTAL	MEN	WOMEN
1990	65-74	7.3%	58.2%	63.6%	54.5%
	75+	5.3	41.8	36.4	45.5
2000	65-74	6.8	52.3	57.7	48.5
	75+	6.2	47.7	42.3	51.5
2010	65-74	7.4	53.5	59.2	49.3
	75+	6.5	46.5	40.8	50.7

Source: Derived From U.S. Bureau of Census, Statistical Abstract of the United States, 1990, Table 18.

Bureau predicts that by the middle of the next Century 12% of older Americans will be Black, almost 9% will be of races other than Black or White, and over 15% will be of Hispanic origin.

Little attention has been paid to racial and cultural differences in *travel patterns* among the elderly and their families²—although there is a growing body of literature which shows that these variables are critically linked to travel behavior among younger travellers. Such cultural or ethnic differences may well create variations in the driving patterns of older people as well as in the kind and amount of ride-giving either requested by or provided to them.

Table 2 **Distribution of the Elderly Population by Cohort, 1970-1991**

T O T A L S

AGE COHORTS	1970	1980	1990	1991
65-69	35.0%	34.3%	32.4%	31.6%
70-74	27.3	26.6	25.7	26.0
75-79	19.2	18.8	19.6	19.8
80-84	11.4	11.5	12.6	12.7
85+	7.1	8.8	9.7	10.0

AGE COHORTS	1970		1980		1990		1991	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
65-69	37.3	33.4	37.8	31.9	36.1	24.9	35.1	29.2
70-74	27.7	27.0	27.7	25.9	27.2	24.6	27.6	24.8
75-79	18.7	19.6	18.0	19.3	19.1	20.0	19.4	20.0
80-84	10.5	12.1	9.9	12.6	10.9	13.7	11.0	13.9
85+	5.8	7.9	6.6	10.3	6.7	11.7	6.9	12.0

Source: U.S. Statistical Abstract, Table 39.

Martin Wachs and his associates, who conducted the seminal study of the life-styles of the elderly; found that older people in Los Angeles were very heterogeneous. While socioeconomic status and car ownership did influence travel, as traditionally thought, Wachs concluded that other variables such as ethnicity, race, and geographic location within a community also significantly affected transportation patterns. He found, for example, that elderly Mexican-American women were significantly less likely to have a drivers license but more likely to make trips in autos than comparably situated Anglos or other minority women.

Another study conducted in Los Angeles for the National Science Foundation (NSF) also found significant differences among Black, Anglo, and Hispanic elderly with comparable socioeconomic status. For example, older Hispanics depended on their families for transportation far more than other racial or ethnic groups. Black and Anglo elderly, conversely, were more likely to drive to meet their travel needs. There were also major ethnic and racial variations in responses to transit cost and fear for personal safety.³ The NSF study concluded that "differences in cultural orientations and needs of minority groups, [were] not adequately taken into account" in transportation planning.⁴

There is also growing evidence of differences in lifestyle and travel behavior among younger cohorts of people, differences which they bring to their senior years. Analyses of 1980 Census data show that Hispanics are more likely to carpool than comparable workers and less likely to use transit than others in comparable socio-economic groupings.⁵ A 1982 study found that Mexican-Americans in Denver used public transit far less than comparably situated Anglos because 1) they preferred to share cars and travel with friends on all trips and 2) they were travelling to different places for activities than other travellers.

Martin Wachs has concluded,

Just as different communities of younger people are based upon lifestyle variables of culture, ethnicity, and socioeconomic class, these variables will play a larger role than age itself in identifying communities of the elderly during the coming decades⁶. . . it appears that old people will become even more diverse during the coming decades.

Improved health, greater economic resources, and improved education will result in increased varieties of lifestyles among the elderly. These lifestyles will be drawn from the more diverse experiences in younger life as well as from greater freedom of choice in retirement . . .⁷

The Needs of a Diverse Aging Population

Integrally tied to diverse lifestyles among the elderly is the question of family support and caregiving. In the next few decades our society will also experience a situation without historical precedent; a substantial number of middle age *and* younger elderly people will have very old and frail parents. In 1940 only 1 in 3 fifty year old women had a living mother but that figure had doubled to 2 in 3 by 1980.

Studies clearly show that 80-90% of personal care and help with household tasks for the elderly—including transportation—is given by their families, and overwhelmingly the daughters in those families⁸⁻⁹¹⁰⁻¹¹. Overall the level of care required by our rapidly aging population is much more physically and psychologically demanding than that given in 1950, in part because of the increased number of cognitive diseases among the growing number of people older than 80. As a result middle-aged women may actually leave the work force to care for frail older relatives¹²⁻¹³.

However, there is a literature which shows that there are differences in the care and services, including transportation, that families offer older family members—differences which may be related to ethnic and cultural factors^{14-15 16-17 18}. Studies show that both Black and Hispanic families treat their elderly family members differently than Anglo families¹⁹⁻²⁰. For example, Keefe, in a study of households in Los Angeles, found that Chicano families were more likely than Anglo families to exchange support services (including transportation)²¹.

On the other hand, there is some evidence that *acculturated* Latino households respond differently to the needs of elderly relatives²². Although some research suggests that subsequent generations of Latino women become more like the majority culture^{23 24 25}, other work²⁶ found that extended families and mutual aid are greatest among *second* and *third* generation Latino families. MacCorquodale, in a 1985 study of families in Southern Arizona, found that salaried Chicanas were more likely to continue giving aid to family members after employment than were comparable Anglo women²⁷.

The variations in lifestyles that arise out of cultural and ethnic differences will have several important transportation implications for the elderly. First, most people will expect to continue the social, recreational, and personal business patterns shaped by these factors—their *life styles*—as they age. Second, as a part of their life style choices, people will carry into their senior years their traditional *travel* choices and patterns—most people, of course, will be drivers, but they may vary in the degree to which they offer rides to others, accept rides instead of driving, or use alternative transportation options. Third, differences in cultural norms about family support may effect the amount of assistance in carrying out their daily activities which elderly people are offered—or expect—from friends and relatives (reducing the need for travel by bringing goods or services to them or by offering rides when travel is required).

The Impact of Gender Differences

The Tables presented earlier show that there are important differences between older men and women: because women live longer, they outnumber men by 3 to 2 and are overrepresented among the very old (a man 65 in 1989 had an average of 15 more years of life expectancy while a comparable women had almost 19²⁸). In 1991 almost 46% of women but only 37% of men over 65 were over 75 while more than one in four older women were over 80 (compared to less than one in five men). The Census Bureau predicts that by 2010 more than half of all women but only 41% of all men will be over 75.

Partially because of the age gap between men and women, older women are substantially more likely to be *unmarried* or to live alone; in 1990 almost 54% of women but only 19% of men over 65 were widowed or divorced while 16% of men but over 42% of women over 65 were living alone. But the age gap does not explain all the differences between the sexes; among those over 85 more than 57% of women but only 28% of men were living alone; moreover, men over 85 not living alone were almost twice as likely to be living with a spouse or relative than comparable women.

Marital status and living arrangements are significantly related to income and the likelihood of being in poverty—although there are clearly independent sex effects. Older people living alone are 50% more likely to have poverty level incomes than married couples, but women living alone are more likely to have low incomes than comparable men. In 1990, for example, 58% of women over 75 living alone but only 42% of comparable men had incomes under \$10,000. In 1990 almost 44% of Afro-American women over 75 but only 34% of comparable men were in poverty; in 1980 40% of women over 85 living alone were poor compared to 27% of comparable men.

Thus while the elderly as a whole are increasingly more affluent, women and people of color have not shared proportionately in these favorable changes. Moreover women comprise the largest component of the very old—those with the most need for services and, because they most often live alone, the most affected by the inability to drive or afford a car.

Changes in Demographic Patterns

Today's elderly show very different living patterns than did their counterparts of a few decades ago. Until 1980 the majority of seniors living in urban places lived in the central city of those places; as Table 3 shows, by 1980 the percentage of seniors living in urban areas had increased slightly and almost 60% were living in the suburbs of those areas. Moreover, the distribution among cohorts of the elderly was more equal; although younger seniors were more likely to live in the suburbs than older elderly, the differ-

Table 3 **Geographic Distribution of the Elderly Population, 1980 and 1990**

AGE COHORTS	RURAL		URBAN					
	TOTAL		TOTAL		CENTRAL CITY		SUBURB*	
	1980	1990	1980	1990	1980	1990	1980	1990
60-64	27.0%	26.6%	73.0%	73.4%	41.0%	40.5%	59.0%	59.5%
65-69	28.9	25.7	71.1	74.3	42.6	40.8	57.4	59.2
70-74	29.5	25.2	70.5	74.8	44.0	40.9	56.0	59.1
75-79	29.0	24.4	70.1	75.6	45.6	41.7	54.4	58.3
80-84	29.0	23.2	71.1	76.8	46.3	42.3	53.7	57.7
85+	29.8	21.5	70.2	78.5	46.2	42.8	53.8	57.2

SOURCE: 1990 General Population Characteristics, Table 12.

* = Urban Fringe

ences were far greater in 1980 than in 1990. For example, there were only two percentage points difference between those 65 and those 85 in 1990 compared to almost four percentage points in 1980.

The Census Bureau notes "most elderly people stay put."²⁹ Table 3 clearly shows the result of the aging-in-place of the elderly. For over three decades, the residential mobility of older Americans has been dropping; from 1965-70 roughly one in four older people changed their residence compared to only one in five from 1975-80. Moreover most movement is among the very old, leading to speculation that those moves are related to health problems and may reflect relocation to nursing homes and care facilities. For example, almost 30% of the elderly over 85 moved in the five year period from 1975-80, compared to 20% of those in their 70's.

In 1990 23 million seniors lived in urban areas while 8.2 million lived in non-metropolitan, or rural, regions. The rural numbers shown in the Table may be slightly misleading; the drop in the percentage of elderly living in non-metropolitan areas does not reflect movement away from rural areas. Rather it shows that most younger people now live in urban areas, and then continue to live in those places when they become seniors. Moreover, because the rural elderly are also aging in place, the actual *concentration* of rural elders has been increasing substantially. Nationally the rural elderly constitute more than 15% of the population in the areas where they live³⁰ and there are a number of states and individual counties where they make up over 35% of the rural population. Unhappily, poverty rates were substantially higher among the elderly in nonmetropolitan areas.

These residential patterns are related to both transportation needs and the underlying life style which creates transportation patterns. Wachs found, for example, that older people had more in common with their younger neighbors than with others of their own age living in very different communities. In central Los Angeles seniors were much more likely to use the bus for much of their travel—as did their younger neighbors—but in newer suburban areas seniors rarely used the bus and mostly drove—*like their younger neighbors*.

Interestingly, older Americans are *less* likely to stay in the labor force as they age than their counterparts of a few decades ago. In 1950 45.8% of men and 9.7% of women over 65 were in the civilian labor force; by 1990 the comparable figures had dropped to 16.4% of men and 8.7% of women³¹. Although disaggregated data are not yet available for 1990, the 1980 Census showed that 16.7% of males 75-79 and 10.4% of those 80-84 were in the labor force compared to 6.1% and 3.7% of women in similar age groups. These figures can be contrasted to the 1990 NPTS data in Table 4 which show a still further drop in labor force participation: no more than 10% of men nor 4.2% of women 75-79 or 5% of men or 3% of women 80-84 were in the workforce.

Although labor force participation dropped, incomes increased substantially among all cohorts of the elderly. The median income of those over 65 has more than doubled (in constant 1990 dollars) since 1959 (from \$6,609 to \$14,183 for elderly men, from \$3,447 to \$8,044 for elderly women). However, the increases weren't felt equally; the incomes of elderly women living alone increased only 13% in the same period while those of Black women didn't increase at all between 1979 and 1987³². In general, those living alone had the lowest median incomes; the majority of those over 75 who lived alone in 1990 had incomes below \$10,000.

Although almost four million seniors were poor in 1990, the poverty rate dropped substantially from 1959 when over one-third of all seniors were poor. In 1990 only 12.2% of seniors were living in poverty—a rate roughly half that of the population as a whole. However, although women comprised 58% of those over 65, they accounted for almost three-fourths of the poor elderly.

Table 4 Older People Still in the Work Force, by Sex and Cohort over 60, 1990

AGE COHORTS	MEN		WOMEN	
	Urban	Rural	Urban	Rural
60-64	48.9%	48.8%	32.9%	27.7%
65-69	26.3	21.8	14.6	13.3
70-74	14.9	14.2	19.1	8.2
75-79	8.8	10.0	4.2	3.6
80-84	4.8	2.8	2.8	3.0
85+	1.3	3.6	1.1	.9

Source: Person Files

In addition to other demographic changes, those who will be elderly in the next decades will have substantial higher educational attainment than previous generations. In 1989 only 55% of elderly people had at least a high school education compared to 82% of those 25 to 64; 30 in 100 older people had completed only the eighth grade compared with only 8 in 100 among those 25 to 64. The Census Bureau has commented, "Improvements in educational attainment are likely to make notable differences in the interests of the future elderly, their needs, and abilities."

In fact all of the demographic changes described above will create an elderly population which will differ notably from previous generations in many important ways: they will be wealthier and better educated, substantially more diverse, much more likely to be living in the suburbs, and more likely in their own homes. All of these patterns will create important transportation differences and desires among older Americans in the future.

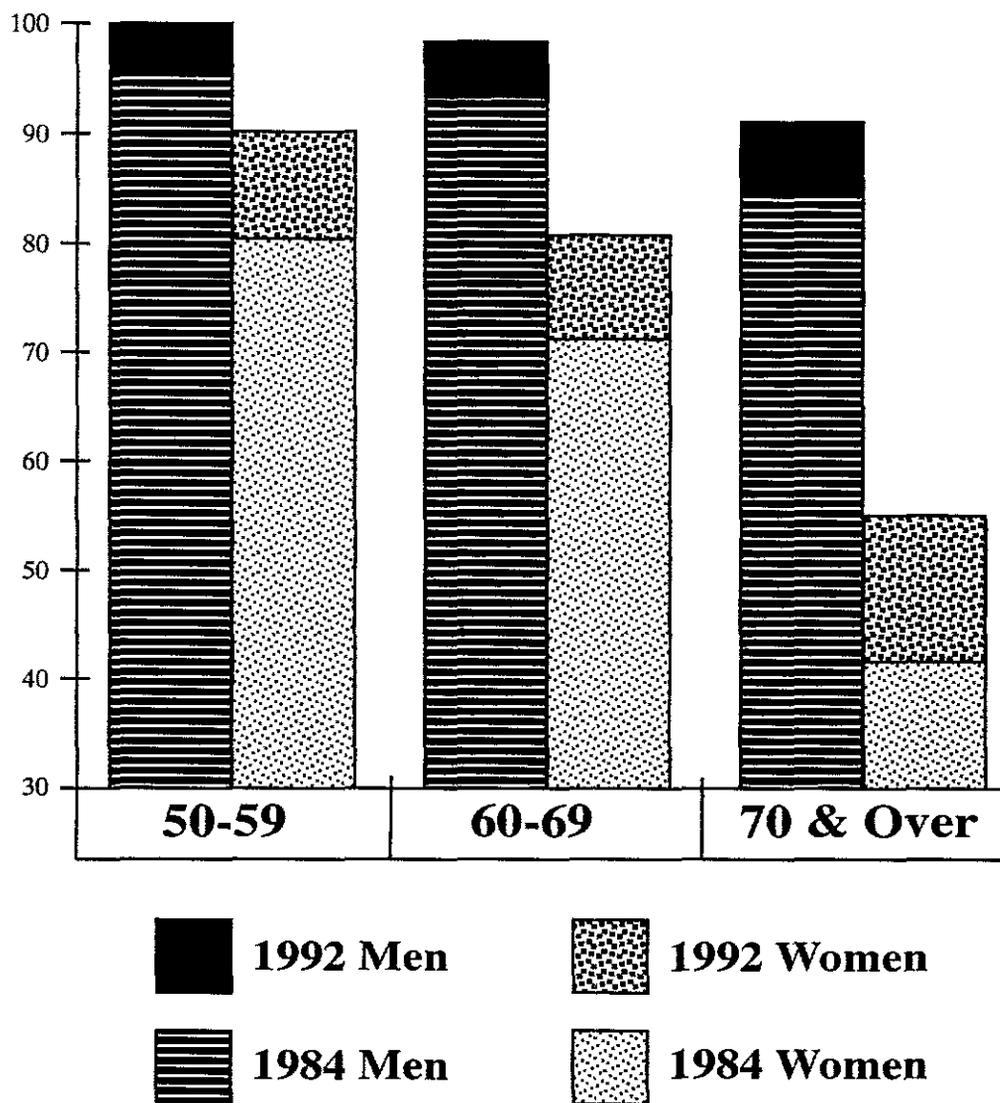
Changes in Licensing Rates

One of the most significant changes of the last three decades has been the increasing use of the private car by both older men and women. Figure 1 shows licensing data from the Federal Highway Administration for men and women over 50 in 1984 and 1992; licensing rates have gone up substantially for every cohort and far faster for women than for men. In 1992 over 98% of men and over 80% of women 60-69 had a driver's license but women's rates had increased 50% faster than men's in the same time period. However the most important message of Figure 1 is that licensing is almost universal among younger cohorts of older women so that a) the traditional gap between the sexes is lessening considerably and b) licensing will be close to universal for all seniors of both sexes by 2010.

The 1992 FHWA data in Figure 1 can be contrasted to 1990 NPTS data which tend to show slightly lower licensing rates among comparable cohorts under 70. However the NPTS data shown in Figure 2 also suggest that NPTS respondents *over 70* were more likely to have (or report having) a driver's license than their national counterparts. For example, the FHWA data indicate that an *average* of 55.3% of women over 70 drive while only one NPTS cohort over 70 shows a rate *that low*.

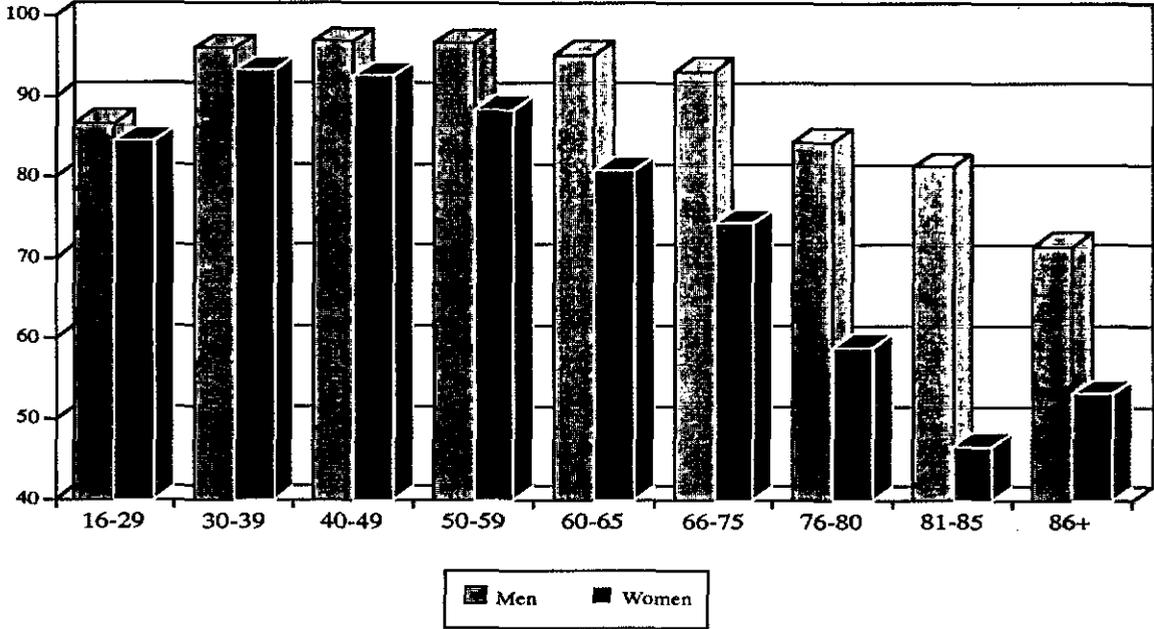
Yet both data sets show the same clear trends: licensing will be very high among both men and women who will be seniors in the next 30-40 years. By 2010 90% of women and almost 100% of men over 65 will be licensed drivers—drivers with over thirty years of driving experience.

Figure 1 Licensing Rates Among Men and Women over 50, Using FHWA Data, 1984 and 1992



Sources: FHWA, 1984 Highway Statistics, Table DL, Oct. 1985 and FHWA, Driver's Licenses, 1992, PL-94-006, October 1993, p.8.

Figure 2 Licensing Rates Among Men and Women, by Age, 1990 NPTS



Travel Trends

Most of the travel patterns of the elderly are a direct result of the interaction of the key demographic changes described above. As a group the elderly have more disposable income, are more likely to live in low density places, and are more likely to have a drivers license than their counterparts of just a few decades ago. Higher income, the ability to drive, and the need to use a car in suburban and rural areas where there are no alternatives explain many of the patterns described below.

The following section presents NPTS data on the travel patterns of those over 65 and various individual cohorts of the elderly, and then analyzes differences in those patterns by sex, license-holding, and race and ethnicity.

Dependence on Private Vehicles

Between 1977 and 1983 the dependence of the elderly on the private car, as a passenger or a driver, increased substantially in both urban and rural areas; the 1990 NPTS data indicate that these trends have only strengthened. Table 5 indicates the travel mode for all urban trips while Table 6 illustrates the travel mode for all rural trips. Both Tables clearly show that reliance on the private car has increased since 1983 for all cohorts of the elderly in both urban and rural areas. Given limited alternatives, it is not surprising that auto dependency is even higher in rural areas—where no fewer than 85% of all trips are made in a private vehicle. However, note that there is no cohort of the elderly who use the car for less than three-fourths of all their trips regardless of where they live.

Conversely, transit use fell in urban areas from fairly low levels in 1983 to even lower levels in 1990—no elderly cohort made more than 5% of their urban trips by transit, with the average closer to 2%. In rural areas, however, transit ridership, while minuscule, was recorded for the first time. It may be that rural transit options, particularly those geared at the elderly or those with disabilities, are becoming more available or attractive.

Table 5 Urban Travel Modes for All Trips by Cohort over 60, 1983 and 1990

MODE	60-64		65-69		70-74		75-79		80-84		85+	
	1983	1990	1983	1990	1983	1990	1983	1990	1983	1990	1983	1990
Private Vehicle	87.1%	92.9%	82.2%	89.4%	83.3%	89.7%	81.8%	87.0%	75.7%	82.6%	74.6%	76.5%
Public Transit	2.5	1.7	3.4	2.2	5.4	2.2	1.5	4.5	---	1.0	7.8	2.9
Taxi	.1	.1	.2	.2	.2	.3	1.3	.5	1.4	.8	---	2.9
Walking	8.0	4.6	12.6	7.3	10.1	7.3	12.0	7.8	22.2	13.6	17.6	16.2
All Others	2.3	.7	1.6	.9	1.0	.5	3.4	.2	.7	2.0	0.0	1.5

Source: Trip Files.

Table 6 Rural Travel Modes for All Trips by Cohort over 60, 1983 and 1990

MODE	60-64		65-69		70-74		75-79		80-84		85+	
	1983	1990	1983	1990	1983	1990	1983	1990	1983	1990	1983	1990
Private Vehicle	91.6%	95.2%	89.7%	94.7%	87.5%	95.2%	88.7%	93.2%	82.2%	90.5%	80.2%	86.3%
Public Transit	---	.2	---	.3	---	.5	---	.4	---	.6	---	3.4
Taxi	---	---	---	---	---	.4	---	.3	---	2.3	---	1.7
Walking	5.0	4.1	4.9	3.8	11.9	3.5	7.8	4.6	14.9	6.6	5.3	6.8
All Others	3.4	.5	5.4	.2	.6	.5	4.5	1.5	2.9	0.0	14.5	1.8

Source: Trip Files.

Table 7 Percentage of Urban Shopping Trips Made by Alternative Modes by Cohort, 1983 and 1990

AGE COHORTS	Transit		Walking		Taxi	
	1983	1990	1983	1990	1983	1990
60-64	2.0%	.7%	8.3%	5.7%	---	---
65-69	1.9	1.2	13.8	6.8	---	.1
70-74	4.9	2.7	12.1	8.7	---	.2
75-79	0.0	3.8	14.8	7.5	---	.6
80-84	0.0	.5	38.8	14.7	---	0.0
85+	16.6	0.0	50.9	9.2	---	1.5

Source: Unpublished data from 1983 NPTS, tape readable format, 1990 Trip Files.

In 1990, as in 1977 and 1983, both urban and rural residents were more likely to walk than to use public transit for trips not made by car—but the use of this mode fell by at least one third for most elderly travellers in urban areas and by one fourth for rural residents. Even though walking as a mode declined in importance, the oldest travellers were more likely to make trips this way than younger seniors in both urban and rural areas.

It is interesting that the use of the taxi was recorded for the first time in rural areas—for those over 70—and increased in importance slightly for some urban travellers. While the numbers are very small—and could be sampling artifacts—the reported use of taxis in rural areas may, in fact, reflect the growing development of rural public transit systems which often contract with taxi providers. The same phenomenon may be occurring in urban areas—where special transit operators often contract with taxi providers as well—or there may be an increased use of the next-best substitute for the private car—the full-fare taxi.

The elderly's dependence on alternative modes, however, was often greater for certain kinds of trips. Strikingly, while most cohorts of the elderly made more of their *medical and dental trips* by private vehicle than their other trips, they used the car *less* in 1990 than they had in 1983 for these kind of trips.

The patterns of urban *shopping* trips are somewhat different; as with medical trips, the overwhelming number of these trips were made by private vehicle but the dependence on the car *went up* for every cohort of the elderly from 1983 to 1990. Table 7 shows that public transit use and walking for shopping trips declined for almost every co-hort of the elderly. On the other hand, the use of the taxi for shopping went up, particularly for the very old—although the numbers are not high.

Overall Trip Patterns

Elderly individuals have become more mobile over time as measured by both trips taken and miles travelled. Between 1969 and 1990, men over 65 increased their miles driven by 55%, or over 2.1% annually, while women over 65 increased their miles driven by over 30%, or 1.2% annually³³. Although the average elderly person took only 6% more trips in 1990 than in 1983, those trips were 19.4% longer; on average elderly individuals travelled almost 26% farther in 1990 than they had in 1983³⁴.

This mobility is clearly linked to the growing dependence of the elderly on the car. Table 8 shows the increase in miles driven for all travellers and for selected cohorts of the elderly. In the two decades covered

Table 8 Average Annual Miles Driven, by Driver Age, 1969-1990

	1969	1977	1983	1990
All Ages	8,685	10,006	10,588	13,181
60-64	8,112	8,002	8,568	10,314
65-69	5,850	6,277	6,804	8,347
70+	4,644	4,828	4,348	6,138

by these data, all Americans drove progressively more miles—with a substantial increase between 1983 and 1990. The average American drove almost 25% more miles in 1990 than in 1983; the younger cohorts of elderly drivers also increased their mileage substantially but at a slightly slower rate—a little over 20% in seven years. Remarkably, among those over 70 the increase in mileage was over 40%. (The drop in mileage among those over 70 from 1977 to 1983 is generally considered to be a sample size problem.) NPTS data show that rural seniors generally drove more than urban seniors of the same age-cohort.

Table 9 shows that the distribution of urban trips is remarkably similar for individual cohorts of the elderly—and hasn't changed substantially since 1983 for those under 80. Older seniors take a slightly greater percentage of shopping trips than younger seniors and more medical trips—but even among those over 85 not more than one trip out of fifteen is for medical purposes. Table 10 displays similar data for cohorts of the elderly in rural areas.

Table 11 compares aggregate data for rural seniors to those for urban seniors; note that the general patterns among seniors are roughly the same—over sixty percent of the trips of all cohorts of the elderly are for shopping or social activities. However church-related trips account for a larger percent while medical trips account for an even smaller percent of rural travel.

Table 12 presents data on the annual miles driven by age and sex and has several important messages. First, the Table clearly illustrates that rural seniors generally drive more than urban seniors of the same age cohort. Rural male drivers over 65 drive, on average, almost 8% more miles than their urban counterparts while female rural drivers generate almost 17% more miles than their urban counterparts. Except for the very oldest people, the discrepancy between rural and urban drivers actually increased as age increased; rural men 80-84 drove 33% more miles than comparable urban males.

Second, the Table shows that men drive substantially more than women; among all those over 65, urban men drive more than twice as far as urban women while rural men drive 92% more than rural women.

Table 9 **Distribution of Urban Non-Work Vehicle Trips, by Cohort over 60, 1983 and 1990**

TRIP PURPOSE	60-64		65-74		75-79		80-84		85+	
	1983	1990	1983	1990	1983	1990	1983	1990	1983	1990
Shopping	35.0%	32.9%	32.0%	33.7%	33.0%	32.7%	29.0%	39.5%	19.0%	36.6%
Combined Social	33.0	30.1	31.0	31.1	37.0	29.7	28.0	16.7	56.0	30.1
Family/Business	22.0	26.3	23.0	25.8	15.0	23.6	12.0	11.5	7.0	9.8
School/Church	7.0	6.7	7.0	7.0	7.0	6.7	17.0	5.5	11.0	15.7
Medical	3.0	2.9	3.0	2.5	8.0	5.0	2.0	16.7	7.0	7.8
All Others	---	1.1	.4	.9	0.0	2.3	2.0	3.0	2.0	0.0

Source: Trip Files.

Table 10 Distribution of Non-Work Person and Vehicle Trips, by Those 65+, 1990

Trip Purpose	VEHICLE TRIPS		PERSON TRIPS	
	Urban	Rural	Urban	Rural
Shopping	34.1%	29.9%	33.8%	29.4%
Combined Social	29.5	27.2	30.6	29.3
Family/Business	24.6	29.1	23.4	28.7
School/Church	7.5	10.3	7.3	9.9
Medical	3.2	2.6	3.2	2.7
All Others	1.1	.9	1.7	0.0

Source: Trip Files

Table 11 Distribution of Rural Non-Work Person Trips, by Cohort over 60, 1990

Trip Purpose	60-64	65-69	70-74	75-79	80-84	85+
Shopping	32.7%	32.6%	36.2%	32.3%	39.5%	32.7%
Combined Social	30.9	31.5	31.2	29.9	25.4	28.1
Family/Business	26.0	25.7	22.5	23.8	16.3	13.6
School/Church	6.4	6.8	6.6	6.5	10.3	17.6
Medical	2.9	2.3	2.7	4.9	5.4	7.0
All Others	1.1	1.1	.8	2.1	3.1	1.0

Source: Trip Files

Even within individual cohorts, there are striking differences; among those 75-79, for example, urban men drove 116% more miles than comparable women.

Perhaps the most striking message of this Table is that very old people drive so far; for example urban seniors *over 85* are driving, on average, over 85 miles per week, a substantial distance considering that they rarely make daily work trips. Even women over 85 are driving a significant distance; rural women over 85 are covering over 160 miles per month.

Suburban vs. Central City Patterns

Although almost three quarters of all elderly live in metropolitan areas, most of them actually live in what can broadly be called *suburbs*; that is, either separate jurisdictions near or adjacent to major urban centers, or, low density neighborhoods within large central cities but at some distance from the traditional core. In the South and Southwest, for example, many large central cities have annexed most of their suburbs; yet in spite of being legally within the central city, older Americans residing in such neighborhoods often live at very low density, miles from downtown, having no alternatives to the car for meeting most of their mobility needs.

Table 12 Average Annual Miles Driven, by Sex and Cohort over 60, 1990

AGE COHORTS	URBAN		RURAL	
	Men	Women	Men	Women
TOTAL 65+	8,951	4,320	9,706	5,046
60-64	12,509	6,046	15,243	7,527
65-69	10,666	4,982	11,169	6,464
70-74	8,742	4,561	10,703	4,665
75-79	7,675	3,554	8,312	3,917
80-84	5,028	2,591	6,680	3,709
85+	4,432	1,624	2,491	1,921

Source: Person Files

Table 13 indicates the impact of residing in (generally) lower density places within metropolitan areas. Overall, those over 65 living in the suburbs are more like their rural counterparts than their central city neighbors: suburban women over 65 drive 6% more than central city women while suburban men drive 14% more than comparable central city men. The patterns are even sharper when the elderly are grouped by cohort; for example, suburban men 75-79 drive 20% more, and those 65-69 7% more, than their central city counterparts.

Moreover, the drop in miles travelled that comes with advancing age, is far greater, absolutely and relatively, for the central city elderly under 80; central city men 75-79 drive 35% fewer miles than comparable central city men between 65-69 while suburban men 75-79 drive 27% fewer miles than men 65-69 in suburban areas. (The reverse tendency among those in the very oldest cohorts may be a sample size problem.)

Table 14 examines the mode choice of elders living in different parts of metropolitan areas. As might be expected, suburban elders are more likely to drive or ride in a car than their city counterparts. While the vast majority of trips taken by all older people is taken in a private vehicle, suburban travellers are far more dependent on the car. Surprisingly, walking is almost as important a travel mode for suburban elders (and more important for all women than for men). Conversely, transit is not a major mode for any of the elderly (who are more than twice as likely to walk as to take transit, even in central cities) but transit use is higher in central city areas than in the suburbs.

Table 13 Annual Miles Driven by People 65+ Residing in Different Locations, by Cohort, 1990

<i>AGE COHORTS</i>	CENTRAL CITY		SUBURBS		RURAL	
	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>
Total 65+	4,054	8,697	4,630	9,235	5,046	9,706
65-69	4,683	10,327	5,311	11,083	6,464	11,169
70-74	4,069	8,417	4,819	8,838	4,665	10,703
75-79	3,485	6,738	3,723	8,093	3,916	8,312
80-84	2,959	5,100	1,843	4,944	3,709	6,680
85+	1,914	4,668	1,650	5,630	1,922	2,491

Table 14 Percentage of Total Trips by Selected Modes, People over 65 Living in Metropolitan Areas, by Sex, 1990

	CENTRAL CITY		SUBURBS	
	Men	Women	Men	Women
PRIVATE VEHICLE				
<i>Percentage</i>	88.5%	85.1%	91.5%	89.1%
<i>N</i>	1604	1787	1384	1432
TRANSIT				
<i>Percentage</i>	3.3	3.3	1.3	1.7
<i>N</i>	60	69	19	28
WALKING				
<i>Percentage</i>	7.0	10.2	6.7	8.0
<i>N</i>	126	214	101	128
TAXI				
<i>Percentage</i>	.3	.8	.1	.3
<i>N</i>	6	16	1	4

Contributing Elements

The elderly are not a monolithic group; the section above analyzed differences in travel behavior by cohort and residential location. However, the socio-demographic data presented in the first, introductory, part of this report suggest that sex, race, and ethnicity may create significantly different travel patterns among elderly travellers. The following section evaluates differences in key measures of travel behavior first by sex, then by license holding, and then by sex, race, and ethnicity.

It is important to note that disaggregating the NPTS data to this level sometimes creates cells with a very small number of respondents. Therefore, interesting or even counter-intuitive findings could well reflect a sample size problem.

Differences by Sex

The more aggregate data above have already shown some important differences between male and female seniors. This section focuses more clearly on differences in an array of indicators of travel behavior. First, Table 15 shows that while women and men's travel mode choices are similar, they are not the same. Both men and women depend on the car for the overwhelming percentage of their trips; however women are slightly less dependent—although not as much less as might be expected given licensing (and income) differences. Other NPTS data show that although 10% fewer women 65-69 and 30% fewer of those above 70 had a license, they were almost as likely to take their trips in cars as comparable men, clearly more as a passenger.

Although women were slightly more likely to use public transit and taxis, the largest and most important difference between men and women lies in the use of walking as a purposeful mode—women walked for the trips which they did not take in a private vehicle.

Table 15 Travel Modes for All Trips by Sex for Those over 65, 1990

MODE	URBAN			RURAL		
	ALL	Men	Women	ALL	Men	Women
Private Vehicle	88.3%	89.9%	86.8%	94.0%	95.0%	93.1%
Public Transit	2.5	2.4	2.6	.5	.2	.7
Taxi	.4	.2	.5	.4	.3	.5
Walking	8.1	6.8	9.2	4.1	2.6	5.6
All Others	---	---	---	---	---	---

Source: Trip Files

Table 16 presents data on differences in the *distribution of person and vehicle trips* for men and women in urban areas. Although there are differences, they are not large; the relative importance of the various trips is almost identical. Men make only slightly fewer shopping trips and slightly more social trips while women make slightly more church-related and medical trips. Given how many trips of both sexes are made in a private vehicle, it is not surprising that vehicle and person trip distribution are almost the same.

Table 17 examines three indices of travel behavior: *daily person trips, daily person miles, and daily vehicle trips*. Here the differences between the sexes are far more clear cut. Men over 65 take more person and vehicle trips and cover more miles than comparable women in every cohort of the elderly. Overall, elderly men make 24% more person trips, travel 19% more miles, and make 94% more vehicle trips. The gap between the sexes widens after 75; for example, there is a 12% difference in person trips among those 70-74 but a 67% difference among those over 85. The differences are greatest for vehicle trips; men 80-84 make four times the vehicle trips made by comparable women.

Table 17 also has another clear message; trip making declines substantially as people age, with the biggest decline seen among those over 85. Men 65-69 make more than twice the number of person trips travelling more than three times the number of miles as men over 85. Women 65-69 make almost four times the number of person trips and nine times the number of vehicle trips as women over 85. Interestingly between 65 and 75 men's travel dropped faster than women's on all three indices.

Table 18 presents similar data for rural areas. Although as a group both elderly men and women in rural areas make fewer person trips and roughly the same number of vehicle trips as their urban counterparts, they travel more miles. However, most of the same trends identified above can be seen in rural patterns: travel declines as people age, men's initially declines more than women's, and there are important differences between the sexes in all age-cohorts.

Table 16 Distribution of Urban Vehicle and Person Trips Without Work Trips by People 65+ by Sex, 1990

TRIP PURPOSE	VEHICLE TRIPS			PERSON TRIPS		
	ALL	Men	Women	ALL	Men	Women
Shopping	34.1%	33.6%	34.4%	33.8%	33.0%	34.5%
Combined Social	29.5	30.5	28.6	30.6	31.8	29.6
Family/Business	24.6	26.2	23.1	23.4	25.1	22.0
School/Church	7.5	5.9	8.9	7.3	5.6	8.7
Medical	3.2	2.8	3.6	3.2	2.7	3.7
All Others	1.1	1.0	1.4	1.7	1.8	1.5

Source: Person Files.

However, there are some interesting differences between urban and rural elderly travellers. First, urban men below 70 make more person and vehicle trips than their rural counterparts but the reverse is true after 70. Second, travel declines among women more rapidly with age than it does in urban areas, which may more clearly show the drop caused by stopping work. For example, rural women's person miles dropped almost 33% from 60-64 to 65-69 while urban women 65-69 actually travelled more than slightly younger women!

The Impact of License Holding

Some of the large differences (seen above) between men and women among the older elderly may reflect differences in license holding since less than 60% of female NPTS respondents but over 70% of male respondents over 70 have licenses. Figure 3 shows the travel behavior of urban men and women over 60 by their license holding status. In urban areas, in every age category men with licenses make more person trips than women with licenses and the differences intensify with increasing age. However, the differences between those without licenses in urban areas move in unexpected directions. Women between 65 and 74 and over 80 who do not have licenses travel *more* than comparable men.

Figure 4 shows comparable data for elderly people in rural areas displaying some interesting contrasts to urban data. Men with licenses travel more than women with licenses *but* only until the age of 80 when older women with licenses travel more than comparable men. However, the gap between licensed men and women younger than 80 is greater in rural areas than in urban areas. In short, having a license explains

Table 17 Key Parameters of Urban Travel, by Sex and Cohort over 60, 1990

AGE COHORTS	AVERAGE DAILY PERSON TRIPS		AVERAGE DAILY MILES TRAVELLED		AVERAGE DAILY VEHICLE TRIPS	
	Men	Women	Men	Women	Men	Women
Average 65+	2.23	1.80	16.02	13.48	1.82	.94
60-64	3.00	2.48	28.52	16.46	2.57	1.54
65-69	2.64	2.26	20.01	20.46	2.22	1.21
70-74	2.26	2.01	14.21	14.97	1.86	1.07
75-79	1.99	1.60	14.31	9.33	1.56	.92
80-84	1.56	1.08	14.11	3.57	1.14	.50
85+	1.10	.66	4.11	2.52	.73	.14

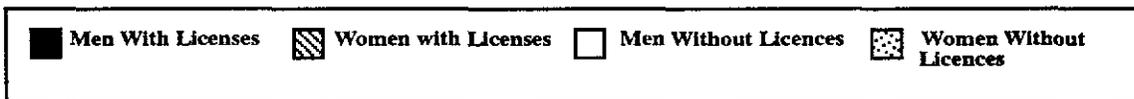
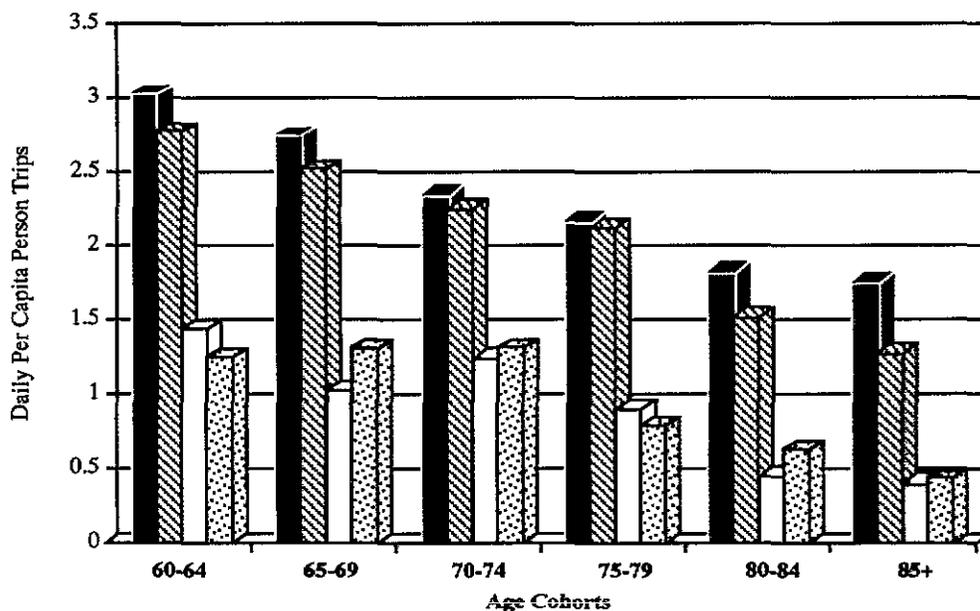
Source: Person Files.

Table 18 Key Parameters of Rural Travel, by Sex and Cohort over 60, 1990

AGE COHORTS	AVERAGE DAILY PERSON TRIPS		AVERAGE DAILY MILES TRAVELLED		AVERAGE DAILY VEHICLE TRIPS	
	Men	Women	Men	Women	Men	Women
Average 65+	2.19	1.69	23.88	13.49	1.82	.98
60-64	2.79	2.53	32.25	24.29	2.51	1.57
65-69	2.46	2.10	27.41	18.27	2.11	1.29
70-74	2.47	2.07	23.64	15.59	2.15	1.29
75-79	2.10	1.31	27.57	10.63	1.74	.60
80-84	1.55	1.10	12.36	6.78	1.09	.59
85+	.65	.73	10.73	5.16	.36	.23

Source: Person Files.

Figure 3 Daily Per Capita Urban Person Trips, by Sex and License Holding



some but not all of the differences between men and women's travel rates in urban areas and far less of the differences in rural areas.

Table 19 shows the impact of having a license by calculating the increase in trip making that accompanies license holding among urban elderly travellers. Clearly, having a license substantially increases the number of trips and miles travelled. However, it is interesting to note that having a license has more impact on the *trip rate of men* but on the *miles travelled by women*. Overall both the trips and miles of men over 65 almost double when they have a license but the trip rates of women only (!) go up 135%.

The Table does clearly show how much impact the license—or the physical and financial ability to drive and maintain a car—has on much older people: men over 85 with licenses travel three times as much as men without licenses while women over 85 with licenses travel almost ten times more than those without.

Tables 20 and 21 show the actual person trip rates of older men and women who do and do not have licenses; the former presents urban data and the latter presents rural data. The specific data make clear that the most significant drop in travel occurs at the age of 80 for both men and women and in both urban and rural areas (with the exception of rural women over 85).

Figure 4 Daily Per Capita Rural Person Trips, by Sex and License Holding

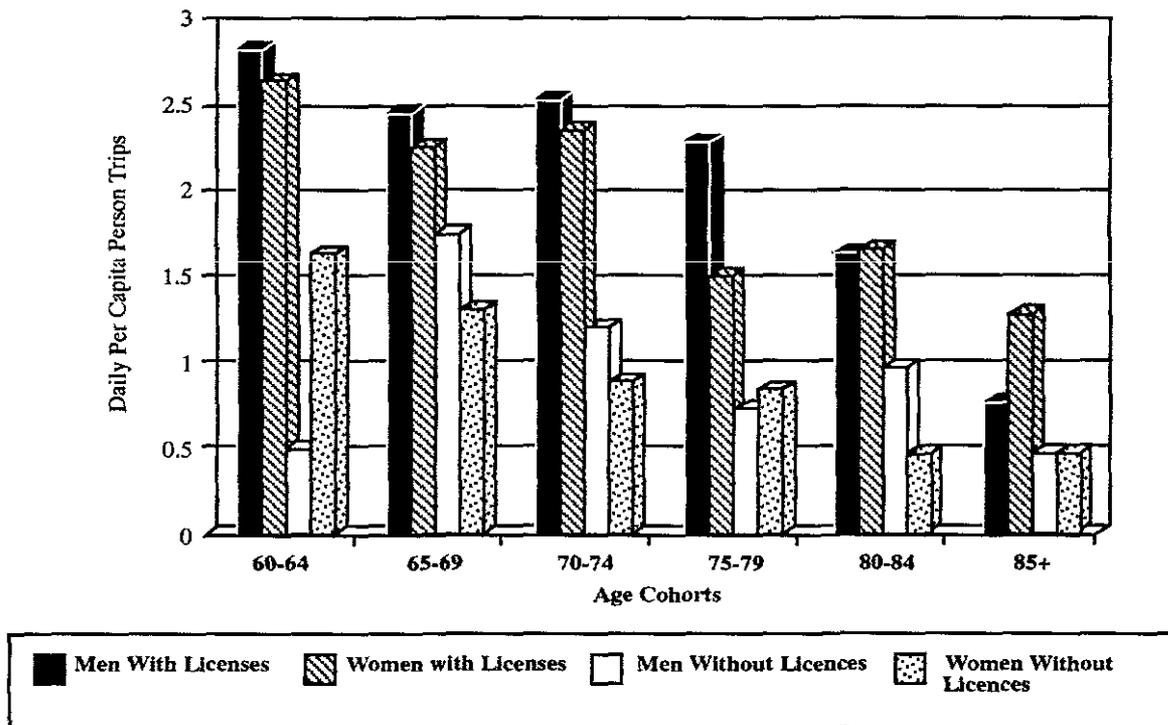


Table 19 Increased Travel by Urban License Holders, by Sex, 1990

AGE COHORTS	MEN		WOMEN	
	Person Trips	Person Miles	Person Trips	Person Miles
TOTAL 65+	185.9%	199.1%	135.5%	216.2%
60-64	108.8	219.3	122.8	105.3
65-69	166.3	55.5	93.2	232.1
70-74	88.8	94.8	72.2	14.3
75-79	135.9	832.4	161.4	303.8
80-84	243.4	293.1	140.6	466.0
85+	288.9	318.3	166.7	909.8

Source: Person Files

Table 20 Daily Per Capita Person Trips, by Sex and License Holding, Urban

AGE COHORTS	MEN		WOMEN	
	With	Without License	With	Without License
65+	2.43	.85	2.29	.96
60-64	3.09	1.48	2.83	1.27
65-69	2.77	1.04	2.57	1.33
70-74	2.36	1.25	2.29	1.33
75-79	2.17	.92	2.17	.83
80-84	1.82	.53	1.54	.64
85+	1.75	.45	1.28	.48

Source: Person Files

Table 21 Daily Per Capita Person Trips, by Sex and License Holding, Rural

AGE COHORTS	MEN		WOMEN	
	With	Without License	With	Without License
65+	2.31	.95	2.08	.81
60-64	2.86	.50	2.67	1.64
65-69	2.49	1.77	2.28	1.31
70-74	2.55	1.21	2.39	.89
75-79	2.28	.72	1.53	.84
80-84	1.63	1.00	1.67	.48
85+	.75	.47	1.29	.51

Source: Person Files

Race and Ethnicity

There is growing evidence that younger travellers with different racial and ethnic backgrounds have different travel patterns—patterns which they may well retain as they age. Moreover, a body of work shows that ethnic families behave differently toward their elderly relatives, creating different expectations among seniors about the travel and other assistance they will get from family members. Therefore, this sub-section evaluates the impact of race and ethnicity on travel patterns.

The relevant data in the NPTS are organized to include Hispanics, who can be of any race, and then separately, White, Black, and races Other than White or Black. For purposes of comparison, these data are shown together in the Tables in this section. Note however, that 1) data on Hispanics were originally compiled separately, and 2) that there are Hispanics among both the Black and White data shown in these tables—in other words these are not mutually exclusive categories.

Table 22 first introduces the issue of race and ethnicity. The data clearly show that all ethnicities and races other than whites depend significantly less on the private vehicle—although most trips are still made in a car and all elderly people are more likely to walk than to take transit. Interestingly Hispanics and Blacks are more likely to use a taxi for their trips than whites, but the numbers are still small.

Table 22 Urban Travel Mode for All Trips, Those over 65 by Race and Ethnicity, 1990

MODE	HISPANIC (Any Race)	WHITE	BLACK	OTHER
	Private Vehicle	81.4%	89.9%	70.3%
Transit	4.0	1.5	13.6	14.0
Walk	11.3	7.6	14.6	13.4
Taxi	.6	.4	.8	---
All Others	2.7	.6	.7	2.2

Source: Trip Files.

Table 23 analyses the travel mode chosen by elders of different races and ethnic backgrounds for two trips which account for almost 70% of non-work travel—shopping and family/personal business. As in the aggregate totals, whites use the car for a greater percentage of these trips and are less likely to walk than those of other racial or ethnic backgrounds. Interestingly, there is some difference in mode choice for the two trips; for example, Blacks make just under 71% of their shopping trips but almost 77% of their family/personal business trips using a private vehicle. In fact, in all cases elderly travellers are more likely to use alternative modes for shopping, usually walking (although seniors of races other than Black or White are more likely to use transit if they don't go in a car).

Table 24 disaggregates these figures further to examine differences between the sexes. As in the Tables above there are major differences between white seniors and those of other racial or ethnic backgrounds but there is far less difference between men and women within each group, with one exception: Hispanic women are significantly less likely to use a private vehicle than are comparable men. Interestingly, women of all backgrounds are more likely to use taxis and generally more likely to use transit than comparable men, with one exception: Black older women use transit for slightly fewer of their trips than Black men.

Table 25 analyzes the travel mode chosen by elderly of different backgrounds for the two major non-work trips—although it should be noted that there are sample size problems in this level of disaggregation. Again, most of the patterns seen in the Tables above are seen here but it is clear that there are important differences between men and women within each group and between types of trips. First, some of the differences between whites and all other seniors are now seen to be as much the differences between the sexes within each group. For example, for personal/family business trips Hispanic women are substantially less likely to travel in a car than are Hispanic men.

Conversely Black senior women are *more* likely to use a car for shopping trips than comparable men. Hispanic older women are much more likely to use a taxi for shopping trips than any other men or women while Black women and those of other races are substantially more likely to use transit for shopping.

Table 23 Travel Mode for Urban Shopping and Family/Personal Business Trips, Those 65+, by Race and Ethnicity

MODE	HISPANIC (Any Race)		WHITE		BLACK		OTHER	
	Shopping	Business	Shopping	Business	Shopping	Business	Shopping	Business
Private Vehicle	80.6%	85.0%	90.6%	91.3%	70.7%	76.7%	70.3%	77.8%
Transit	5.6	3.3	1.1	.5	11.4	13.7	18.9	14.8
Walk	11.1	11.7	7.7	8.2	16.3	9.6	8.1	7.4
Taxi	2.8	---	.2	.3	---	---	---	---
All Others	0.0	0.0	.4	0.0	1.6	0.0	2.7	0.0

Source: Trip Files.

Table 24 Urban Travel Mode for All Trips, Those over 65, by Sex, Race, and Ethnicity

MODE	HISPANIC (Any Race)		WHITE		BLACK		OTHER	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
Private Vehicle	85.6%	74.2%	91.6%	88.4%	71.0%	69.7%	70.7%	70.0%
Transit	3.6	4.6	1.4	1.7	13.7	13.5	12.1	16.3
Walk	9.0	15.2	6.2	8.7	13.7	15.4	14.1	12.5
Taxi	---	1.5	.2	.5	---	1.4	---	1.2
All Others	1.8	4.5	.6	.7	1.6	0.0	3.1	0.0

Source: Trip Files.

Table 25 Urban Travel Mode for Selected Trips, Those over 65, by Sex, Race, and Ethnicity

Race and Sex		PRIVATE VEHICLE		TRANSIT		WALK		TAXI		OTHER	
		Shop.	Pers. Bus.	Shop.	Pers. Bus.	Shop.	Pers. Bus.	Shop.	Pers. Bus.	Shop.	Pers. Bus.
HISPANIC <small>(All Races)</small>	MEN	81.8%	94.9%	0.0%	5.1%	18.2%	0.0%	---	---	0.0	0.0
	WOMEN	78.6	66.7	14.3	---	---	33.3	7.1	---	0.0	0.0
WHITE	MEN	93.1	96.2	.8	.6	5.6	2.9	.2	---	.3	.3
	WOMEN	88.5	92.3	1.4	2.1	9.5	4.7	.3	.6	.3	.3
BLACK	MEN	76.8	76.3	3.6	15.8	16.1	7.9	---	---	.3	0.0
	WOMEN	65.7	77.1	17.9	11.4	16.4	11.4	---	---	0.0	.1
OTHER	MEN	77.8	79.0	11.1	15.8	11.1	5.3	---	---	0.0	0.0
	WOMEN	63.2	75.0	26.3	12.5	5.3	12.5	---	---	5.2	0.0

Table 26 evaluates whether these racial/ethnic as well as gender differences are seen in other measures of urban travel; the Table summarizes the daily travel patterns of various groups of older men and women. White seniors of both sexes make more vehicle and person trips and travel more miles than other racial and ethnic groups (with the single exception of vehicle trips by men of other races). At the same time, women make fewer trips and travel fewer miles than comparable men in all but one of the groupings. However because white seniors travel so much more than other seniors, white women make more person trips than men in any other group.

The Table also shows that the gap in travel between the sexes is not uniform across racial and ethnic groups; in general white men and women are more similar than are the sexes of other racial and ethnic backgrounds. For example, white senior women travel 86% of the person miles of white men but Black women travel only 50% of the person miles of comparable men. White older men make 21% more daily person trips than comparable women but Hispanic older men make more than twice the person trips of comparable Hispanic women (compared to Black men who make 47% more trips than Black women).

Income Effects

Since we know that there are great income disparities among those over 65—with women and minorities more likely to be poor—it is possible that some or all of the differences seen in the previous sections of this paper actually represent differences in income rather than the impact of sex or racial/ethnic background or residential location. This section evaluates the impact of income on travel differences among those living in urban and rural places, the sexes, and those of different racial and ethnic backgrounds. Unfortunately examining travel differences by income as well as residential location, etc. creates fairly small samples, especially at the extremes of the spectrum. Therefore, it is often difficult to know if variations from overall trends result from sample size problems or represent genuine differences in travel behavior among different groups of older Americans.

Table 26 Key Parameters of Urban Travel by Those 65+, by Sex, Race, and Ethnicity, 1990

<i>Race</i>	DAILY PERSON TRIPS		PERSON MILES		DAILY VEHICLE TRIPS	
	Men	Women	Men	Women	Men	Women
HISPANIC (All Races)	1.88	.92	7.63	4.25	1.31	.46
WHITE	2.29	1.89	16.83	14.58	1.91	1.02
BLACK	1.73	1.18	9.45	4.69	1.17	.41
OTHER	1.65	1.10	8.53	8.50	.98	.38

It is generally thought that as income increases so do a) overall travel and b) use of the car. Table 27 shows that traditional ideas about the effect of income on the travel patterns of older Americans hold in the aggregate, although there are meaningful differences between otherwise comparable rural and urban areas. The Table gives the average annual miles driven by each of 11 income groups; overall both urban and rural travellers drive more with increasing income. Older urban travellers with household incomes over \$70,000 drive 233% more miles than those with incomes under \$5,000 and 34% more than those with incomes between \$25-30,000. In rural areas those with incomes between \$25-30,000 drive 3,555 more miles a year than those with incomes between \$10-15,000 and 895 fewer miles than rural elders making over \$70,000.

Table 28 questions whether income differences explain the travel differences seen earlier between men and women. The Table's data confirm that, *in general*, there is a positive relationship between income and travel use for older Americans of both sexes; as household income rises so do personal trips and personal and vehicle miles for both men and women. However, 1) the increase in travel and auto use is far greater for men than for women, and as a consequence, 2) there are important differences between comparable men and women.

At the very lowest income level women make more trips and travel longer; under \$10,000 they produce more person miles as well. But at almost all other income levels men travel much longer and more often in a vehicle; for example, men in households with incomes between \$20-25,000 make almost 12% more person trips, travelling 8% more person miles and 182% more vehicle miles (making 115% more vehicle trips) than comparable older women.

It is among households with incomes between \$30-60,000 that we see the most interesting differences between men and women. While total average vehicle miles continue to rise substantially with income among men, they actually fall for women. In addition, women don't exhibit as clear a relationship between personal miles and vehicle miles travelled as comparable men; for example older women in households making between \$30-40,000 travel almost *five times* (ie 500%) as many personal as vehicle miles daily³⁵. No income grouping of men over \$5,000 travel as much as 50% more personal than vehicle miles.

Table 27 Average Annual Miles Driven by People over 65 in Urban and Rural Areas, by Income, 1990

<i>Household Income</i>	URBAN		RURAL	
	<i>N</i>	<i>Average Miles</i>	<i>N</i>	<i>Average Miles</i>
Under \$5,000	15	2,986	35	2,434
\$5-10,000	186	4,251	153	4,419
\$10-15,000	213	4,455	191	6,815
\$15-20,000	217	6,543	172	7,015
\$20-25,000	166	7,300	112	8,125
\$25-30,000	139	7,385	98	10,367
\$30-40,000	242	7,368	148	10,394
\$40-50,000	117	8,258	61	9,207
\$50-60,000	75	7,731	32	8,178
\$60-70,000	55	10,107	18	8,444
\$70,000+	97	9,932	42	11,262

Table 28 Key Parameters of Urban Travel by Those over 65, by Sex and Income, 1990

<i>Household Income</i>	PERSON TRIPS		PERSON MILES		VEHICLE MILES	
	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>
Under \$5,000	.69	1.02	1.58	2.00	.75	.99
\$5-10,000	1.88	1.52	6.09	7.93	5.29	3.89
\$10-15,000	1.77	1.71	12.77	6.45	10.85	3.16
\$15-20,000	1.95	1.88	19.33	21.68	9.62	3.98
\$20-25,000	2.51	2.25	17.24	12.84	11.85	4.20
\$25-30,000	2.67	2.24	17.71	15.08	12.82	7.24
\$30-40,000	2.59	2.52	15.49	28.65	12.92	5.84
\$40-50,000	3.10	2.00	14.85	13.45	12.80	5.73
\$50-60,000	2.65	2.38	23.67	9.92	17.92	3.90
\$60-70,000	2.98	1.72	38.19	28.70	27.68	6.05
\$70,000+	2.71	1.76	29.19	36.79	25.87	5.62

Suburban elders are better off financially than those living in the central cities so Table 29 questions whether the aggregate differences seen in previous sections are actually the result of income differences between metropolitan elders. Although there are clearly sample size issues, the Table shows, that as in previous analyses, men and women have different driving patterns and the gap between the sexes is greater at higher household incomes. But the more important point made by this table: in all but the highest and lowest income categories suburban men drive more, often substantially more, than their central city counterparts. For example, suburban men with household incomes between \$25-30,000 drive 55% more miles than their suburban counterparts. (The differences at the extremes of the income scale may result from sample size problems).

The Table also shows that suburban women also drive more than comparable central city women in all but three income categories although the gap is not generally as wide as that seen among men. For example, suburban women with household incomes of \$40-50,000 drive 44% more miles than comparable central city women; however among those with incomes between \$25-30,000, suburban women drive only 7% more than their central city counterparts.

Table 29 Annual Miles Driven by People 65+ Living in Urban Areas, by Sex and Income, 1990

	CENTRAL CITY				SUBURBS			
	WOMEN		MEN		WOMEN		MEN	
	Miles	N	Miles	N	Miles	N	Miles	N
Under \$5,000	1,943	7	5,500	2	2,567	3	4,167	3
\$5-10,000	3,059	76	4,986	54	4,883	36	5,655	36
\$10-15,000	3,901	66	5,714	61	2,300	49	6,223	49
\$15-20,000	4,230	59	4,230	60	4,547	40	7,224	40
\$20-25,000	3,765	41	9,673	48	4,034	35	10,761	35
\$25-30,000	4,077	33	7,055	30	5,585	30	10,955	30
\$30-40,000	5,237	66	9,118	57	4,606	55	9,834	55
\$40-50,000	4,228	22	9,762	42	6,080	21	10,482	21
\$50-60,000	4,433	18	9,175	20	5,465	14	10,436	14
\$60-70,000	6,400	11	14,923	13	6,600	12	11,174	12
\$70,000 Plus	5,925	20	18,760	26	3,577	22	9,605	22

Table 30 aggregates income groupings in order to look at the impact of income on the racial and ethnic differences seen in earlier sections of this report; because of sample size problems, without such groupings there are very few other-than-White respondents in each income category. The Table shows that there is clear and positive relationship between household income and average annual miles driven by older men and women in most racial and ethnic groups; in general as income rises so do miles driven.

However, there is a substantial difference between White men and all other men; their average milage starts higher and climbs more quickly with income. White men in households making under \$20,000 travel 63% more miles than comparable Hispanic men and 36% more than Black men. At household incomes between \$20-40,000, White men travel 177% more miles than comparable Hispanic men and 79% more than Black men. Most telling: while White men in households making over \$40,000 drive 4,650 (or 64%) more miles than comparable men with incomes below \$20,000, the difference among Blacks is only 1,065 miles or 20% more.

The Table also shows that household income does not appear to explain the differences among men and women in the same group nor between groups of older women. In almost all income groupings men drive substantially more than comparable women (with two exceptions); for example, Hispanic older women in households making over \$40,000 drive, on average, 64% fewer miles than comparable men. White women from such households drive 56% less than comparable men—but also 57% less than comparable Other women and 17 % less than Hispanic women.

Table 30 Average Annual Miles Driven by People 65+ Living in Urban Areas, by Sex, Race, Ethnicity, and Income, 1990

INCOME	HISPANIC		WHITE		BLACK		OTHER	
	N	Miles	N	Miles	N	Miles	N	Miles
Under \$20,000								
<i>Men</i>	27	4,482	669	7,295	57	5,374	29	4,513
<i>Women</i>	35	3,385	1,102	3,920	112	4,633	29	3,950
\$20-40,000								
<i>Men</i>	16	3,983	552	11,029	25	6,158	18	3,873
<i>Women</i>	19	4,156	589	5,151	19	667	15	7,400
Over \$40,000								
<i>Men</i>	7	17,571	310	11,945	15	6,439	11	14,889
<i>Women</i>	11	6,083	282	5,218	19	3,300	17	8,188

Figure 5 illustrates the average daily person trip rates of women from various backgrounds in the three aggregate income groupings; as expected, travel goes up as income goes up. However, the increased number of daily trips is very small for Hispanic elders (from 1.26 to 1.27) and not much greater for Black elders (from 1.2 to 1.4). It is clear that the daily trip rate for White women is substantially higher than all other ethnic groups, with the largest difference in the \$20-40,000 range. However even at household incomes above \$40,000 White women make 65% more trips (2.1) than Hispanic women (1.27) and 50% more trips than Black women (1.4).

Figure 6 is the comparable figure for men from various backgrounds; here the pattern is not so clear. It is only among White older men that we see the expected relationship between increasing income and travel; among other-than-White male elders the highest trip rate is at the low-middle income grouping. White men generally have higher trip rates than other men regardless of household income but at incomes between \$20-40,000 the gap is much less than that seen among older women. The gap between White and all other men is also slightly less than that experienced by women at incomes above \$40,000; in that income group White older men make 3.02 trips per day, 62% more trips than Hispanic (1.86) and 67% more trips than comparable Black men (1.60).

The two Figures taken together also show that, regardless of household income, older women generally travel substantially less than comparable men. At incomes below \$20,000 White women make 1.66 trips per day compared to 1.98 trips by White men; at incomes above \$40,000 White women make 2.10 trips compared to 3.02 trips made by men. Only at incomes below \$20,000 do Hispanic women make more

Figure 5 Average Daily Person Trips, Total, by Women over 65, by Race and Ethnicity, 1990

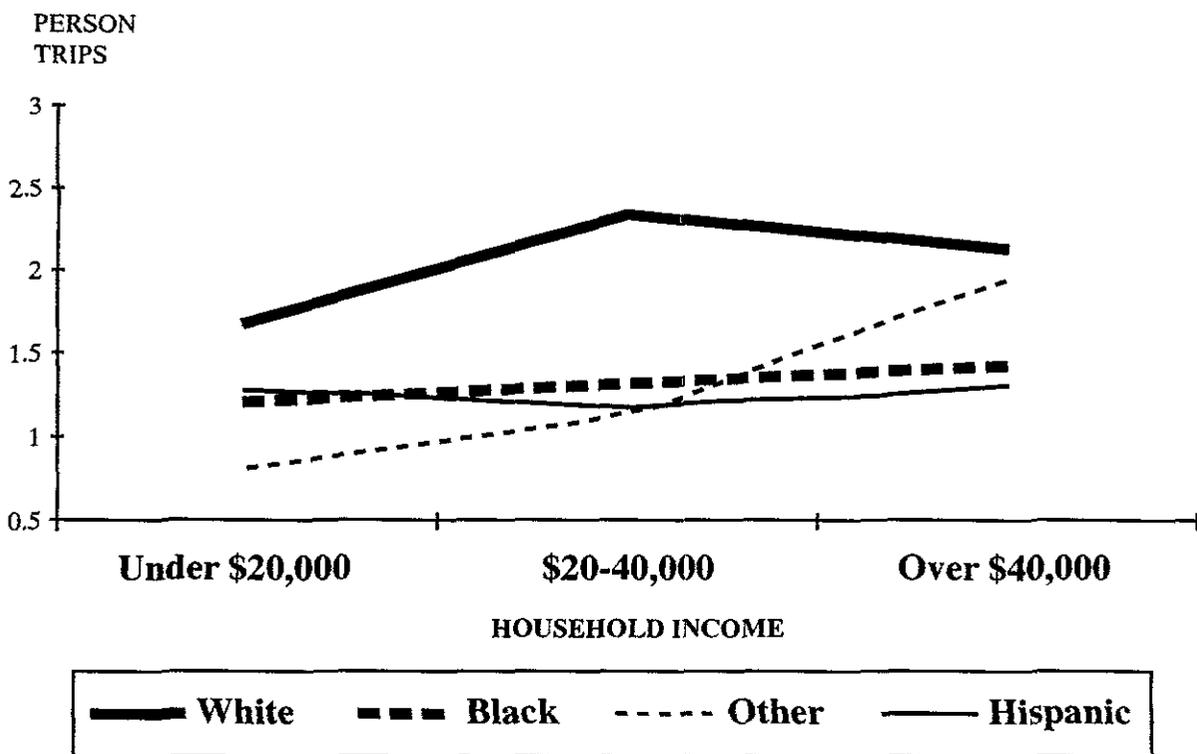
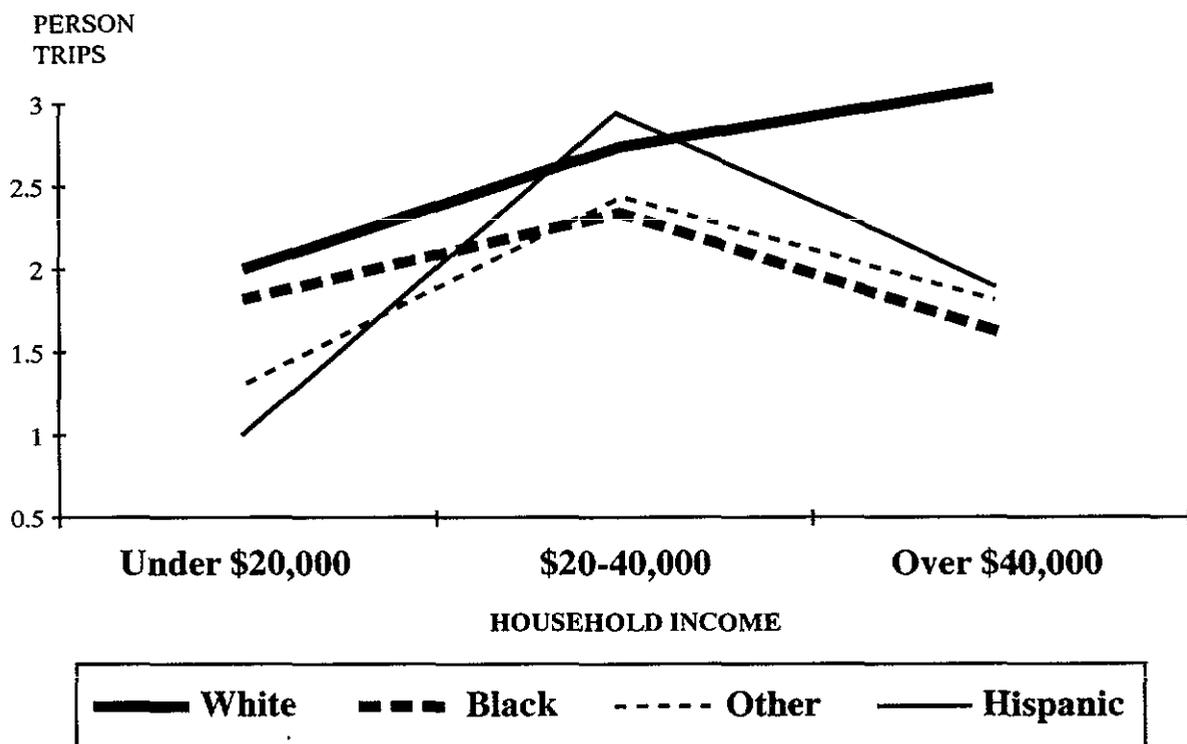


Figure 6 Average Daily Person Trips, Total, by Men over 65, by Race and Ethnicity, 1990



trips than Hispanic men; at incomes between \$20-40,000 Hispanic women make 1.16 trips compared to 2.90 trips made by Hispanic men.

However the most important message of these figures is that there are racial and ethnic differences in travel among older Americans which are not explained by household income. Income does have some of the postulated effect—travel increases as income does—but other factors also seem to be at work.

However, it must be noted that the aggregations shown in these graphics are very gross; it is possible that certain groups are disproportionately represented in the lower end of each income grouping. Moreover, 1) the numbers of other-than-White elders are relatively small, 2) there is no control for age although we would expect that more of the women are very old (trip-making declines with age regardless of income), and 3) we have not taken account of differences in residential living patterns (ie it is possible that certain groups are more likely to live in denser central cities which would more affect their trip length and choice of mode). Thus the way the data are grouped could, in fact, be “creating” the results rather than demonstrating actual differences among the elderly.

In summary, however, the data in this section suggest that household income does not explain all or even a great deal of the differences described earlier between older men and women, and among elders from different ethnic and racial backgrounds.

Findings and Conclusions

Summary

The elderly are the fastest growing component of the U.S population and the very old are the fastest growing component of the elderly. Most elderly people today are drivers and over three fourths live in low density suburban or non-metropolitan places—places where the use of the private car is either encouraged or absolutely necessary. Although a declining *percentage* of the elderly live in rural areas, there is often a high *concentration* of elderly in the rural areas where they do live—areas where they face severe isolation if they lack transportation options.

The diversity seen among younger Americans is increasingly being seen among those now elderly and there is little doubt that it will increase in the future. Cultural and ethnic preferences have important transportation implications; people will bring to their senior years the social, personal, and recreational patterns shaped by these preferences—including their traditional travel patterns—which include a very significant dependence on the private vehicle.

Over the last three decades the overall physical, educational, and financial status of the elderly has improved markedly but women and people of color have not shared proportionately. Women comprise the largest component of the very old and the largest component of those living in poverty. Elderly women are many times more likely to live alone and rent rather than own their homes. All of these socio-economic factors also have important transportation implications.

The 1990 NPTS data show an elderly population whose reliance on the car has become more intense since 1983; no cohort of the elderly took less than 75% of all trips in a private vehicle as either a passenger or driver. Conversely, the elderly were even less likely to use public transit for their trips than ever before; no cohort of the elderly used transit for more than 5% of their trips and the average was substantially less. Although walking was the mode of second choice, its importance fell by one-third in urban areas and one-fourth in rural areas.

Linked to the use of the car is the increasing mobility of the elderly; the elderly as a group drove 20% more miles than they had in 1983 while those over 70 drove 40% more. Even the very old were driving a substantial number of miles each day. Rural elders were even more mobile than their urban counterparts and the gap tended to increase as both groups aged. On the other hand, it was clear that trip-making dropped substantially as people aged, with the biggest decrease occurring when people hit 85.

The NPTS data also show that there were important travel differences between the travel patterns of older men and women. Overall, elderly men took 24% more person trips, travelled 19% more miles, and made 94% more vehicle trips than elderly women. In spite of these differences, and even though fewer older women had licenses, women took almost as great a percentage of their trips in a private vehicle.

The data clearly show that having a drivers license is associated with substantial increases in the number of person trips and person and vehicle miles—the trip rates of men with licenses was almost double those of men without. The impact was especially important for the very old—men over 85 with licenses made three times as many trips as comparable men without licenses.

The NPTS data also show that Whites are substantially more dependent on the private car than are Hispanics, Blacks, or other races—although all groups make more of their trips in a car than any other mode. White seniors of both sexes make more vehicle and person trips and travel more miles than any other ethnic or racial grouping. Moreover, white men and women have more similar patterns than the sexes within other groupings; White men make 21% more person trips than comparable females but Black men make almost 100% more trips than Black women.

Overall, older Americans exhibit some common transportation patterns—but beneath the aggregate trends are variables either moving more slowly for some groups of the elderly or actually moving in a different direction. Ultimately, the elderly are as diverse in their travel patterns as they are in their lifestyles. It seems clear that different experiences, resources, and expectations have, and will continue to, create wide variations in the transportation patterns and needs of those over 65 in the next century.

Implications of Trends in the Elderly Population

These findings raise several major questions. First, to what extent are the differences among the elderly a function of choice and to what extent necessity? Are older people being forced to drive, or use transit, or to walk for the lack of an alternative that they would find preferable? If we know that people would actually prefer, for example, to *walk* for more of their trips, public investments in sidewalks and other pedestrian facilities, not to mention longer term land use changes, would make more sense than comparable investments in transit service. If we know that older people would prefer to drive for as long as possible, we may make other investment and policy choices. And, if some seniors would prefer to walk while others would prefer to drive, we have still a different set of (difficult) choices.

Second, we need to know if current sex, race, and ethnic differences in travel patterns are an artifact of a different (older) generation or if they are a reflection of important cultural norms and expectations held by younger cohorts of the population. In the future will older women continue to drive less even if they have a license or are the lower travel rates among those now elderly simply “left over” from the days when women didn’t travel as much? Are the differences in travel rates between Hispanic men and women part of a cultural preference that is seen among younger Hispanics? Will people of color always rely less on the private vehicle than Whites?

Third, it would be very useful to know if the upward trends among the elderly in all aspects of travel will continue, and if they will continue, what the intensity of growth will be. At some point, the total *rate* of growth must drop, but will trip and vehicle indices continue to rise? And if they do, will the increase be the same for all groups of people in all settings?

Fourth, what is and will happen to older people living in low density places when they can no longer drive? No matter what their race or ethnic background elderly people take the majority of their trips in a car. Those who do not, or chose not, to drive are often given rides by other elderly people; sadly, one senior driver losing a license (or the ability to maintain a car) may create serious mobility problems for several other elderly travellers. What can possibly substitute for the level of mobility provided by the private vehicle?

Table 31 attempts to give some dimension to the problem of seniors losing their ability to drive (or find or ask for rides). The Table shows an analyses which computes how long it would take a senior to make his or her *average* shopping or medical or family business trip by car, by a high level transit system, and as a pedestrian. Although the table obscures some important variables (including the ability to substitute a closer store or doctor when driving skills are lost), the numbers should give us pause. Older Americans could simply not walk to meet any of these important needs—all of the times involved seem beyond the realm of possibility.

The Table shows that fairly high level transit service isn’t much help either. The transit column, merely for the purpose of analysis, assumes a ubiquitous route network which comes no farther than one block from where a person lives and one block from where s/he wants to go, and which requires no transfer. Even in the unlikely event that cities could provide that level of service, the transit alternative is a very poor substitute for the car. Almost every trip would take a half hour on the bus but only a few minutes in a car. Moreover, trips for groceries or to the doctor don’t seem very amenable to traditional transit use.

Table 31 Estimated Travelling Time for Selected Trip Purposes, by Alternative Modes in Urban Areas, 1990

Trip Purpose By Sex		AVERAGE PERSON MILES	MINUTES CONSUMED BY ALTERNATIVE MODES		
			Car	Ubiquitous Transit	Walking
SHOPPING	Men	3.58	7.2	28.2	71.6
	Women	3.56	7.1	28.1	71.2
PERSONAL/ FAMILY BUSINESS	Men	6.10	12.2	33.2	122.0
	Women	7.17	14.3	35.3	143.4
MEDICAL	Men	6.43	12.9	33.9	128.6
	Women	5.92	11.8	32.8	118.4
CHURCH	Men	4.77	9.5	30.5	95.4
	Women	3.53	7.1	28.1	70.6

Computed based on average Auto speed=30 MPH, average Transit speed=15 MPH + 21 minutes for walking two blocks and waiting 5 minutes, and Walking=3 MPH.

Policy Suggestions

The analyses presented above suggest that the lifestyles among the elderly which reflect ethnic, racial, cultural, and gender experiences and expectations may have important transportation ramifications. Most people will maintain those lifestyles and their traditional *travel* choices and patterns as they age. While most will drive, they may vary in the degree to which they offer rides to others, accept rides instead of driving, or use alternative transportation options. In addition, differences in cultural norms about family support may effect the amount of transportation assistance which elderly people are offered—or expect—from friends and relatives.

The analyses presented above lead to several major policy suggestions. *First*, most elderly will be car drivers—and will hold onto their cars and licenses as long as possible. Unfortunately, they may put themselves, and others, at risk to do so, both directly through traffic accidents, and indirectly, by spending rent or food money to maintain a car. A pragmatic, if not caring, society must respond by finding ways to make it safer for Older Americans to continue driving as long as they wish. Until society can offer realistic ways for elderly drivers to meet their mobility needs—and those of their passengers—without driving it is both unreasonable and unfair to expect them to give up their cars.

To begin, we must spend at least as much time improving the safety of cars and the road network as we do in trying to identify and remove bad drivers from the road. A National Academy of Sciences study concluded,

The roadway system—broadly construed to include street and highway design and operation, vehicle design and driver licensing—can be better adjusted to the needs and abilities of older drivers. Given the long lead time required to develop and phase in changes in the standards used for the roadway system, however, it is time to begin preparing for the mobility of a society that is already aging³⁴.

Such changes include identifying and evaluating the type, number, size, and location of traffic signs, the configuration of road networks and traffic devices (*eg* left turn lanes and priority signals) and in-vehicle improvements to compensate for declining visual acuity and other potential physical problems.

In addition, we have to consider assisting competent elderly drivers who have financial problems; the assistance can be direct (*e.g.*, subsidized insurance) or indirect—paying elderly drivers who provide rides to other elderly travellers. The State of Hawaii, for example, has a program which provides limited financial assistance to drivers with low incomes.

Second, we have to develop a range of alternative transportation options for those who cannot drive, or obtain rides from others, or who wish to decrease the amount of driving they do. While traditional transit options don't appear to offer much mobility to many travellers, they are useful in certain kinds of communities. In those cases, transit operators need to consider the needs of older travellers when they make route and service decisions, and they must pay serious attention to the safety and security concerns of these travellers. At the same time, communities must invest in different kinds of transit and paratransit options—smaller, accessible buses routed to the places where Older Americans like to go in a community, subsidized taxi voucher programs, organized non-work carpools, *etc.*

Third, we must develop mobility alternatives which are geared to the diversity of our older population. If some Older Americans, for example, wish to travel with family members, while others do not, we should be able to assist these travellers consistent with those desires. If more women are unable to drive or seek transportation assistance, we should develop solutions which stress the service attributes they seek (*for example*, security). Above all, we have to maximize the choices we offer the elderly.

Fourth, the link between housing and land use choices, on one hand, and transportation needs on the other must be made explicit in all policy discussions. While some analysts believe that land use policies may change the shape of American communities in ways that reduce the need for car thus benefitting the elderly, major land use changes do not seem likely even if we all agreed that they were desirable. Ironically, however, the elderly may be more willing to make the kind of moves that lead to different neighborhoods if given the choice; in many other developed countries older people are very likely to move when they leave the workforce—moving to communities that meet their new needs (*including declining ability or willingness to drive or travel*).

Most Older Americans have far less choice. Most can't move to smaller, more appropriate homes in their own neighborhood (*because almost everything is the same size and configuration*) or to more concentrated neighborhoods. Many of the retirement communities to which some seniors move lack on-site services, assuming that residents will drive to meet most needs—leaving when they cannot. In fact, most moves by older people are probably occasioned by their absolute inability to live alone in their own neighborhood—after years of problems in doing so. It seems likely that providing appropriate housing choices in safe areas with nearby services and businesses as well as adequate transit would address more of the transportation needs of older travellers than providing them with specialized transportation options.

Fifth, we must provide more pedestrian friendly neighborhoods—to allow Older Americans to walk to meet some of their needs, or to easily access public transit, or simply for recreational purposes. It is striking that even in suburban areas elderly travellers make as many as 7% of their trips on foot. Thus neighborhoods need sidewalks, special crossing facilities and traffic signals in areas with a large number of elderly people, and usable sidewalk furniture.

In summary, the growing diversity of the elderly population suggests the need for a more inclusive and comprehensive approach to mobility while the aging of a society so dependent on the automobile raises a host of very serious questions. The analyses presented here suggest that most of the easy answers to the problem of the mobility of Older Americans—more traditional transit, more special transit services—reflect a superficial understanding of how elderly people meet their needs and the constraints and barriers presented by their environment. Moreover, most easy answers assume an understanding of what elderly travellers *want*. Yet it is hard to examine these data and conclude that elderly travellers want anything less than the kind of choices they've had for all their lives, and, that younger travellers still have.

Notes

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