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Daily Travel by Persons with Low Income

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Summary

Persons in households with low incomes are much less likely to have a vehicle, largely in part because a greater proportion of their income is spent on shelter and food. About a quarter (26%) of low income households do not have a car, compared to 4% of other households. These low income households often are without regular telephone service because it is an additional expense. Thus, monthly payments for a car or car insurance would be very difficult to meet.

When these households have a car, the car is quite old. The average car is 10 years old in low income households, compared to 7.3 years for other households. However, in low income households, there is on average, only .7 vehicles per adult, compared to over 1 vehicle per adult in other households.

Despite having fewer vehicles, people in low income households still make most of their trips in private vehicles. These trips are much more likely to be made in a vehicle owned by someone else, like a friend or relative (8 percent for low income, compared to 1 percent for other income group).

The biggest difference in travel mode is in the proportion of walking trips. People in low income households are nearly twice as likely to walk as people in other income groups. For example, for work (and work-related) trips, low income households report 5 percent by walk, compared to 3 percent for other income groups. Low income households are also more likely to use transit to work (5 percent compared to 2 percent).

Because so many trips are made by walking, the space in which people in low income households travel is more constricted than for others. About 60 percent of their trips are 3 miles or less, compared to 50 percent for other households. For low income single parent households, about 66 percent of trips are 3 miles or less.

Introduction

Transportation is a critical element for everyone to accomplish tasks in their daily lives, including getting to work and school, and accessing goods and services. As we focus on moving people from welfare to work, we need to reduce transportation problems as a hindrance by improving accessibility and mobility for this group.

As a first step, we need to understand how people in poverty travel today. We used the 1995 Nationwide Personal Transportation Survey (NPTS) to provide a picture.

The poverty guidelines and poverty definitions used by the Bureau of the Census and Health and Human Services are based on before-tax cash income. Income measures ignore home ownership and other assets that can be important sources of consumption. The official poverty rate does not account for taxes or in-kind transfers such as food stamps or other government-provided medical insurance, which improve living conditions without affecting a family's official poverty status (1). For example, a person making \$10,000 a year who receives no public assistance is considered the same as a person making \$10,000 a year who received food-stamps and Medicaid benefits. Despite these definitional problems, we also used income as a measure to classify households into two groups: "low income" and "other (not low) income" for purposes of comparing daily travel behavior.

Data

The 1995 dataset includes 42,633 households. The NPTS does not include extensive questions about income sources or on assets. That is, there is no question specifically on whether the respondent received welfare payments, food stamps, etc. Income is asked only at the household level, not for each person, and is grouped in \$5000 increments.

Using the 1990 Census Public Use Microdata Sample (PUMS) and examining the household incomes by persons receiving public assistance, by household size, we categorized the 1995 NPTS households as follows:

Table 1
 Definition of "Low Income" Households for 1995 NPTS

Number of persons (regardless of age)	Household Income*
1-2 persons	Under \$10,000
3-4 persons	Under \$20,000
5+ persons	Under \$25,000

Using this definition, 4,721 households in the 1995 NPTS are classified as low income, and 639 households are classified as single parent low income households. Thus, any tables in this paper showing single parent low income households are subject to less accuracy than for the sample of low income households. The NPTS likely underrepresents single parent low income households because it is a telephone survey (2). Although nationwide, only 5 percent of households do not have a telephone, these households are concentrated amongst the poor and the rural areas. Among families receiving welfare, over 30 percent report not having continuous phone service.

The sample includes all ages, and households with and without children (Table 2). About 53 percent of the low income households have no children, and 47 percent have children. About 26 percent of the sample has a reference person age 65 and over, with no children present. For households headed by someone between age 21-29, 77 percent had 1 or more children; and for households headed by someone between 30-64, 61 percent had 1 or more children.

In the total sample (n = 42,033), African American households account for 11 percent, and Hispanic households account for 7.8 percent of the sample. For low income households, the proportion of African Americans is 23 percent, and for Hispanics, 14 percent. For the 639 households in the single parent low income group, about 32 percent are African American, and 20 percent are Hispanic, for a total for 52 percent in these two groups. Nearly 90 percent are with a female head. (Table 3a)

The low income population is much more likely to live in the traditional urban centers and in the "second cities," which are often areas that were early suburbs of the central city. In contrast, the suburban areas are much less likely to include the low income population (12 percent of the low income population compared to 24 percent for the total population). (Table 3b).

Table 2
 Low Income Households
 1995 NPTS

By Age of Reference Person and Number of Children

		0	1	2+	Total
Under 21	<i>sample</i>	79	25	21	125
	weighted	204,973	54,004	71,549	330,526
21-29	<i>sample</i>	205	221	356	782
	weighted	459,539	482,993	1,059,775	2,002,307
30-64	<i>sample</i>	983	497	1,075	2,555
	weighted	2,737,956	1,273,387	2,953,260	6,964,603
65+	<i>sample</i>	1,186	46	26	1,258
	weighted	3,435,884	137,991	78,603	3,652,478
Total	<i>sample</i>	2,453	789	1,479	4,721
	weighted	6,838,351	1,948,376	4,164,229	12,950,956

Table 3a
 Race and Hispanic Origin of NPTS Reference Person (in percent)
 1995 NPTS

Race	ALL	Low Income	Low Income Single Parent
Black, non-Hispanic	11.4	22.5	32.0
Hispanic	7.8	14.2	20.2
Asian	1.8	1.5	.9
Other	79.0	61.8	46.8
Total	100.0	100.0	100.0

Table 3b
 Neighborhood Type of NPTS Households (in percent)
 1995 NPTS

Race	ALL	Low Income	Low Income Single Parent
Urban	16.7	23.1	25.8
Second City	17.9	20.6	24.1
Suburban	24.4	11.8	14.7
Town	21.3	19.3	18.1
Rural	19.7	25.1	17.2
TOTAL	100.0	100.0	100.0

Travel by Persons with Low Income

In this paper, we will examine three basic characteristics:

1. Vehicle Availability,
2. Travel Mode and Vehicle Occupancy, and
3. Total trips and miles of travel.

Vehicle Availability

Probably, the most critical item that affects the mobility of low income persons is access to a car. The 1995 NPTS shows 26 percent of low income households did not have a car, compared to 4 percent of other households (Figure 1). When a low income household has a car, it is likely to be quite old. The average car is nearly 11 years old for low income households, compared to 8 years for other households. Not only are the vehicles older, but also, there are fewer vehicles available per adult: .7 vehicle per adult in low income households, compared to over 1 vehicle per adult in other households.

Table 4
Vehicle Availability
1995 NPTS

Income	TOTAL	Low	Other (not low)	Low Income Single Parent
Avg household size	2.58	2.73	2.57	3.28
Avg Num of Veh	1.78	1.16	1.89	0.72
Avg Veh Age	8.3	10.9	8.1	10.8
% of hhld w/o veh	8%	26%	4%	36%
Vehicles Per hhld	1.78	1.16	1.89	0.72
1 Adult hhld	.98	.66	1.09	0.72
2+ Adult hhld	2.11	1.59	2.18	--

Source: WRI_EM6.SAS

The difference in vehicle availability reflects the lack of discretionary money beyond expenditures for food and shelter. Households receiving public assistance spent \$15,304 on average during 1992-93. Nearly 60 percent was allocated to food and shelter. Transportation was the next largest share at 15 percent (\$2,296) of the total. Single parent households receiving public assistance spent nearly 70 percent on food and shelter, with only 10 percent for transportation. Households not receiving public assistance allocate 47 percent to food and shelter, and 19 percent to transportation (3).

Table 5.

Expenditure by HOUSEHOLDS by receipt of public assistance, presence of working members and family type, first quarter 1992 to first quarter 1994

Percent of expenditures

	Households receiving public assistance by					
	Receive Pub Assist	No Pub Assist	No workers	Some workers	Single parent	Dual parent
Food & Shelter	59.5	46.9	71.7	53.4	69.1	54.0
Transportation	15.3	19.2	9.5	19.1	10.2	19.6

Source: Family Economics and Nutrition Review 1997 Vol 10, No. 1, page 43

For people in poverty, even having a telephone is often a luxury that comes and goes. Among poor families (does not include people who live alone), 23 percent did not have on-going telephone service, compared to 3 percent of non-poor families. These proportions are nearly identical to the proportion of families without vehicles. (4)

Table 6.

Percent of families

	Non poor families	Poor families	Single-parent poor families	Families receiving welfare
Car/truck owner*	97.2	76.8	64.1	65.3
Telephone in home**	97.2	76.7	69.9	67.5

* SIPP 1992 **AHS 1993

Source: Monthly Labor Review May 1996, page 8

Travel mode and time to travel

This section covers: (a) Journey to work trips and (b) Other trips.

Journey to Work

Despite a greater likelihood to be without a car, people in low income households are still most likely to travel by private vehicles. For the work trip, 84 percent of trips by workers in low income households, compared to 90 percent in other households, use private vehicles (Figure 2). Average vehicle occupancy is somewhat higher for workers in low income households (1.20 vs. 1.15), but this may not be statistically significant. (Table 7) Average travel times by private vehicle for the journey to work do not vary by income group and average between 18 and 20 minutes.

Table 7.

Average Vehicle Occupancy for Private Vehicle Trips (Weighted by Miles)
1995 NPTS

	All	Low Income	Other (not low) income
Earning a living	1.16	1.20	1.15
Family & Personal Business	1.77	2.01	1.74
Social & Recreational	2.07	2.48	2.07
TOTAL*	1.59	1.85	1.57

*Not all trip purposes shown

Other differences in the travel mode to work are a) workers in low income households are much more likely to walk to work (6 percent compared to 3 percent), and b) are more likely to use public transit to get to work (5 percent compared to 2 percent) (Figure 2). The types of public transit trips by the two groups differ. For low income households, the public transit trips are likely to be by bus, and for other income households, more likely to be by train. Thus, the average trip distance for low income households using public transit is 10 miles, compared to 13 miles for other incomes; and the average travel time is 36 minutes for low income, compared to 43 minutes for other incomes.

During the last twenty years, the majority of employment growth has been in suburban areas, and much of the jobs for entry level workers have likewise been in the suburbs. Suburban

employment represents an increasing share of metropolitan employment. Case studies in Cleveland, and in Atlanta, have shown the mismatch between the residential location of welfare recipients and new employment locations in the region (5).

Other trips (non-work)

Travel mode for family and personal business, and social/recreation trips show an even greater propensity of low income households to walk. Walking is used for thirteen (13) percent of social and recreational trips and 9 percent of family and personal business for low income households. These proportions are nearly double for other (not low) income households, which report only 7 percent of social and recreational trips and 4 percent of family and personal business trips made by walking (Figures 3 and 4). Social and recreational trips for low income households are significantly shorter (on average) than for other households (Table 8).

Table 8
Average Trip Length in Miles
1995 NPTS

	ALL	Low Income	Other (not low) income
Family & Personal Business	6.83	5.94	6.86
Social & Recreation	10.70	8.05	11.16

Person trips in low income households are much more likely to be made as passengers in private vehicles, rather than as the driver (Figure 5). Part of this reflects the greater likelihood of children in the household. Trips made in private vehicles are much more likely to be in “non-household” vehicles, that is, in vehicles of friends, neighbors, or relatives. For low income households, nearly 9 percent of private vehicle trips are in “non-household” vehicles, compared to less than 1 percent for other income households. For low income single parent households, the proportion is about 17 percent. (Figure 6)

These results corroborate findings from the 1990 NPTS, showing that for persons in households without vehicles, more trips are typically made by private vehicles and by walking, than using public transportation. For example, for African Americans (age 16 and over), in households without a vehicle, 37 percent of trips were made by private vehicles, 37 percent of trips by walking, and 23 percent of trips by public transportation (6)

Annual person trips and person miles of travel

On a per person basis, people in low income households make about 20 percent fewer trips than people in other households (1,340 person trips compared to 1,648 person trips) (Table 9). However, because so many of these trips are by walking, the difference in person miles of travel is much more striking. People in low income households travel nearly 40 percent fewer miles (9,060 vs. 14,924 person miles). Also, since vehicle availability is also lower, VMT per household is about half that in non-low income households (11,594 miles compared to 23,427 miles).

Because so many trips are made by walking, the space in which people in low income households travel is more constricted than for others. About 60 percent of their trips are 3 miles or less, compared to 50 percent for other households. For low income single parent households, about 66 percent of trips are 3 miles or less (Figure 7).

If we compare a travel radius of 3 miles to a travel radius of 10 miles, the 10 mile radius covers 10 times more area. Within a 3 mile radius of one's home, one has 28 square miles which are accessible. With a 10 mile radius, this area expands to 300 square miles. Given the dispersion of jobs in our large metropolitan areas, the ability to travel beyond 3 miles from our homes is critical the accessibility of jobs. The ability to travel beyond 3 miles from our homes is also critical to our ability to access goods and services.

Table 9
Overall Travel
1995 NPTS

	TOTAL	LOW	OTHER	SINGLE-PARENT LOW INCOME
Avg hhld size	2.58	2.73	2.55	3.28
Annual Person Trips per Hhld	3,825	3,339	4,011	4,342
Avg Trips per Person	1,567	1,340	1,648	1,491
PMT per Hhld	33,280	22,572	36,330	24,543
PMT per Person	13,632	9,060	14,924	8,927
Vehicle Trips per Hhld	2,321	1,525	2,524	1,314
VMT per Hhld	20,895	11,594	23,437	9,203
POV Driver PMT per Person	8,558	4,654	9,627	3,160
POV Passenger PMT per Person	4,311	3,491	4,590	4,138
Public Tran PMT per Person	300	430	274	547
Walk PMT per Person	45	74	41	118
Other PMT per Person	276	280	282	445

Source: WRI_em6.sas FAX 10/20/97

Conclusions

The Nationwide Personal Transportation Survey (NPTS) can be used to understand the travel patterns of low income households, and other special groups, such as households without cars. Understanding how people in low income households travel today may assist us in the efforts of transitioning welfare recipients into the labor force. On a short term basis, the quickest way to improve people's accessibility to jobs may be to help them get a car. This could be through car ownership programs via employers, through non-profit groups, or through private/public joint ventures, perhaps involving car dealerships.

Having a car provides the range to travel longer distances and to get to a range of locations that may be inaccessible by bus. Many entry level jobs may require work in the evenings, and some jobs may be shift work. There is usually much less opportunity to use transit at these times, even if the jobs are located in traditional downtown areas.

The NPTS data show that, with a car, people with low incomes not only will drive themselves and their household members, but are also likely to assist friends and neighbors. Having a car provides greater flexibility not only in decisions on travel to work, but to other very important tasks such as child care, medical and dental visits, and household responsibilities such as grocery shopping.

While efforts to return jobs to the central city, to change land use patterns to have employment centers with densities and designs that support transit, bike and walk alternatives, should continue to be long term goals, these approaches may not solve the immediate problems of assisting people who now have a limited time for receiving welfare assistance.

Of course, those with low incomes are not all in the labor force. Many are retired and may have never learned to drive a car. Mobility for the elderly at all income levels is another topic that should be pursued with the 1995 NPTS. Further examination should isolate intervening variables such as the number of children in the household, number of people of working age, as factors that affect the travel of low income households.

Figure 1

Households without Vehicles

% of Households

1995 NPTS

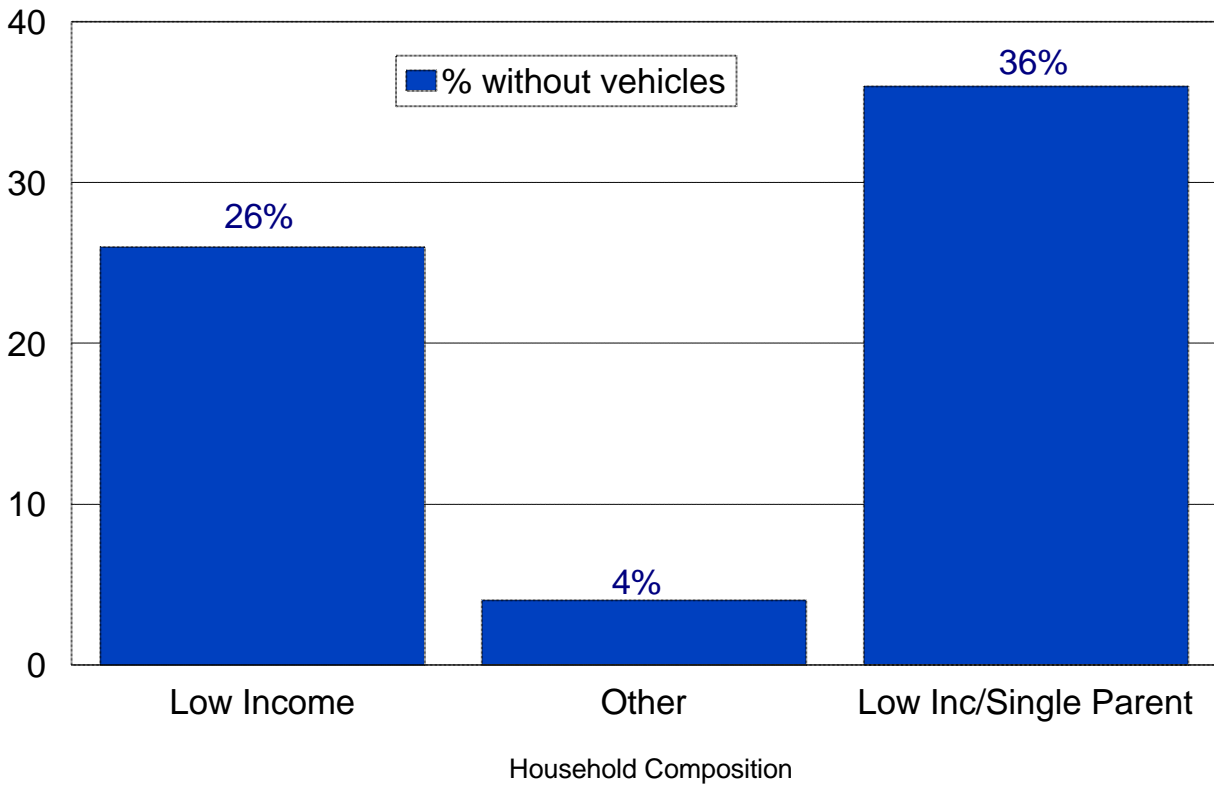


Figure 2

Earning a Living

Person Trips by Mode by Income

Percent

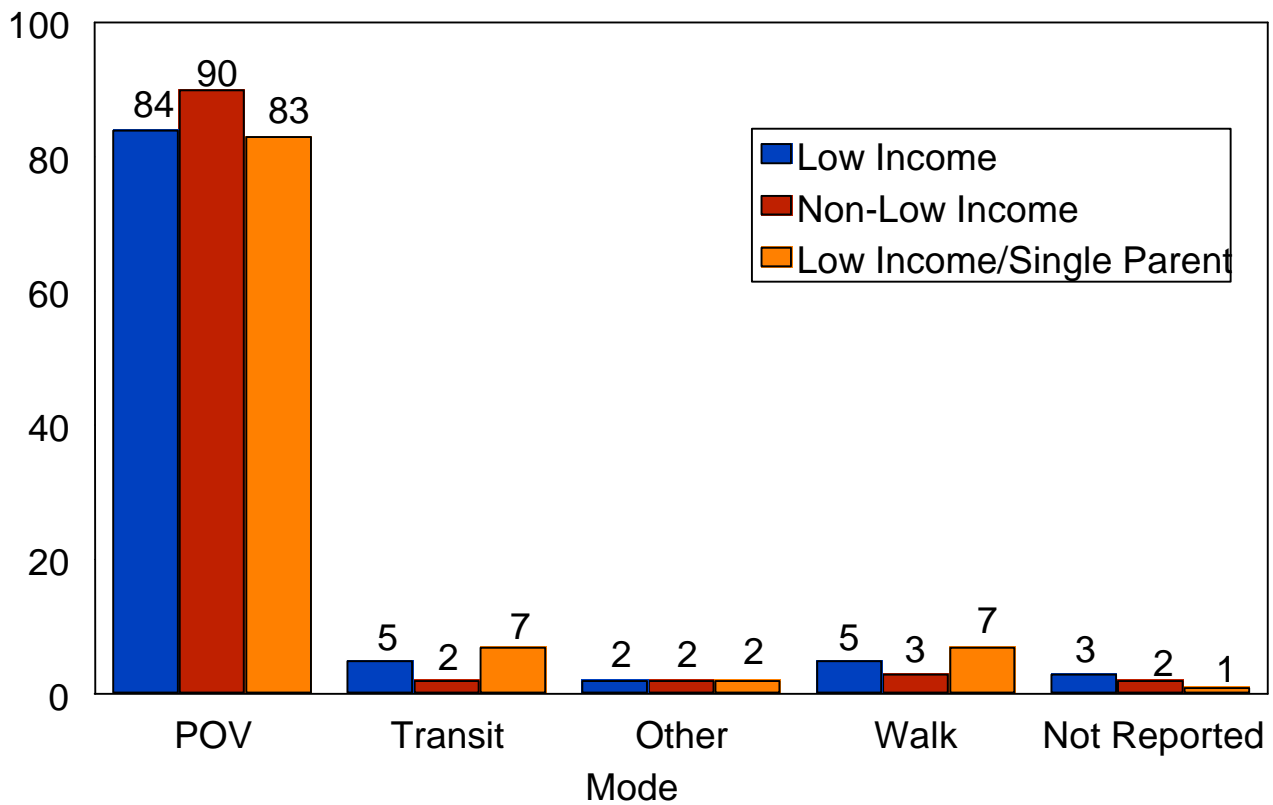
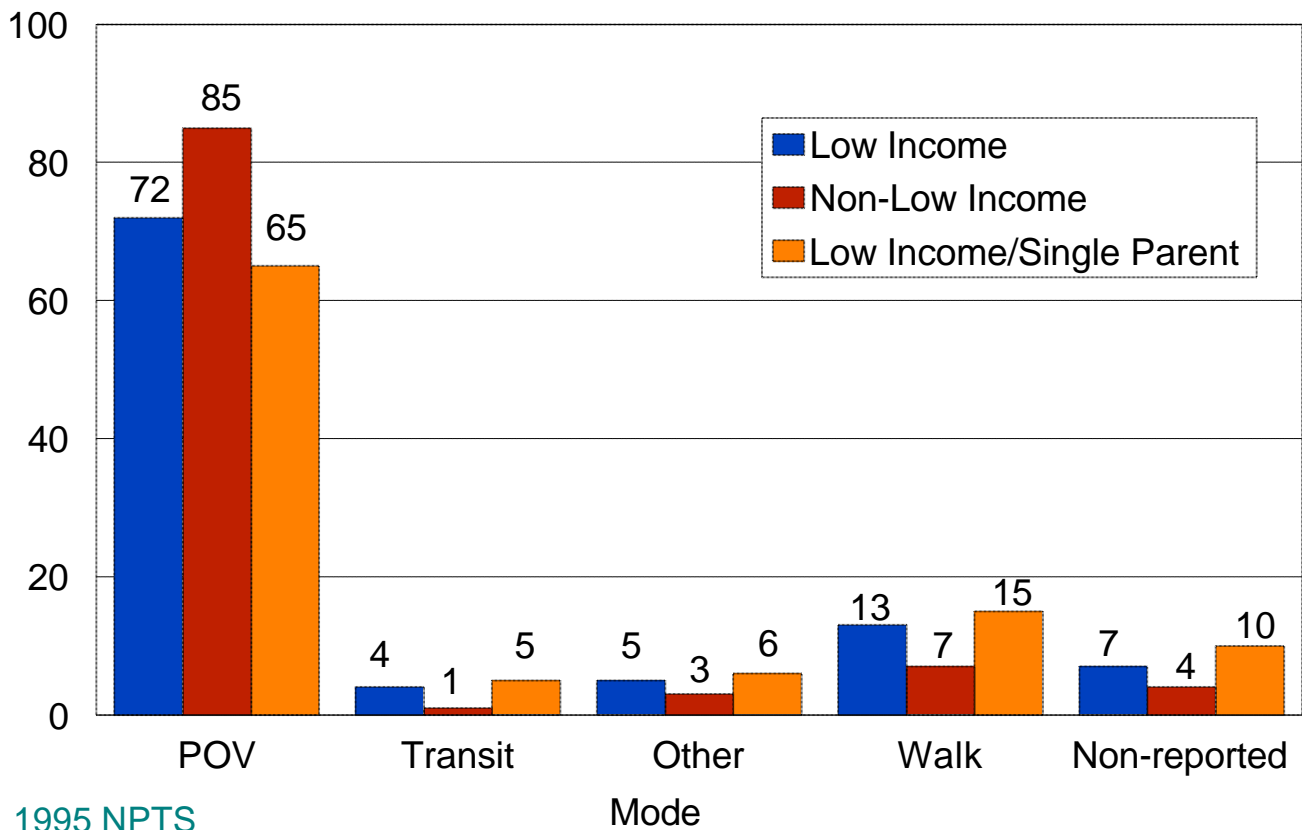


Figure 3

Social & Recreation Trips

Percent

Person Trips by Mode by Income

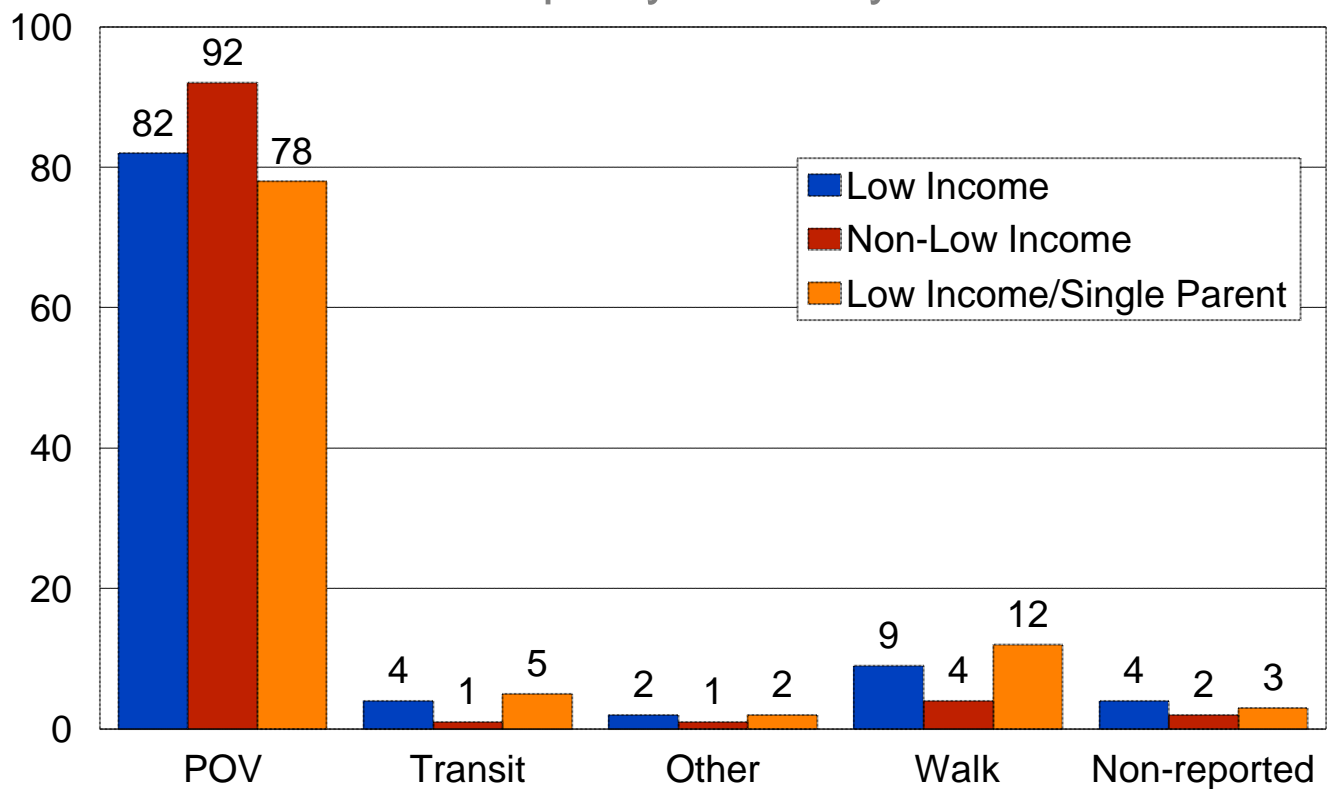


1995 NPTS

Figure 4

Family & Personal Business

Person Trips by Mode by Income



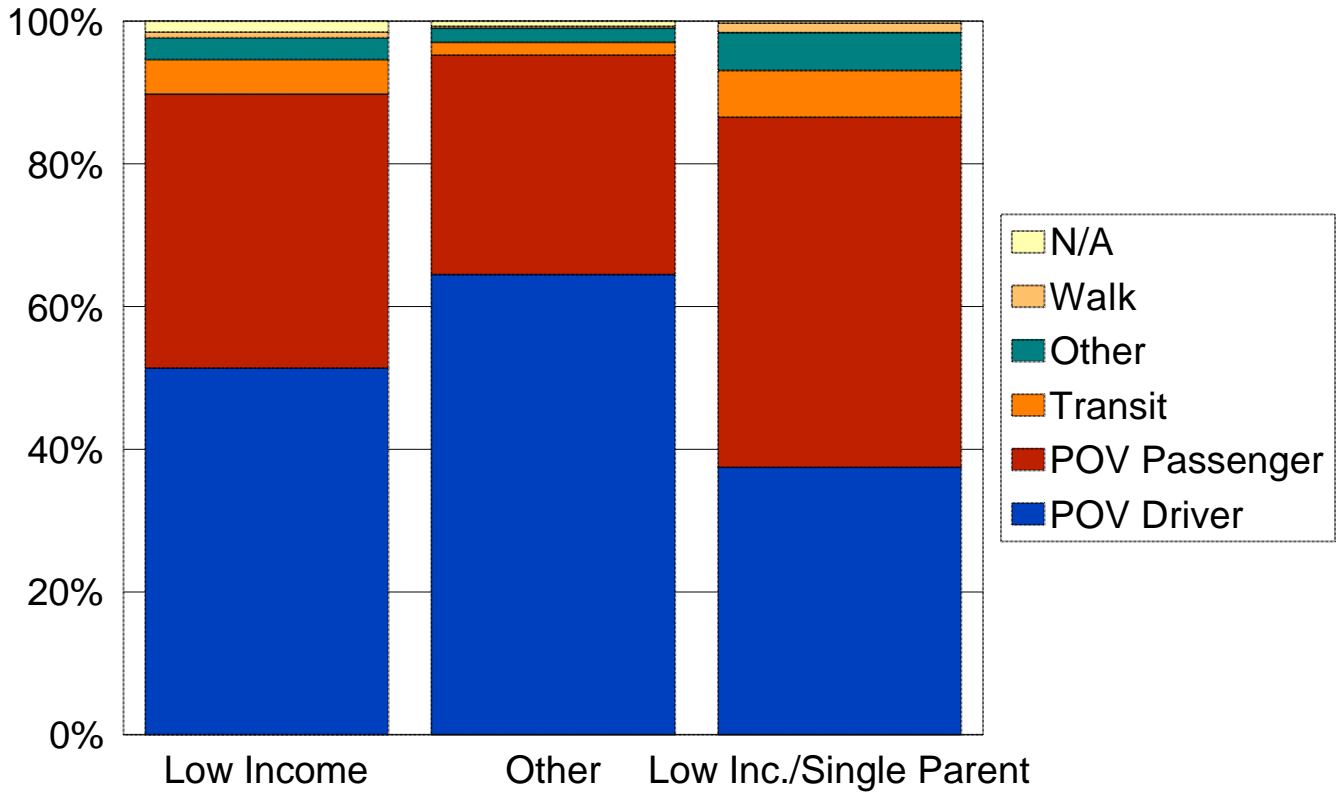
1995 NPTS

Figure 5

Person Miles of Travel by Mode

Percent

(excluding airplane)



1995 NPTS

Figure 6

Trip Length Distribution

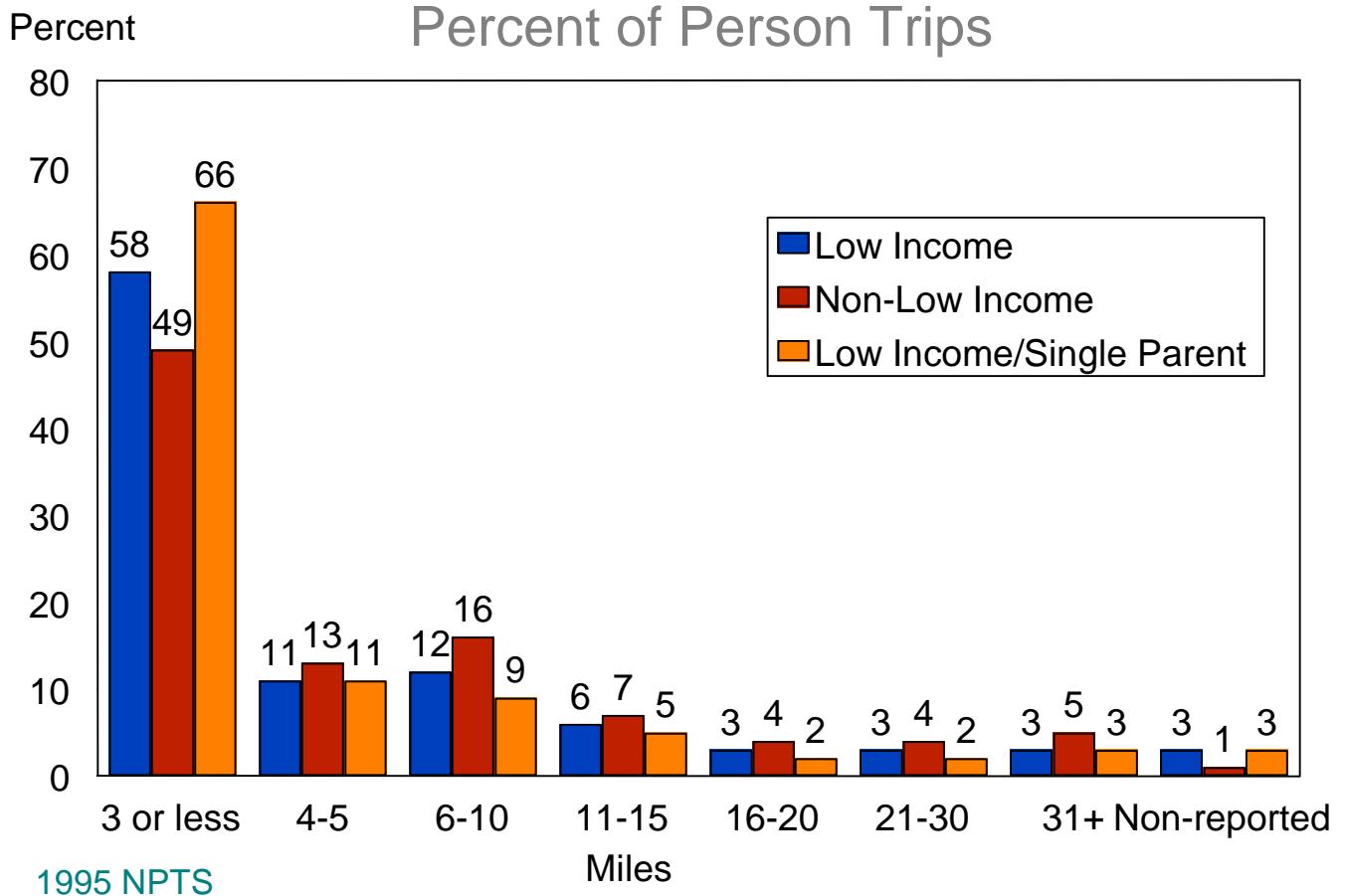
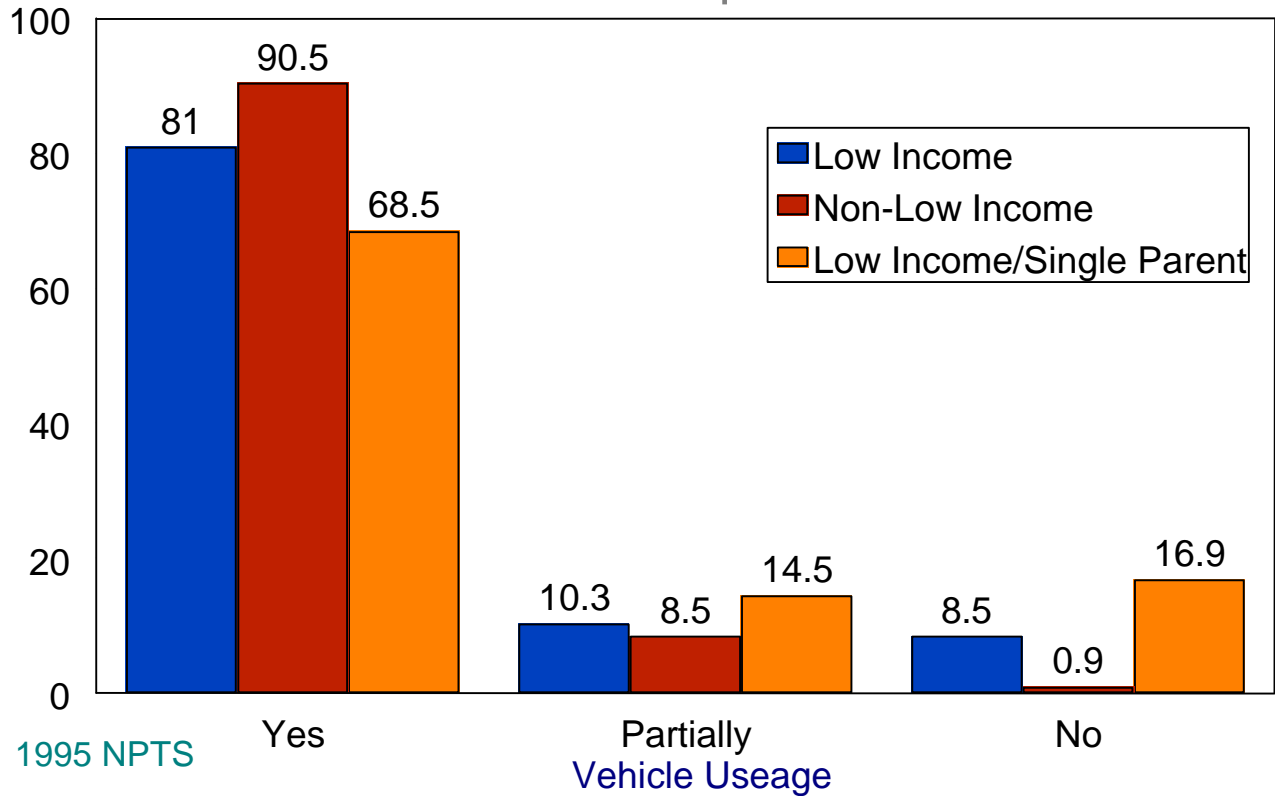


Figure 7

Was a Household Vehicle used on the Trip?

POV Trips

Percent



References

- (1) *Monthly Labor Review*, May 1996, p. 3
- (2) Note: The full 1995 NPTS includes adjustments that account for low income households that tend to go in-and-out of having telephone service.
- (3) *Family and Economics and Nutrition Review* 1997 Vol 10, No. 1, page 42, citing Passero, W.D., *Monthly Labor Review* 119 (4): 21-28.
- (4) *Monthly Labor Review*, May 1996, p. 8.
- (5) Leete, L. And Bania, N. *The Impact of Welfare Reform on Local Labor Markets*. Center for Urban Poverty and Social Change, Case Western Reserve Univeristy, Cleveland, Ohio. August 1995.
- (6) Lave, C. and Crepeau, R. "Travel by Households without Vehicles," in *1990 NPTS Travel Mode Special Reports*. FHWA (FHWA-PL-94-019), Washington, D.C. December 1994.