

CHAPTER FOUR: TRENDS IN VEHICLE ALTERNATIVES TO WORK

Key Findings

- Together, walking to work and working at home exceed transit use as a share of work trips. Like transit use, both have shown relative decline in share of total work travel.
- Walking to work has two main components: a central city and a rural component. Walkers are differentially poor, from lower quality housing.
- Working at home has a similar contrasting pair of components: rural workers and suburban homeowners.
- In metropolitan areas, walking to work and working at home seem to be complements, with walking a central city phenomenon and working at home more characteristic of suburban neighborhoods.



The dominant trend in modes of transportation used for trips to work has been the decline in share of all alternatives to the personally operated vehicle (POV). Figure 19 shows this across the board decline for the years 1985 to 1989. The changes in vehicle occupancy and the patterns in mass transit use are treated separately elsewhere. The remaining significant alternatives—walking and working at home—are discussed here.

Walking as a mode of travel to work has been in decline for a very long time as transit and the automobile have become more pervasive. Working at home has been affected more by the decline in farming than by competition from other modes of travel. Figures 20 and 21 show the walk share of the journey to work in recent years along with the share that work at home, stratified by the geographic area of the worker's residence. In 1985, about 7 percent of workers either walked to work or worked at home. This share declined to about 6 percent by 1989.

Together they exceeded mass transit in share of workers. In terms of miles of travel, they are far less significant. Preliminary data from the 1990 NPTS indicate that almost three-fourths of walk trips to work are less than one-half mile in length. Further review of the geographic detail in Figure 20 shows that the decline was relatively uniform across all residential areas including central cities, suburbs, and nonmetropolitan areas.

These two alternatives are attractive to planners because they employ no vehicles and consume few resources, making little or no infrastructure demands on the society. But to better understand why these options have declined requires a more careful examination of their characteristics.

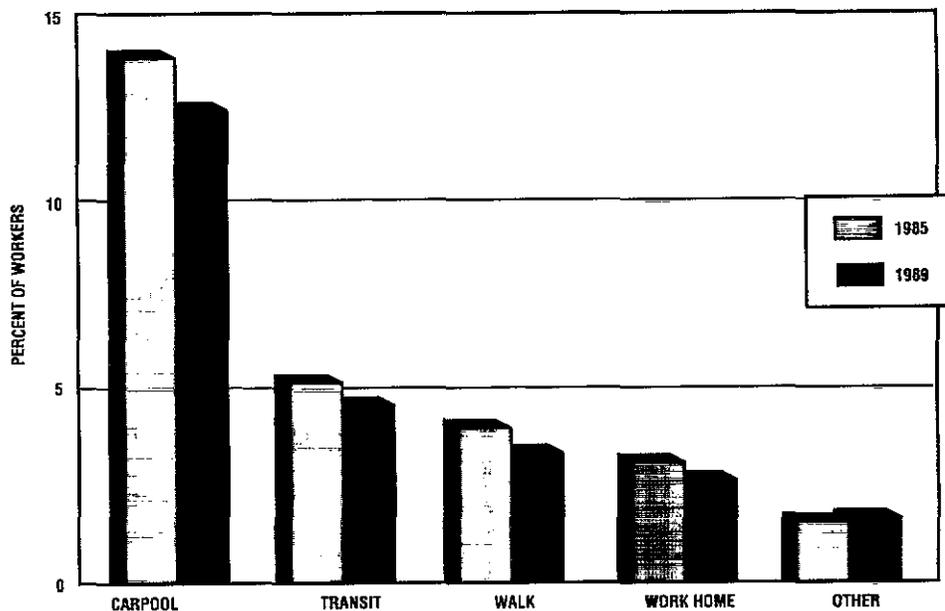
Walk to Work

The 1985 AHS identified roughly 4 million walkers out of the 100 million workers in the Nation. By 1989, walkers had declined to

*Together, walk to work and work at home
exceed mass transit in share of workers.*

FIGURE 19

**Trends in Alternatives to the Single Occupant Vehicle for Work Trips
1985 & 1989**



Source: AHS

3.6 million of the 106 million workers. These walkers can be separated into various groups according to the survey data. The first stratification is by place of residence. Figure 22 shows, among other things, how walk to work trips are distributed by place of residence categories, contrasted to the distribution of all work trips by the same categories. From this it seems that walking is a characteristic of small towns and large cities. Central cities, with 30 percent of the worker population, have 38 percent of the walkers, and nonmetropolitan areas with 20 percent of the workers have 28 percent of walkers. Within nonmetropolitan areas, small towns, with only

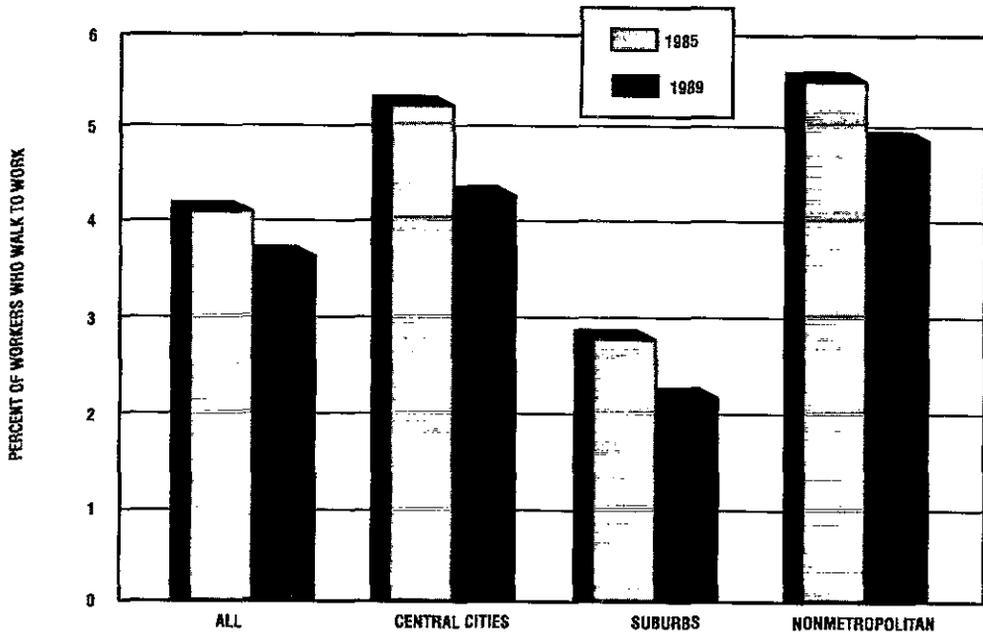
7 percent of the national population, have 11 percent of walkers.

Preliminary data from the 1990 NPTS indicate that, within metropolitan areas, walking to work increases with area size and with increased availability of transit. The NPTS also indicates that walkers tend to have work trips of less than half a mile.

Walkers are almost evenly divided between homeowners and renters, although renters represent only 32 percent of the population. Walkers are dramatically disproportionately poor, living in poor or bad quality housing, but not dramatically disproportionately African American or Hispanic.

FIGURE 20

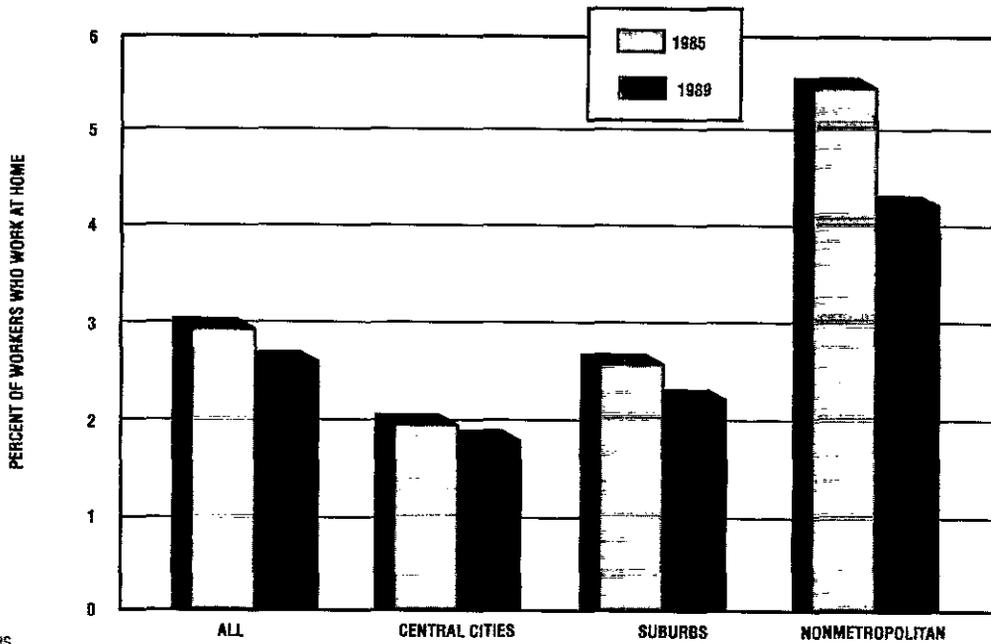
**Walk to Work Trends
1985 & 1989**



Source: AHS

FIGURE 21

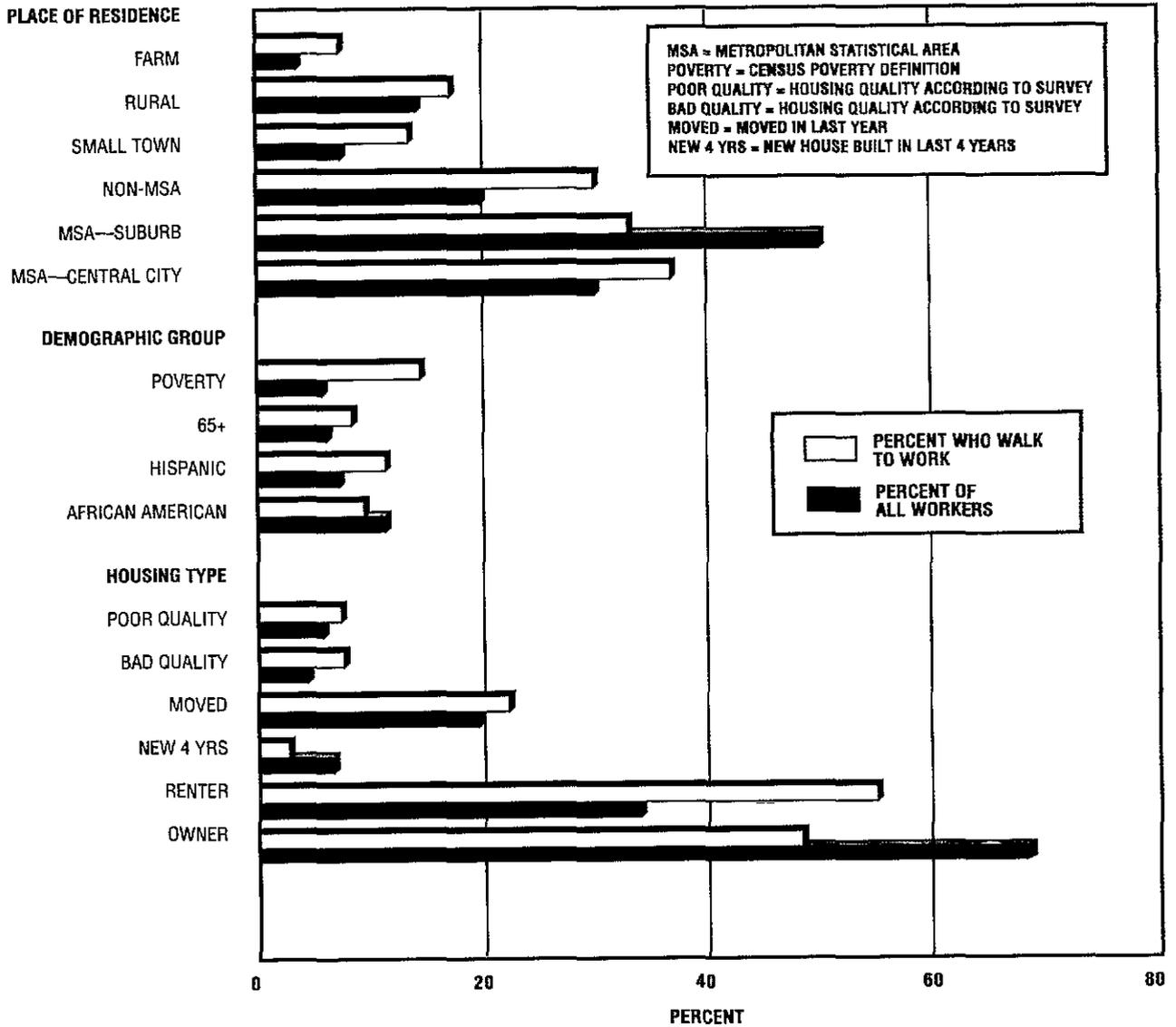
**Work at Home Trends
1985 & 1989**



Source: AHS

FIGURE 22

**Walk to Work Shares Compared to All Workers' Shares*
1989**



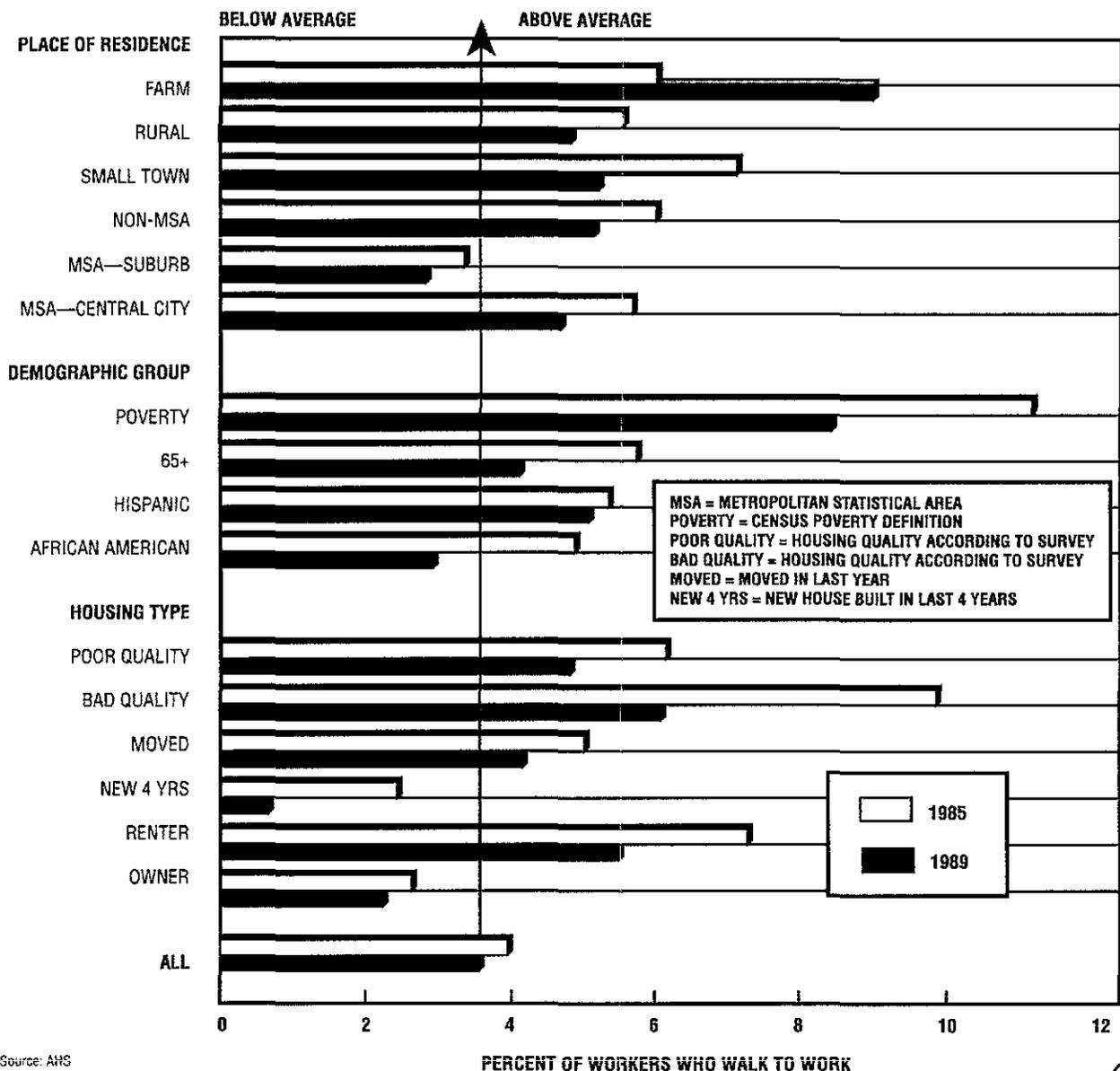
Source: AHS

*Using workers who live in suburbs as an example, this graph shows that 33% of workers who walk to work live in suburbs, yet 50% of all workers live in suburbs. Therefore, suburban workers are underrepresented in considering which groups tend to walk to work.

As the population becomes increasingly suburban and less poor, walking will decline. Interestingly, and perhaps unexpectedly, the aging of the population does not seem to have a negative effect on walking.

FIGURE 23

**Walk to Work Trends
Selected Housing Categories
1985 & 1989**



Source: AHS

The share of walking to all work travel is shown in Figure 23 for these and other groups. Among the clear conclusions to be drawn from these patterns is that, as the population becomes increasingly suburban and less poor, walking will decline. Interestingly, and perhaps unexpectedly, the aging of the population does not seem to have a negative effect on walking. As Figure 23 shows, those who are over 65 and work do walk to work in higher proportion than the national average.

While there is a tendency to see a decline in walking to work as a "negative," based on urban concerns for air quality, it is inappropriate to assume that this trend is a "problem to be solved." A large part of the shift away from walking is occurring in rural areas where people for the first time have the means to own a household vehicle and substitute its use for walking. As such, it can represent a real mobility increase, expanding access to jobs and other opportunities to the otherwise isolated rural population.

Work At Home

In some respects, the pattern among the 2.7 million people who work at home is the reverse of the walk to work pattern. Walking is underrepresented among homeowners, while working at home is heavily oriented to homeowners. Working at home is lower in central cities and higher in suburbs compared to walking. African Americans and Hispanics are notably underrepresented among those who work at home.

There are probably three main patterns that characterize working at home. One pattern involves a suburban professional who is technically oriented, representing the so-called, and long-awaited, technical revolution. The second pattern involves a metropolitan area resident who is working at a job that is home-based by definition, such as a family day care provider. The third pattern involves a rural person, probably poor and

engaged in agriculture. Those engaged in farming, with less than 2 percent of the population, constitute almost 17 percent of those who work at home. Nonmetropolitan areas account for almost a third of all those who work at home. Figure 24 provides a picture of shares of workers working at home vs. shares of all workers for significant demographic and housing variables drawn from the AHS.

Clearly, trends in working at home have been negatively affected by the decline in the farm population in this century. It is questionable whether the growth in the technical professional component of the economy will ever reach a scale where working at home increases as a share of commuting. However, the key point is that the share of national travel represented by working at home can decline, yet still make a significant contribution to commuting efficiency, as long as the metropolitan component of work at home continues to expand. Figure 25 supports the previous discussion showing that the rates of working at home are well above the national average for low income and rural populations.

Further Work

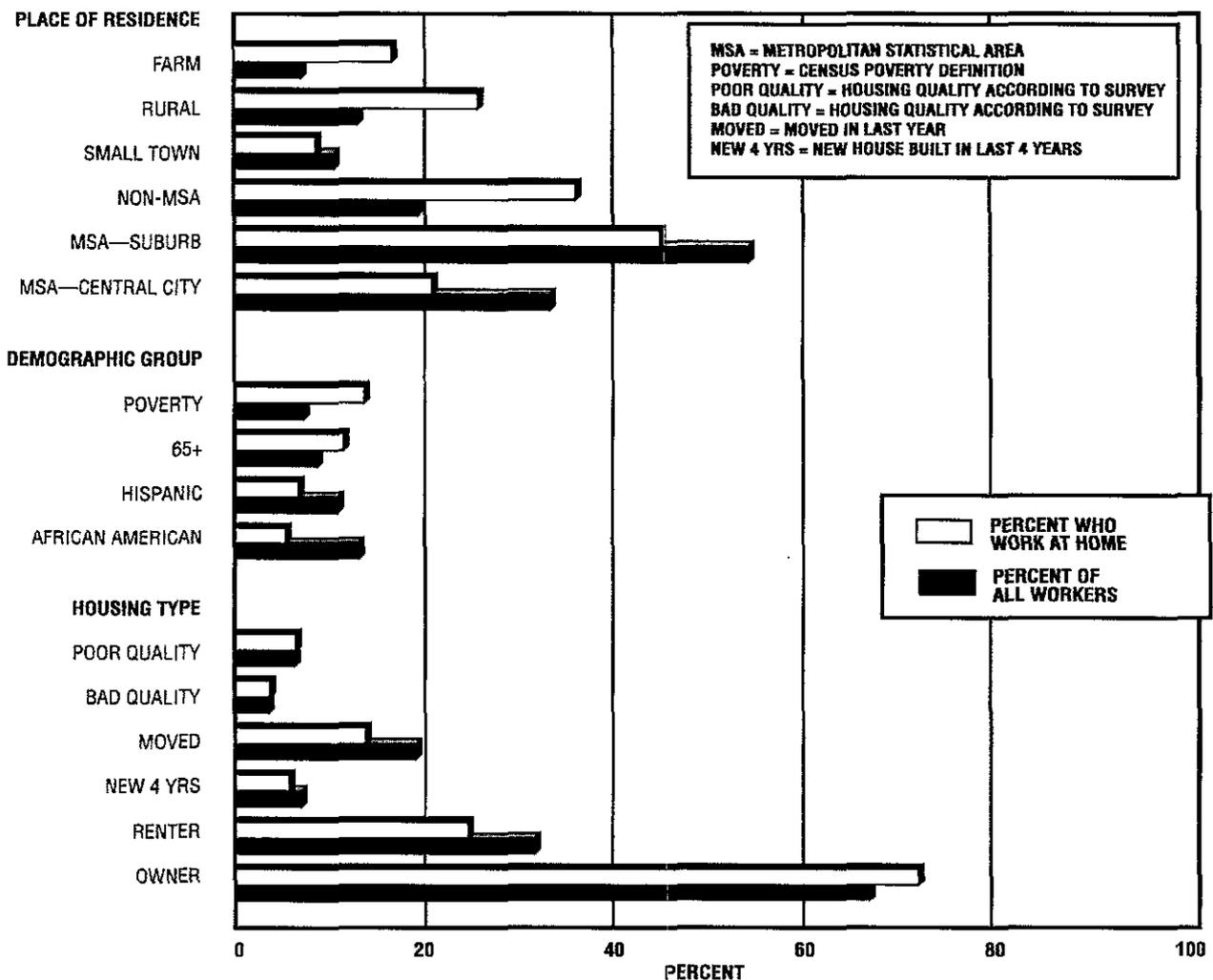
The walk to work mode needs to be looked at geographically and demographically. Of particular interest is the identification of cities with higher than typical walk to work shares. Density and area size are obvious factors. The correlation of walking with transit deserves further analysis. Indications that short trips shift from walk to personal vehicle rather than transit suggest that transit and walking are not substitutes because of long transit wait times.

The work at home phenomenon needs further research. The typical work-at-homer should be characterized demographically and geographically. Detailed data from the Decennial Census will provide very fertile ground for further research when the full journey to work statistics become available.

The share of national travel represented by working at home can decline, yet still make a significant contribution to commuting efficiency, as long as the metropolitan component of work at home continues to expand.

FIGURE 24

**Work at Home Shares Compared to All Workers' Shares*
1989**

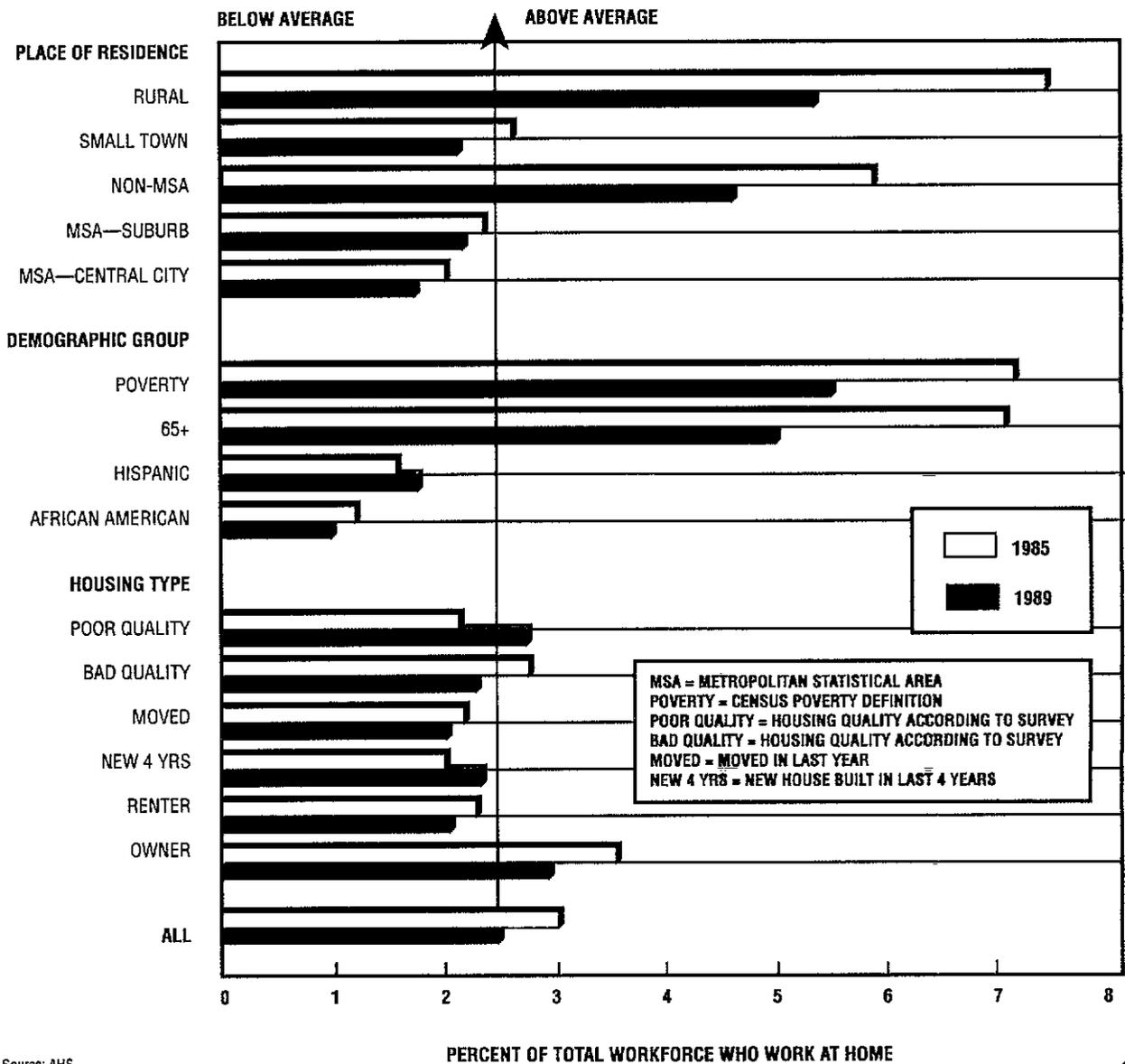


*Using workers who live in suburbs as an example, this graph shows that 47% of all workers who work at home live in suburbs, and 50% of all workers live in suburbs. Suburban workers are only very slightly underrepresented in looking at which groups work at home.

Source: AHS

FIGURE 25

**Work at Home Trends
Selected Housing Categories
1985 & 1989**



Source: AHS

FACTORS IN GROWTH OF PERSONAL TRAVEL

