Why Working Women Drive Alone: Implications for Travel Reduction Programs

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A study was funded by the U.S. Department of Labor to analyze the differential impact of mandatory trip reduction programs on employed men and women in different family situations. Travel demand management (TDM) programs can be expected to have a direct impact on working women with young children, who compose the largest component of the growth in the use of the car in the last two decades. The study found that in Phoenix and Tucson, Arizona, men and women had different travel patterns, even when controlling for marital status and the presence of children of various ages, as well as income and occupation. Having children had far more impact on working mothers than on comparable working fathers. Women with children were more likely to drive to work at all income levels than were comparable men or other women. The younger their children and the more children they had, the more likely women were to drive to work alone. Conversely, the more and the younger their children, the less likely working women were to use alternate modes. The findings indicate how dependent working mothers are on the car to balance their domestic and child care obligations and the need to identify the equity consequences of specific TDM requirements, to develop sets of TDM measures that respond to the time and cost constraints of working women, and to develop ways to offset the negative impacts on working mothers.

In the last two decades society has seen a significant increase in the role of the car coupled with the declining use of transit and carpooling. In response to growing concerns about the use of nonrenewable natural resources, air pollution, and traffic congestion, the Intermodal Surface Transportation Efficiency Act and the Clean Air Act Amendments of 1990 mandate both employers and governmental entities to reduce worker dependence on the car. Travel demand management (TDM) programs and their individual measures include increasing the cost of using or parking the car, implementing mandatory changes in work schedules, and making alternative modes more attractive.

This paper describes the final results of a U.S. Department of Labor study designed to critically analyze the impact of travel reduction measures. These findings show that TDM programs differentially affect salaried men and women and working women in different household situations. The study also evaluated whether and how the negative impacts of TDM policies could be ameliorated. A growing body of research shows that women more often depend on the car than do comparable men because their multiple obligations require them to combine work trips with shopping, chauffeuring children, and responding to home emergencies. This research base supports questioning the impact of TDM policies and measures that penalize women who drive to work alone.

The study used two very large data sets from Tucson and Phoenix, Arizona—both the sites of mandatory TDM programs since 1988. All employees at firms with more than 100 workers are surveyed annually about their travel patterns, travel changes, and attitudes toward alternative modes. The overall study relied on these regional surveys for 1990 and 1991 with data sets of over 50,000 employees in each region for each year. Full details of the study, the methodology, the comparative Phoenix-Tucson analyses, and detailed findings from surveys of two large employers are available in work by Rosenbloom and Burns (*1*).

This paper reports on the final part of the study, determining whether travel differences between the sexes were related to key household variables of marital status and the presence and age of children. These issues were evaluated among workers at the two major universities in Arizona: the University of Arizona in Tucson (with a 1991 data base of 5,014) and Arizona State University (ASU) in Tempe (considered Phoenix, with a 1991 data base of 2,519). In fact, the university findings show that working mothers are more dependent on driving alone than are comparable male parents measured in terms of marital status, presence of children, and age of children as well as income.

Clearly, TDM programs and similar measures have the ability to seriously disrupt the working and family lives of women. In the short run many women will not be able to give up the car and will face severe financial burdens as a result. In the long run many women will not be able to move their jobs closer to their homes (or vice versa) and may actually have to travel farther to find appropriate jobs while continuing to shoulder TDM costs.

WOMEN'S TRAVEL PATTERNS IN CONTEXT

Converging Societal Trends

Women account for roughly two-thirds of the new entrants into the labor force in the last 20 years, and their new trips to work account for a substantial portion of the growth in travel and automobile use. A significant part of the societal dependency on the car has been among women, generally the mothers of young children, who became new workers and new drivers in the last 15 years. One expert has calculated, "For every 1 percent shift from nondriver to driver in the female population, total travel jumps almost 10 billion miles per year" (*2*, p. 48).

Since 1969 the number of female drivers has increased 84 percent compared with a 99 percent increase in the number of women in the work force. (*3*, p. 6). The number of miles driven by males increased 46 percent between 1969 and 1990, but those driven by all women increased 76 percent and went up more than 200 percent among women between the ages of 16 and 34—that is, those entering the labor force (*3*, p. 36). In spite of a substantial income gap in the aggregate between male and female workers, in 1990 women

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were as likely to come to work in a car (driving alone or in a carpool) as men; 90.8 percent of all trips made to work by women were made in a car compared with 91.2 percent of the work trips of men.

The growth of women drivers, and women driving, is fueled by the extraordinary increase in the number of women workers with young children. The largest increase in labor force participation in the last decade has been among mothers with very young children. In 1990 almost half of all mothers of infants under 6 months were in the paid labor force—1 in 12 employed women had an infant (*4*). O'Connell (*5*) found that over 44 percent of all women return to work before their babies are 6 months of age—over two-thirds of those on a full-time basis. Women's child care obligations obviously reinforce their need to drive to work if at all possible.

Thus the nature of the conflict that this paper addresses becomes clear: on the one hand, policies attempting to reduce automobile use have a major impact on working mothers both because they are the most visible part of the growth in automobile travel and because they may be the most responsive to financial sanctions and incentives, given their lower average incomes.

On the other hand, working women may use the car to make up for the other deficiencies of society. The car allows women to deal with discrimination in the housing and labor markets, the inability of their children to travel alone safely, and the dispersion of goods and services in the suburban areas in which most Americans live. Moreover, the car, although not without security problems, addresses the far larger security concerns that most women have with alternative modes.

Recent Research and Overall Study Findings

Research over the last two decades shows that, in contrast to traditional thought, married mothers have travel patterns very different from those of roughly comparable men and that single working parents have travel patterns different from those of their married counterparts. Most of that research has concluded that working women, particularly those who are mothers, make transportation, job, and related decisions to successfully balance a number of employment, child care, and household responsibilities (*3,6–10*). These needs clearly constrain their travel options, work schedules, and even job choices (*11–13*).

Moreover, this body of work indicates that single mothers have travel patterns different from those of other women because they carry even a greater share of those domestic responsibilities lacking a resident partner (*14–17*). Finally, an emerging body of work suggests that men and women have different employment choices that play themselves out in very different spatial patterns—patterns that have profound implications for women's travel patterns (*18–25*).

The findings of the overall study strongly supported this body of international research. First, in both the Tucson and Phoenix metropolitan areas women were as likely as men or more likely than men to drive alone to work. Second, all but the poorest women were more likely to work substantially closer to home than comparable men, but to take relatively longer to do so. These findings reflect women's need to combine domestic and employment responsibilities with their trips to work, thus "artificially" lengthening the time needed to get to work. Third, men and women differed in their responses when questioned about the effectiveness of policies designed to increase the use of alternative modes—for example, free bus passes or covered carpool parking. In both regions, women were more responsive to strategies that addressed their domestic responsibilities—for example, dealing with their need to transport children or respond to family emergencies.

Fourth, the study concluded that most women would suffer seven major types of problems if they switched to alternative modes or mandated work schedules: (*a*) additional child or elder care expenses caused by time lost in traveling via alternative modes, (*b*) loss of the ability to conduct out-of-home domestic responsibilities (shopping, chauffeuring children) because of lack of time or flexibility, (*c*) loss of time to conduct in-home domestic responsibilities (preparing meals, spending time with children or aging parents), (*d*) inability to find appropriate child or elder care providers whose hours match new work schedules or longer commutes via alternative modes, (*e*) inability to respond to at-home emergencies or disruptions (a child becomes ill at school), (*f*) exposure to additional (perceived or real) danger walking to and from stops or riding transit, and (*g*) inability to find or use alternatives matched to work schedules or home location (buses that run infrequently or require several transfers or a long walk from employment site to stop).

Fifth, the study found that few of the strategies that are designed to overcome objections to the use of alternative modes or work schedules actually address these major problems. Giving transit passes, for example, does not compensate for the time lost to this slower mode, does not address women's security concerns, and does not create transit where none exists.

Study Data Sets: University TDM Programs

In 1990 Arizona was 1 of 11 states with legislatively mandated TDM programs; the state had the largest number of employees in the country, after California, covered by mandatory programs. Arizona enacted these programs in 1988 because the two largest metropolitan areas, Tucson and Phoenix (with over 70 percent of the state's population), were not in compliance with federal clean air standards. The annual surveys that each region must administer to large employers constitute the data sets for the overall study. The overall study used the regional data sets for 1990 and 1991 to study general patterns and trends.

The data for this paper are the 1990 and 1991 surveys from the second- and fourth-largest public employers in Arizona: ASU and the University of Arizona. In 1991 both universities added questions about employee marital status and the presence and age of children to support this research.

The university data bases constitute 100 percent of all usable survey responses and represent over 60 percent of their respective work forces. The University of Arizona data bases include 5,014 and 4,693 respondents from 1990 and 1991, respectively; ASU data bases include 3,597 and 2,519 respondents from 1990 and 1991, respectively.

The data have limits. The University of Arizona survey information has only household income data, whereas the ASU survey contains no income information at all. Occupational data are provided in aggregate categories, and both income and age data are available only in group form (25 to 34 years old).

Compared with regional profiles, manufacturing/production and sales/service jobs are underrepresented at the two universities, whereas professional/managerial jobs are significantly overrepresented. Even these large data bases have sample size problems when they are disaggregated for analysis, for example, by sex and marital status and number and age of children. Moreover, men and women in the same household cannot be compared; only men and women within the same kind of household can be compared.

In addition, sociodemographic differences exist between men and women at the two universities, and between all university workers and their comparable regional work forces. Women workers were slightly younger than male workers, but all university workers were older on average than regional workers. Women were substantially more likely to be employed in clerical/secretarial jobs and substantially less likely to be employed in professional/managerial and technical/research jobs than men, but all university workers were underrepresented in production and sales jobs. Both university and regional women were slightly more likely than men to work fewer than 4 days/week, but over 80 percent worked 5 or more days in 1991. Both university and regional women were slightly more likely to work part time than men, but over 84 percent worked full time. Although women were much more likely to come from households making under $20,000 and substantially less likely to be in households making over $40,000 than men, all university workers averaged higher incomes than regional workers.

UNIVERSITY ANALYSES

Aggregate Travel Patterns

Workers at both universities were highly dependent on the private automobile for commuting, although less so than regional workers. In both 1990 and 1991 over 60 percent of all workers drove alone to work compared with over 78 percent in the Phoenix region and 71 percent in the Tucson region. Although driving alone dropped in both regions between 1990 and 1991, driving alone increased at both universities. Over 65 percent of University of Arizona workers and over 75 percent of ASU workers drove alone to work in 1991 compared with 60 and 74 percent, respectively, in 1990.

Conversely, the use of most alternative modes went down at both universities while increasing regionally. Carpool use dropped from 11.5 to 8.5 percent at ASU; bus use dropped from 12.5 to 10.4 percent at the University of Arizona. In contrast, walking as a commute mode went up slightly at ASU from 3.3 to 3.5 percent.

Employees at both campuses had substantially shorter commutes than aggregate regional commutes. Well over three-fourths of University workers lived within 10 mi of their homes. Over 65 percent of both sets of workers traveled less than 20 min to work.

Disaggregating travel patterns shows marked differences by sex. At both universities women were much more likely to drive alone to work than men. This gap intensified between 1990 and 1991 because fewer women switched to alternative modes and more women switched away from alternative modes. Thus women were more likely to depend on the car even though they were more concentrated in lower-paying jobs and in households with lower incomes.

Women at both universities worked further from home than men—in marked contrast to regional findings—and work trip distances went up from 1990 to 1991. In 1991 the mean travel distance for University of Arizona women workers was 8.3 mi compared with 7.5 mi for men and 8.7 mi compared with 7.8 mi at ASU. These findings are not what would be expected by traditional theories of travel behavior, since the women involved are, on average, earning less than the men. Women at both universities also spent more time in commuting—not surprising given the fact that their trip lengths were greater. When travel times are compared with travel distances, however, women take longer than men to cover comparable distances.

In summary, the aggregate university data show that, in spite of being concentrated in lower-paying occupations and having lower household incomes at the University of Arizona, women workers at the two universities are (*a*) more dependent on the private car than are men, (*b*) more likely to choose different modes when they switch to alternative modes, and (*c*) likely to take longer to cover a comparable distance to work regardless of the mode used.

Impact of Socioeconomic Variables

The aggregate figures presented may be hiding differences in income or occupation that have more impact on travel behavior. However, the overall study did not find that either variable contributed much to the understanding of differences in the travel patterns of men and women at the two universities.

Figure 1 shows mode choice to work in 1991 at the University of Arizona by sex and income. Women were far more likely to drive to work at all but the highest income levels—over $80,000. The gap between men and women was often large. For example, at household incomes between $20,000 and $30,000 over 68 percent of women but only 56 percent of men drove alone to work. It is improbable that women make more than men in every household at the university and therefore unlikely that personal income explains travel choices. It is more likely that women in these households, on average, make significantly less than comparable men but must drive anyway.

Men were far less likely to carpool in 1991 than comparable women in all but one income category. For example, at household incomes between $30,000 and $40,000, women were twice as likely to carpool as comparable men: 7.2 percent compared with 14.7 percent. Overall, women's use of carpooling went up as income went up with the exception of the lowest income categories, but the pattern was less clear among comparable men.

Although bus usage in 1991 tended to be highest for women with incomes below $20,000, at incomes above $20,000 men were far more likely than women to take the bus. In other words, in house-

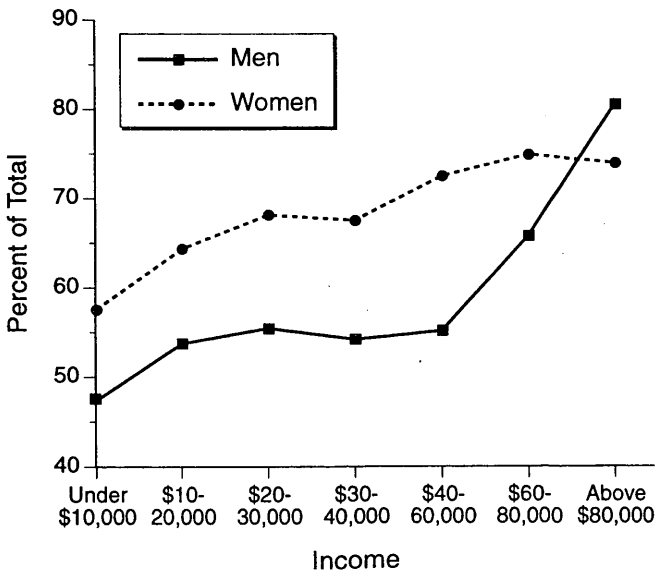

FIGURE 1 Percent driving alone by income and sex: University of Arizona, 1991.

holds in which higher incomes made it possibly easier for both sexes to give up the bus, women were more likely to do so. In fact, between 1990 and 1991 women were much more likely to give up coming to work by bus than comparable men—although bus use dropped for both sexes.

For ASU, travel differences between the sexes were compared using aggregate occupational categories that approximated personal income. Four categories with enough respondents were ranked in order of declining wages: professional/managerial, technical/research, crafts/trades, and clerical/secretarial. In each category, women were substantially more likely than comparable men to drive alone to work. This gap widened as the wage level of the occupational category decreased, confirming that women's personal income levels do not explain travel choices. For professional/managerial employees, 83.1 percent of all women and 76.5 percent of all men drove alone to work. For clerical/secretarial employment, however, 74.9 percent of all women and 51.9 percent of all men drove alone.

Other travel differences between the sexes were not explained by income or occupation; women generally lived closer to work than comparable men but took relatively longer to get there. As in the regional analyses, women's work trips appeared to be combined with other domestic or child care responsibilities, which lengthened the time required to get to work. Clearly, controlling for either household income or occupation does not provide much explanation of the differences between men's and women's travel patterns in terms of mode chosen, distance traveled, or time spent in commuting.

Impact of Family Structure and Children

Even if traditional economic variables of income and occupation have limited explanatory power, these aggregate analyses by sex may obscure the impact of individual household variables on women's and men's travel. So far, the analyses may be recording differences between those who are or are not married or those who are or are not a parent, rather than differences between men and women. This section examines these differences.

Marital Status and Number and Age of Children

Table 1 indicates the impact of marital status on travel choices for ASU and for the University of Arizona. Although unmarried people generally are more likely to drive alone than those who are married, women are always more likely to drive alone to work, regardless of marital status. Over 82 percent of unmarried women at ASU drove to work alone compared with 67 percent of unmarried male workers; over 66 percent of married women workers but only 60 percent of married male workers drove alone at the University of Arizona.

Conversely, married people of both sexes are substantially more likely to carpool than unmarried people; almost 19 percent of married women but only 6 percent of unmarried women workers carpooled at the University of Arizona, whereas over 8 percent of married men but only 3 percent of unmarried men at ASU carpooled. It is likely that married people are carpooling with one another.

Tables 2 and 3 indicate the joint impact of marital status and the presence of children on travel choices; the differences between the sexes hold even when being a parent is added. Whether or not they have children, married and unmarried women are more likely to

TABLE 1 Most Frequent Mode to Work by Marital Status and Sex, 1991

Mode	University of Arizona				Arizona State University			
	Married		Not Married		Married		Not Married	
	M	F	M	F	M	F	M	F
Drive Alone	60.2%	66.2%	61.4%	71.2%	71.3%	76.2%	66.9%	82.1%
Carpool	12.5	18.5	3.5	6.1	8.1	13.5	3.3	4.6
Bus	10.4	10.1	9.1	11.5	2.3	2.1	1.1	2.0
Walk	2.2	1.6	7.8	4.5	1.8	1.8	5.1	4.4
Bike	13.2	3.4	16.1	6.3	14.9	3.7	19.9	6.4
Other	1.5	.2	2.1	.4	1.5	2.7	3.7	.4
Total Responses	1,267	1,222	515	999	652	709	272	497

Note: Most Frequent Mode equals 4 or more days per week.

TABLE 2 Most Frequent Mode to Work by Presence of Children, Marital Status, and Sex, ASU, 1991

Mode	No Children Under 18				Children Under 18			
	Married		Not Married		Married		Not Married	
	M	F	M	F	M	F	M	F
Drive Alone	70.6%	72.1%	65.9%	84.1%	72.4%	82.5%	82.4%	75.8%
Carpool	9.3	16.6	3.1	.5	6.5	8.7	5.9	17.5
Bus	2.1	2.1	1.2	2.4	2.5	2.2	0.0	.8
Walk	2.4	2.3	5.5	4.5	1.1	1.1	0.0	4.2
Bike	14.1	4.6	20.8	8.0	16.0	2.2	5.9	1.7
Other	1.6	2.3	3.5	.5	1.5	3.3	5.9	0.0
Total Responses	377	434	255	377	275	275	17	120

Note: Most Frequent Mode equals 4 or more days per week and Presence of Children means children living in respondent's household.

TABLE 3 Most Frequent Mode to Work by Presence of Children, Marital Status, and Sex, University of Arizona, 1991

Mode	No Children Under 18				Children Under 18			
	Married		Not Married		Married		Not Married	
	M	F	M	F	M	F	M	F
Drive Alone	59.4%	63.7%	60.2%	69.9%	61.2%	69.7%	72.0%	76.3%
Carpool	14.3	19.8	3.2	5.7	10.3	16.7	6.0	7.7
Bus	9.6	11.1	9.2	11.7	11.4	8.8	8.0	10.8
Walk	1.9	1.7	8.2	5.2	2.6	1.6	4.0	1.5
Bike	13.1	3.5	17.2	7.1	13.3	3.1	6.0	3.1
Other	1.7	.3	1.9	.4	1.2	0.0	4.0	.5
Total Responses	687	713	465	805	580	509	50	194

Note: Most Frequent Mode equals 4 or more days per week and Presence of Children means children living in respondent's household.

drive alone to work than comparable men; the only exception is among the small number (17) of unmarried ASU fathers. For example, over 82 percent of married women with children but only 72 percent of married men with children drove alone to work at ASU. Over 76 percent of unmarried women with children drove alone to work at the University of Arizona, compared with 72 percent of comparable men.

Although the impact is more pronounced for women, having children tends to increase the likelihood that both men and women will drive alone. For example, over 72 percent of married male ASU workers with children drove alone to work compared with just under 71 percent of married men without children. But over 82 percent of married women with children drove to work at ASU compared with 72 percent of married women without children.

Conversely, married workers—who were more likely to carpool than single people—were much less likely to do so when they had children. Almost 17 percent of childless married men, but only 8.7 percent of comparable men with children, carpooled to work at ASU, whereas roughly 20 percent of childless married men but only 17 percent of married men with children carpooled at the University of Arizona. In general, women with children are less likely to use the bus than comparable women who have no children.

Table 4 indicates the impact of the age of the children on men's and women's travel choices and clarifies the importance of young children to women's travel patterns. First, all women with children are more likely than comparable men to drive to work alone. Among mothers, those who have children aged 0 to 12 are the most likely to drive alone; the highest percentage is for mothers of children between 6 and 12. Over 84 percent of women with very young children (compared with 71 percent of comparable men) and over 92 percent of women with children 6 to 12 (compared with 77 percent of comparable men) drove alone to work in 1991 at ASU. Over 75 percent of comparable women in both groups did so at the University of Arizona compared with under 65 percent of most comparable men.

Second, both men and women are affected by the presence of children (women much more so than men). Table 2 indicated, for example, that slightly over 72 percent of all married men with children at ASU drove alone. However, over 75 percent of ASU male workers (not controlling for marital status) drove to work when they had children 6 years old or older. The same patterns are seen among women, although the differences are more striking; almost 70 percent of all married women with children drove alone to work, whereas 76 percent of mothers of children 6 to 12 did (not controlling for marital status) at the University of Arizona.

Third, women seem more affected than comparable men by the presence of very young children (under 6 years of age). Although both men and women are the most likely to drive alone when they have one or more children aged 6 to 12, a higher percentage of women drive in each category. Moreover, almost 85 percent of the mothers of very young children drive alone at ASU compared with just under 71 percent of comparable men; the gap is almost as large at the University of Arizona, where over 75 percent of the mothers of very young children drive alone compared with almost 63 percent of comparable men.

Related study data indicate that having more than one child under 6 years old increases even more the likelihood that women will drive alone; 74.3 percent of women with one very young child but 79.3 percent of women with two or more very young children drove alone to work at the University of Arizona; the comparable ASU figures were 84.5 and 85.7 percent. In fact, at the University of Arizona the highest car use is among women with more than one very young child; at Arizona State University the highest drive-alone rate is among women having more than one child aged 6 to 12.

Related study data also show that having young children affects the use of alternative modes—the complement of the data just presented; the use of alternative modes tends to increase among women with older children. Married women with young children are less likely to carpool and use the bus than are comparable women with older children; at ASU 6.5 percent of women with young children but 19.8 percent of women with children over 17 (living at home) carpooled to work. However, carpool use tended to drop steadily among married men as the age of their children increased; somewhat similar patterns were seen for men's bus usage. Indeed, the only child age category in which more men drive alone than comparable women is for employees with children over 17 who live at home. In conclusion, women have more choice in their travel patterns once their children reach driving age and no longer require chauffeuring.

TABLE 4 Percentage of People Driving Alone by Age of Children, 1991

	University of Arizona		Arizona State University	
Employees With	*Male*	*Female*	*Male*	*Female*
Children **0-5**	62.8%	75.3%	70.6%	84.6%
Children **6-12**	67.7	75.9	77.7	91.1
Children **13-17**	62.7	67.2	73.6	79.9
Children **Over 17**	66.7	63.9	76.9	71.9
No Children	59.2	67.8	67.9	77.5
Total Responses	2,036	2,514	1,053	1,505

Joint Impact of Household Responsibilities and Income

Figures 2 and 3 show the joint impact of children and family income on women's and men's travel choices at the University of Arizona, the only data set with income information. The patterns seen in these figures replicate all of the patterns seen earlier in simpler cross-tabulations—that is, household income differences do not explain the differences seen in men's and women's travel patterns.

Figure 2 shows the impact of household income combined with being married but having no children, a complement to Table 3. As expected, there are differences between married workers with no children. At all but one household income level ($40,000 to $60,000), women are significantly more likely to drive alone to work; the difference is the greatest at the lowest income levels, where 76 percent of married women but only 50 percent of comparable men drive.

The impact of household income combined with being married and having one young child replicates earlier patterns seen in more aggregated cross-tabulations. Women with children are generally more likely to drive alone than women with comparable incomes but without children. For example, 75 percent of women with one

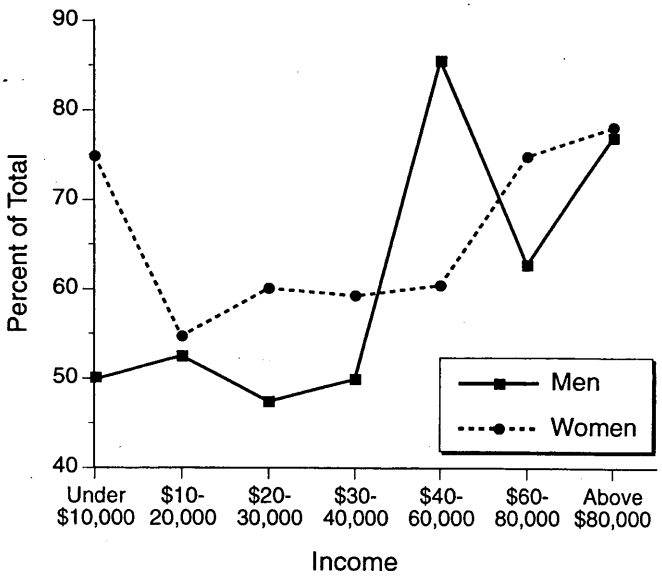

FIGURE 2 Percent driving alone by income, sex, and marital status: University of Arizona, 1991, married with no children.

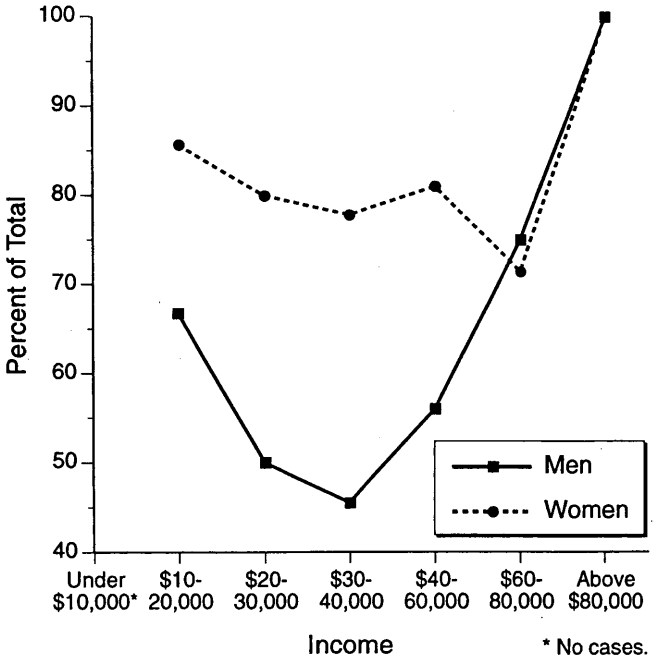

FIGURE 3 Percent driving alone by income, sex, and marital status: University of Arizona, 1991, married with two or more children ages 0 to 5.

child and an income between $30,000 and $40,000 drove alone to work, compared with 60 percent of comparable women without children. Moreover, women are more likely to drive alone than comparable men with young children. In fact, the women with the lowest household income are the most likely to drive alone to work when they have very young children: 100 percent of women but only 68 percent of men with incomes under $10,000 drove to work if they had one young child.

Figure 3 shows the joint impact of household income, marital status, and having more than one young child. This figure shows the same patterns seen in earlier data not controlled for income. At most income levels married women with more than one young child are more likely to drive alone to work than are women without children or with only one child, and substantially more likely than any men. For example, over 80 percent of women with two or more young children with incomes between $30,000 and $40,000 drove to work, compared with 46 percent of comparable men and 74 percent of women with only one young child.

In short, the more children she has, and the younger these children are, the more likely a mother is to drive to work, regardless of her household income. Clearly, mothers are disproportionately driving alone to work—and disproportionately shunning alternative modes—because of the domestic and child care duties they retain when they enter or remain in the paid labor force. Moreover, the very strong dependence on the car even among women who are not married or have no children suggests that women still have more domestic duties and perhaps a greater concern with personal security and convenience than comparable men.

CONCLUSIONS AND IMPLICATIONS

Every analysis in this study shows that the car is a necessity and not a luxury for most working women and their families, given current land use, housing, employment, and service patterns. This study validates a growing body of international travel behavior research that indicates that working women, particularly those who are parents, drive alone to accommodate their daily household and child care responsibilities.

Travel reduction programs and similar measures have the ability to disrupt the working and family lives of women. Many women workers will continue to drive, accepting the new expenses and constraints imposed by travel reduction programs, because driving still meets their overall responsibilities better than any alternatives. It is clear that almost no single employer-sponsored incentive would have any meaningful impact on working women's time and money costs associated with switching to alternative modes. For example, transit passes do not compensate for time lost to travel on longer commutes, added hours of child care or elder care expenses, the lack of current transit service, and associated security issues.

Moreover, working women will have added time and monetary commute costs without offsetting advantages if employers enact sanctions—removing parking, raising parking prices, and mandating work schedule changes. Proposed market-based strategies for travel reduction—increased gas taxes, parking prices, road tolls, and restrictive parking policies—would have similar negative impacts on working women.

This study concludes that working women, particularly those with young children, require a package of incentives and services to be able to switch modes or work hours. Multiple employer-sponsored measures have potential for offsetting alternate mode disadvantages through vanpools, group bus service, and shared-ride taxis, flextime set by the employee, guaranteed ride home, and working at home. Equitable and efficient travel reduction programs can make participation by working women possible by maximizing employee choices, reducing the constraints under which working women operate, providing low-cost transportation alternatives, and compensating workers for alternate mode time and monetary costs.

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