

# How People Perceive the Cost of the Journey to Work

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Two national sample surveys of people in metropolitan areas were conducted in 1963 and 1965 in which questions were asked about the cost of the journey to work. The questions concerned the cost both of methods actually used and methods available to people but not used. The results show that people are well aware of costs, which are directly associated with the journey to work, such as parking fees and fares paid to transit companies. To estimate the cost of the journey to work by auto, however, requires an allocation of costs to the purpose. Most people have not made an estimate of the cost. Their off-hand estimates of the cost for fuel are unreasonably high. Most people who have estimated costs of transportation by auto do not include depreciation. In this respect people seem to be good economists since cars which are used for the journey to work usually would be kept even if not used for getting to work.

•COSTS as people perceive them are directly relevant to their behavior. In simple cases it is sometimes possible to assume that people know the precise relative cost of the alternatives open to them. However, the question of what is the cost of the journey to work, especially by automobile, is not easy to answer. It may be useful, therefore, to examine the question of how people themselves think about the subject.

Several basic questions arise in considering people's perceptions of the cost of the journey to work. The first question concerns opinions of the subject. How well developed in people's minds are estimates of the cost? Second, are the estimates which people do make reasonably accurate or do they seem distorted? A third question is of a different order: what items should be considered by an analyst in estimating the cost to people of the journey to work by automobile? In particular, should the cost of a trip by automobile be estimated on the basis of full average cost per mile or marginal cost per mile?

The data presented here are based on personal interviews with two cross sections of the population from metropolitan areas in the United States, excluding the New York area. A total of 824 interviews was taken in September and October 1963, and 748 interviews were taken in September and October 1965 (1). The approach to the cost of the journey to work differed in the two surveys. In the first, questions were designed to elicit information about people's own views of costs. In the second, a more structured approach was taken and people were asked for specific information believed relevant by the investigators.

## THE COST OF AUTOMOBILE TRANSPORTATION

This section will seek to answer four questions. Have people estimated the cost of operating the vehicle? If so, how reasonable are their estimates? Which is the relevant

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TABLE 1  
PERCENT OF WORKERS WHO ALWAYS  
DRIVE THAT HAVE ESTIMATED HOW  
MUCH IT COSTS PER DAY

Category	Percent
Have estimated	28
Have never estimated	72
Total	100
Number of journeys to work	277

The question was: Have you people ever estimated how much it costs per day for (worker) to drive to work?

cost, full cost or operating cost? Finally, how many people pay to park and do they know the cost of parking?

Respondents were asked directly if they had estimated the cost of driving to work. Only about 25 percent, according to their own report, had ever estimated this cost (Table 1). Note that Table 1 is restricted to people who were interviewed in person and who reported that they always drove to work. Most people, it appears, never bother to estimate what it costs to drive to work.

Despite the low percentage of the population who have estimated the cost of the

journey to work, when asked about how much it costs to drive to work one-way, including gas, oil and any tolls, 9 of 10 respondents were able to give an estimate for their own journey, and 8 of 10 gave estimates for other family members' journeys (Table 2). It appears, then, that people do have some idea about the cost of driving to work.

Given that most people can estimate outlay for gas and oil, how reasonable are their estimates? In order to check, it is necessary to examine the estimates on a cost-per-mile basis. People were asked to report the number of miles from home to work. If reports of the distance to places of work are correct, the conversion from total cost to cost per mile can be an accurate description of what people perceive as the per-mile cost. To check the accuracy of the distance estimates, figures from the interviews were compared with estimates taken from maps. This check proved difficult to complete and was made for only 31 journeys by auto.

Interviewees were asked to name the two streets at the intersection nearest their homes and the two streets at the intersection nearest their places of work. These intersections were located on large maps. A principal difficulty was in obtaining maps with a large enough scale to show individual streets and which still covered enough territory to include both place of work and place of residence. A standard map measure consisting of a small wheel and a scale with an indicator showing the distance covered by the wheel was then used to estimate the distance between these intersections along what seemed to be the most reasonable route (Table 3).

TABLE 2  
ESTIMATES OF THE COST OF THE DRIVE TO WORK, COUNTING  
GAS, OIL, AND ANY TOLLS  
(Percentage Distribution of Journeys to Work Where Worker Always  
Drives, 1965 Survey)

Estimate	All	Respondent's Journey	Other Family Member's Journey
Estimate given	88	94	81
Less than 20 cents	21	23	19
20-29 cents	24	28	18
30-39 cents	16	15	16
40-49 cents	4	4	5
50-74 cents	14	15	14
75-99 cents	4	5	3
\$1.00 or more	5	4	6
Estimate not given	12	6	19
Total	100	100	100
Number of journeys	485	253	232
Median	30 cents	28 cents	31 cents

The question was: About how much does it cost (worker) to drive to work one-way, including only gas and oil and any tolls he may have to pay?

**TABLE 3**  
**COMPARISON OF TWO ESTIMATES OF DISTANCE BETWEEN WORKERS' HOMES AND PLACES OF WORK**  
**(Percentage Distribution)**

Estimates From Interviews (mi) <sup>a</sup>	Estimates From Map (miles)														All	Estimates (No.)
	Less Than $\frac{1}{2}$	1	2	3	4	5	6	7	8	9	16	18				
1	3	14				3									20	6
2			3		3	3									9	3
3							7								7	2
4				3	3	7									13	4
5				7											7	2
6								3	3					3	9	3
7							11		3						14	4
8																0
9										3					3	1
10								3	3		3				9	3
12										3					3	1
22											3				3	1
26											3				3	1
All	3	14	3	10	6	31	6	9	3	6	6	3	3	100		
Number of estimates	1	4	1	3	2	9	2	3	1	2	2	1				31

<sup>a</sup>The total of all cells adds to 100 percent.

Although the two independent estimates of distance varied considerably, there did not seem to be any systematic tendency for respondents on the average to either underestimate or overestimate the distance to work. Thus, for all distances the average (mean) calculated from respondents' reports and from map readings was nearly the same. The mean from respondents was 6.1 mi and from the map 5.7 mi. However, individuals' estimates of the cost of driving to work may often be too high or too low because they do not estimate the distance correctly.

There is some reason to believe that estimates of average cost per mile for all respondents are not seriously biased by inaccurate reports of distance. The dispersion of respondents' estimates of cost per mile is partly the result of errors in both directions and reports of distance. The distribution is given in Table 4.

**TABLE 4**  
**COMPARISON OF MAP ESTIMATES AND RESPONDENTS' ESTIMATES OF THE DISTANCE TO WORK**  
**(Percentage Distribution, 1965 Survey)**

Respondents' Estimate	Percent of Auto Journeys to Work
Higher	42
Same	29
Lower	29
Total	100
Number of journeys to work	31 <sup>a</sup>
Mean distance from respondents' reports	6.1 miles
Mean distance from map readings	5.7 miles

<sup>a</sup>These journeys to work are those for which it was convenient to make the check indicated. They do not constitute a sample of all journeys to work.

TABLE 5  
COST PER MILE OF THE JOURNEY TO  
WORK BY AUTO  
(Percentage Distribution, 1965 Survey)

Cost Per Mile (cents)	Percent of Auto Journeys
1	1
2	9
3	14
4	12
5	9
6	7
7	3
8 or more	27
Not ascertained	18
Total	100
Number of journeys to work	600
Median cost per mile	5.1 cents

The questions used to calculate this distribution were: How far is it from your home to (worker's) place of work? About how much would it cost (worker) to drive (ride) to work one-way, including only gas and oil and any tolls (he) might have to pay?

Even if the estimate of the price of gasoline is increased to 38 cents a gallon, total cost for fuel reaches only about 3.1 cents a mile. An additional two-tenths of a cent per mile for oil gives a total of 3.3 cents. If it can be correctly assumed that people did include only the cost of gas and oil as the question asked, then the average perceived cost of driving to work, 5.1 cents per mile, is half again as high as the actual cost. Moreover, as noted previously, there is no reason to believe that the average cost per mile is biased by respondents' distance estimates.

Should it be concluded that people have in their minds estimates of costs which are seriously in error? Perhaps it is more accurate to say that people actually have little idea of what it costs to drive their cars to work. As Table 1 indicated, few people have actually estimated the cost. When asked to guess, they can do so. When they do guess, they seem to guess high, at least their estimates of cost for gas and oil are high. Indeed, the estimate of 5 cents for gas and oil is about equal to an authoritative estimate of total operating cost including not only gas and oil, but also tires, maintenance and that part of depreciation associated with mileage. Hewes and Oglesby (4) estimate total operating cost at 3.7 to 4.3 cents at 30 mph or 5.2 to 5.4 cents at 60 mph, plus the cost of standing time, deceleration, and acceleration as conditions may require.

A major question concerning the cost of driving to work is whether the relevant cost is the operating cost or the full average cost of owning and maintaining the vehicle. In the 1963 survey, people who reported that they had already estimated how much it cost per day to drive to work were asked what they had included in their estimate. As given in Table 6, about one in three had included depreciation. Thus, on the surface it appears that most people do not consider full cost to be relevant.

TABLE 6  
PERCENT INCLUDING DEPRECIATION  
IN THEIR COST ESTIMATES OF THE  
JOURNEY TO WORK  
(Percentage Distribution of People Who  
Said They Had Estimated the Cost,  
1963 Survey)

Category	Percent
Depreciation included	33
Depreciation not included	58
Not ascertained	9
Total	100
Number of journeys to work	151

The questions were: How much would your estimate be of the cost per day? What does this figure include?

TABLE 7  
CARS USED MAINLY FOR JOURNEY TO WORK AND WHICH WOULD  
BE KEPT EVEN IF NOT USED TO GET TO WORK  
(Percentage Distribution, 1965 Survey)

Category	First Car	Second Car	Third Car
Used mainly to get to work	41	46	36
Would be kept even if not used to get to work	38	35	10
Would not be kept for purposes other than getting to work	3	11	26
Used mainly for other purposes or has multiple uses	59	54	64
Total	100	100	100
Number of cars	615	261	39

The questions were: Is this car used mainly to get to work, or for shopping or what? (If to get to work) Would (you) still keep this car even if (you) didn't use it to get to work?

The 1965 survey approached this same question from a different viewpoint. If full cost is, in fact, the relevant concept, then cars used mainly to get to work would not be kept if they were no longer needed for this purpose. In the survey, people were asked a series of questions about each of their cars. These questions were recorded by the interviewer in columns headed first, second and third. This classification has been preserved in the tabulations. All second cars are necessarily owned by families with more than one car. Which of the cars owned by a two-car family is first, and which is second may be more or less arbitrary, or a matter of which is more valuable.

As given in Table 7, about 41 percent of all first cars are used mainly to get to work. Only 3 percent, however, would be sold if not used for the journey to work. Of the second cars, only 11 percent would not be kept. Of the third cars, only 26 percent would not be kept for purposes other than getting to work. From this information, it would appear that full cost is relevant only for a small minority of the population. People who would retain their cars anyway should consider only the marginal cost of driving to work in comparing the cost of getting to work by auto and by public transportation. It should

TABLE 8  
MEAN ANNUAL MILEAGE BY CLASSIFICATION  
ACCORDING TO USE  
(1965 Survey)

Auto Use	Mean Annual Mileage	
	First Car	Second Car
Used mainly to get to work	13,600	12,000
Would be kept even if not used to get to work	13,400 (198)	12,600 (70)
Would not be kept for purposes other than getting to work	15,800 (17)	10,400 (23)
Used mainly for other purposes or has multiple uses	10,100 (321)	8,400 (112)
All	11,600	10,000

Figures in parentheses are the number of cars in the cell. The question was: About how many miles a year do you people average on this car?

be remembered that a large majority of car-owning families own only one car. (In early 1965, 79 percent of all families in the country owned at least one car but only 24 percent owned more than one.) Ninety-seven percent would keep the first car regardless of the journey to work.

A way to check on the reasonableness of these results is to examine the average annual mileage of cars used for different purposes. Does the journey to work represent a large or a small fraction of annual mileage? It will be recalled that average distance to work is between 5 and 6 mi, or 10 to 12 mi roundtrip—roughly 2500 to 3000 mi in 250 working days. This estimate no doubt should be increased to allow for the fact that some people drive home for lunch, but presumably these tend to be people who live very close to their jobs so that the added mileage would be small. Total reported annual mileage is shown in Table 8. A distance of 3000 mi or so is not a large fraction of the average annual total of 11,600 mi for first cars or of the 10,000 miles for second cars in the metropolitan areas studied.

Closer examination of Table 8 shows that cars driven mainly to get to work are driven farther than those used mainly for other purposes. For first cars, the difference is between 10,100 and 13,600 mi or about 3500 mi on the average. For second cars, the difference is between 8400 and 12,000 mi or about 3600 mi. These estimates are roughly consistent with the estimate of somewhat more than 3000 mi a year on the average to drive to work and back (on the assumption that cars used to drive to work are driven about as much as other cars plus the mileage driven to and from work).

One would expect that cars which would not be kept if not used for the journey to work would be driven fewer miles per year than cars which would be kept even if not used for this purpose. Table 8 suggests the contrary. There is little difference in average number of miles per year between cars which would be kept and cars that would not be kept. The number of cars which would not be kept is so small, however, that these estimates are not reliable.

For most people marginal cost is appropriate rather than full average cost in deciding whether to drive to work. There are several reasons for coming to this conclusion. Most people who have estimated the cost do not count depreciation. Most cars would be kept even if not used for work. On the average, the journey to work accounts for only a quarter to a third of the annual mileage on cars that are driven to work. The mileage driven to work seems to be additional to what is needed for other trips.

Most people never have estimated the cost of driving to work. When asked to do so, they can, but they have a general tendency to exaggerate the cost of gasoline and oil. Generally, people who go to work by car are not concerned enough about the cost to make an effort to estimate it carefully.

To understand this, consider the way in which people actually pay the cost of automobile transportation. They pay for a car when they buy it (or when they pay the installments). They then use the car for all sorts of trips over a period of several years. They pay insurance and registration fees annually. Some maintenance and repair expenditures may be made at more or less regular intervals, whereas others occur sporadically. In any event, there is usually no direct connection between any particular use of a car and the expenses associated with operation. Even when a person fills his gasoline tank he usually uses the fuel for a variety of trips. As discussed previously, most cars used to drive to work are also used for other purposes. To allocate costs to the journey to work requires an effort which people usually do not make.

This reasoning does not apply, however, to any tolls or parking fees that people may pay in connection with the drive to work. It is possible that people may be influenced by these direct outlays associated with the trip to work. Very few people pay tolls on the way to work. Thus, the more important direct outlay is for parking fees.

Two questions arise immediately in connection with parking fees. Do people pay to park? Do they know the cost of parking? Table 9 shows that only 8 percent of auto journeys to work involve a parking fee. Nearly everyone seems to be aware of whether the worker, who may be a family member other than the respondent himself, must pay to park. People also seem to be well aware of the amounts workers in the family pay for parking. Respondents claim to know the parking fee for 88 percent of all auto journeys to work—for only 12 percent were no estimates obtained (Table 9, part B).

TABLE 9  
PARKING FEES

A. Whether Worker Has to Pay to Park	Percent Who Go by Car
Always rides or does not keep car at work	16
Pays to park	8
Does not pay to park	76
Not ascertained whether pays to park	— <sup>a</sup>
Total	100
Number of journeys to work	648
B. Cost Per Day to Park	Percent Who Pay to Park
Fee given	88
Under 10 cents	8
10-19 cents	10
20-29 cents	10
30-39 cents	13
40-49 cents	4
50-74 cents	15
75-99 cents	13
\$1.00 or more	15
Fee not ascertained	12
Total	100
Median parking fee	48 cents
Number of journeys to work	52

<sup>a</sup>Less than one-half of 1 percent.

The fees paid are substantial compared to the direct operating cost of an automobile. For a typical 5-mi journey, the actual operating cost, including all variable costs, at 5 cents a mile would be from 25 to 30 cents one way, or 50 to 60 cents round trip. The median parking fee is about 48 cents. Generally, the imposition of such a fee in a typical situation would double the direct cost of the journey to work.

People who always journey to work by common carrier but who could go by auto if they chose also appear to be well-informed about the presence of parking costs. Here reports were obtained for 93 percent of the journeys. Of these, 16 percent would include a parking fee (Table 10).

Do parking fees actually discourage people from driving to work? To answer this question at least tentatively, Table 11 compares the method of getting to work of those in a situation in which driving involves a parking fee with those in a situation where parking

is free. Because the number of journeys is small, these figures must be interpreted cautiously. Table 11, however, does support the initial premise that outlays directly related to the journey to work may be more important in the minds of people than vehicle operating costs. The presence of parking fees appears to reduce the number of journeys always made by car by roughly 20 percent, from 92 to 70 percent. The 20 percent who appear to be influenced by parking fees do not switch entirely to common carrier. Well over half say they go by common carrier sometimes and by auto at other times. Twice as many workers who must pay parking fees always go by common carrier—13 percent compared

TABLE 10  
PERCENT OF WORKERS WHO GO TO WORK BY COMMON CARRIER THAT WOULD HAVE TO PAY PARKING FEES IF THEY SWITCHED TO AUTO (Percentage Distribution, 1965 Survey)

Category	Percent
Would have to pay to park	16
Would not have to pay to park	63
Not ascertained	7
Would not keep car at work	14
Total	100
Number of journeys to work	51

TABLE 11  
 MODE USED IF WORKER MUST PAY TO PARK  
 (Percentage Distribution of Journeys for Which the Worker Can  
 Go by Automobile and the Car Would Be Kept at Work,  
 1965 Survey)<sup>a</sup>

Mode Actually Used	All	Whether Pays or Would Have to Pay to Park	
		Yes	No
Always by car	89	70	92
Sometimes by car, sometimes by common carrier	4	17	2
Always by common carrier	7	13	6
Total	100	100	100
Number of journeys to work	586	60	526

<sup>a</sup>This table eliminates people who would not keep the car at work.

to only 6 percent of workers who did not pay parking fees. Parking fees appear to have a considerable effect on choice of mode.

A word of caution should be added about this result. Parking fees may be charged in congested areas in urban centers where common carrier service is well developed. People may ride the common carriers because of the service. The results in Table 11, in other words, may be to a greater or lesser extent a reflection of the existence of alternatives to the auto rather than, as appears, the effect of parking fees alone.

In summary, few journeys to work involve a parking fee. People are well aware of those that do and seem to know the cost. Parking fees do appear to induce some people to travel by common carrier rather than auto. The percent of journeys always made by car drops rather dramatically (by about 20 percent) when the worker with a choice of modes must pay a parking fee, but so few journeys involve a parking charge that the shift, in absolute terms, is small.

There has been considerable discussion of the possibility of using parking fees as a means of influencing people to go to work by common carrier. Whether such a policy would be desirable is a question beyond the scope of this paper. The findings presented do indicate that parking fees could be used to discourage driving.

### THE COST OF PUBLIC TRANSPORTATION

Up to this point the main concern has been with the perceived cost of auto transportation. This section concerns the cost of public transportation. On the basis of the preceding analysis one would suppose that people would be reasonably well informed about common carrier fares. A fare is similar to a parking fee in that it is paid in cash and is directly and obviously associated with a particular journey.

From the viewpoint of the researcher, however, it is not easy to say whether people who do not go to work by common carrier but could do so are informed about fares. The difficult problem is to define who the people are who could go to work by common carrier. In this paper people's own reports are taken for information as to whether they have common carrier service available.

Respondents were able to report fares for about 78 percent of all journeys where, according to the respondent, the worker uses the common carrier or could if he chose (Table 12). As one would expect, fares were more often reported for journeys actually made by common carrier than for those where common carrier service, though available, was not used by the worker (93 percent for users as opposed to 73 percent for non-users). There were not enough journeys by common carrier in the sample to permit separate tabulation of respondents' reports for their own journeys to work. If reports by wives for husbands and vice versa could be eliminated, presumably 100 percent of users could report fares.

TABLE 12  
 ONE-WAY COMMON CARRIER FARE REPORTED BY WORKERS  
 WITH AVAILABLE COMMON CARRIER SERVICE  
 (Percentage Distribution of Workers Who Report Availability of  
 Common Carrier Service for Their Journey to Work, 1965 Survey)

One-Way Fare	All	Uses Available Service	Does Not Use Available Service
Fare reported	78	93	73
Less than 20 cents	4	4	4
20-29 cents	43	44	43
30-39 cents	21	30	17
40-49 cents	3	2	3
50-74 cents	4	7	3
75-99 cents	2	4	2
\$1.00 or more	1	2	1
Fare not reported	22	7	27
Total	100	100	100
Number of journeys	205	55	150

To check the accuracy of peoples' reports about the journey to work, reports were obtained from local transit companies about journeys to work of heads of households. Information supplied to the transit companies included the names of the streets at the nearest intersection to the worker's home and at the nearest intersection to his place of work. They were also given the worker's time of arrival at work. The transit companies were asked whether there was service available for each journey that would get the worker to work at the stated time and if so, how much a one-way fare would cost. Information was obtained on 82 percent of the journeys to work for which information was requested from the transit companies. The number of reports asked for from each company was small because the survey was originally made in 32 metropolitan areas. There was a tendency on the part of some of the companies to regard the sample as inadequate as a sample of their own area. This criticism misses the point that the sample was designed to represent the 32 areas collectively rather than each individually. A more complete account of this project will be found elsewhere (2, Appendix A).

Among the items of information obtained from the transit company was the fare which they would charge for each specific journey to work. It is possible, therefore, to compare data from the interviews with information from the companies. This comparison is given in Table 13 for journeys actually made by common carrier and in Table 15 for

TABLE 13  
 COMPARISON OF REPORTS OF FARES FROM INTERVIEWS AND  
 FROM TRANSIT COMPANIES FOR JOURNEYS MADE BY  
 COMMON CARRIER  
 (Percentage Distribution, 1965 Survey)

Comparison	Percent of Journeys to Work of Heads of Families Who Use Common Carrier Service
Interview reports higher fare than transit company	17
Same fare from both reports	64
Interview reports lower fare than transit company	14
No estimate of fare in interview	5
Total	100
Number of journeys to work	36

TABLE 14  
COMPARISON OF REPORTS OF FARES FROM INTERVIEWS AND FROM TRANSIT  
COMPANIES FOR JOURNEYS MADE BY COMMON CARRIER  
(Percentage Distribution, 1965 Survey)

Company Fares (cents)	Fares From Interviews (cents)						All	Reports (No.)
	Less Than 20	20- 29	30- 39	40- 49	50- 74	75- 99		
Less than 20	3						3	1
20-29	3	41	6				53	18
30-39		3	20	6			32	11
40-49			3				3	1
50-74				3	3		6	2
75-99			3				3	1
All	6	44	32	9	3	6	100	
Number of reports	2	15	11	3	1	2		34

TABLE 15  
COMPARISON OF REPORTS OF FARES FROM INTERVIEWS AND  
FROM TRANSIT COMPANIES FOR JOURNEYS WHICH COULD  
HAVE BEEN MADE BY COMMON CARRIER BUT WERE NOT

Comparison	Percent of Journeys to Work of Heads of Families for Which Common Carrier Service Is Available But Is Not Used
Interview reports higher fare than transit company	18
Same fare from both reports	52
Interview reports lower fare than transit company	9
No estimate of fare in interview	21
Total	100
Number of journeys to work	98

TABLE 16  
COMPARISON OF REPORTS OF FARES FROM INTERVIEWS AND FROM TRANSIT  
COMPANIES FOR JOURNEYS WHICH COULD HAVE BEEN MADE BY COMMON  
CARRIER BUT WERE NOT  
(Percentage Distribution, 1965 Survey)

Company Fares (cents)	Fares From Interviews (cents)							All	Reports (No.)
	Less Than 20	20- 29	30- 39	40- 49	50- 74	75- 99	\$1.00 or More		
Less than 20	1	1						2	2
20-29	4	40	14					58	45
30-39		3	17	4	1			25	19
40-49			4	3				7	5
50-74				1	4	1	1	7	6
75-99						1		1	1
All	5	44	35	8	5	2	1	100	
Number of reports	4	34	27	6	4	2	1		78

journeys not made by common carrier, but which people themselves said could have been made by common carrier. It should be kept in mind that in the survey only one interview was taken per family and that the person interviewed was alternately designated as the head of the family or the wife of the head. Thus, about half of the reports about heads' journeys to work were made by wives.

As given in Tables 13, 14, 15 and 16, the accuracy of reporting is reasonably good for both common carrier users and nonusers. The reports for journeys actually made by public transit more often exactly coincide with the companies' reports. Even where the two do not coincide exactly the differences are small. Most people know the fare within a nickel or dime. Nonusers are more likely not to know the fare. About one out of five nonusers cannot give an estimate. Nevertheless, when common carrier service is available for the journey to work, most people know fairly accurately how much it costs.

#### THE RELATIVE COST OF AUTO AND PUBLIC TRANSPORTATION

In comparing the cost of getting to work by car and by common carrier, one way to proceed is by estimating the cost by each method and then comparing the estimates. Essentially it is this approach that has been followed in this discussion. An alternative is to approach the comparison directly. People who do not know the exact cost of getting

TABLE 17

OPINIONS AS TO WHETHER CAR OR COMMON CARRIER IS MORE EXPENSIVE  
(Percentage Distribution of Journeys to Work for Which People Say There Is A Choice,  
1963 Survey)

A. Whether Car or Common Carrier Is More Expensive	Percent of Journeys for Which There Is a Choice
Car is more expensive	38
Car and common carrier cost the same	25
Common carrier is more expensive	23
Not ascertained which is more expensive	14
Total	100
Number of journeys to work	198
B. Whether People Were Able to Estimate the Difference in Cost	Percent of Journeys for Which People Thought One Mode Was More Expensive
Could estimate difference in cost	40
Could not give an estimate of the difference	60
Total	100
Number of journeys to work	148
C. Estimated Differences in Cost Per Day	Percent of Journeys for Which Cost Differences Were Given
Less than 10 cents	5
10-19 cents	12
20-29 cents	12
30-49 cents	19
50-74 cents	30
75-99 cents	3
\$1.00-\$1.49	12
\$1.50 or more	7
Total	100
Number of journeys to work	59
Median difference in cost	52 cents

The questions were: How does this trip by (common carrier) compare with going by car in terms of total cost? Do they cost the same or is one more expensive than the other? (If one more expensive) How much difference in cost is there?

to work by car may nevertheless have an opinion as to whether car or common carrier is the more expensive for their trip to work. Responses to the direct question about the comparison are given in Table 17. For 86 percent of the trips, respondents had some idea of the relative cost, whereas for 14 percent of the journeys no response was given. Thus, nearly everyone can give an opinion on this point if asked for one, just as nearly everyone who drives to work can make some sort of estimate of the cost of gas and oil. People say that common carrier and auto cost the same for about 25 percent of the journeys. Of the remaining 61 percent, 38 percent think car is the more expensive mode while only 23 percent hold the opposite opinion. Because people in general overestimate the cost of gas and oil for driving to work, it is not surprising that they tend to think of the automobile as the more expensive mode of travel.

Although people have opinions about which is the more expensive mode, for most people these notions are vague. For journeys deemed by the respondent to be more expensive by one mode than the other, a question was asked about the amount of the difference. Estimates of the cost differential were not obtained for 60 percent. Of the 40 percent who made estimates, over half estimated the cost differential to be more than 50 cents (Table 17, part C). Such cost differentials seem unreasonably high. They are impossible unless the 59 journeys included here all have some unusual characteristics. The general impression one gains from people's statements of relative costs of public and private transportation is that, though they may have ideas about the matter, these ideas are not based on careful calculations.

A measure of relative cost based on these estimates from the 1963 survey was included in a regression analysis of choice of mode for the journey to work which has been reported elsewhere (3). It had no value as a predictor. The conclusion indicated, from the evidence as a whole, that people do not have strong and well developed opinions about the relative cost of travel to work by car compared to public transportation.

#### SUMMARY

One conclusion is that most people are not trained cost accountants! They seem to be reasonably well aware of the prices of the goods and services which they buy, especially parking fees and the fares charged by transit companies. But to make close estimates of the cost of the journey to work by car requires allocation even of fuel costs, because a tank of gasoline can be used for a variety of purposes. People do not seem to be sufficiently motivated to make such estimates.

The uncertainty in their minds about true costs seems to lead people to overstate the cost of driving an automobile to work. Their estimates of fuel cost seem to be too high. People are well aware, however, of parking fees at work and some people seem to be influenced by them not to drive to work.

Those comparatively few people who have estimated the cost of driving to work usually do not include depreciation. In this way they seem to be correct since the journey to work accounts for only 25 to 30 percent of the annual mileage of cars which are driven to work, and because most people state that they would keep even their second and third cars regardless of whether they were used to get to work.

#### REFERENCES

1. Lansing, John B., Mueller, Eva, and Barth, Nancy. Residential Location and Urban Mobility. Inst. for Social Research, Univ. of Michigan.
2. Lansing, John B. Residential Location and Urban Mobility: The Second Wave of Interviews. Inst. for Social Research, Univ. of Michigan.
3. Lansing, John B., and Barth, Nancy. Residential Location and Urban Mobility: A Multivariate Analysis. Inst. for Social Research, Univ. of Michigan.
4. Oglesby, C. H., and Hewes, L. I. Highway Engineering, 2nd Edition. John Wiley and Sons, p. 65, 1963.