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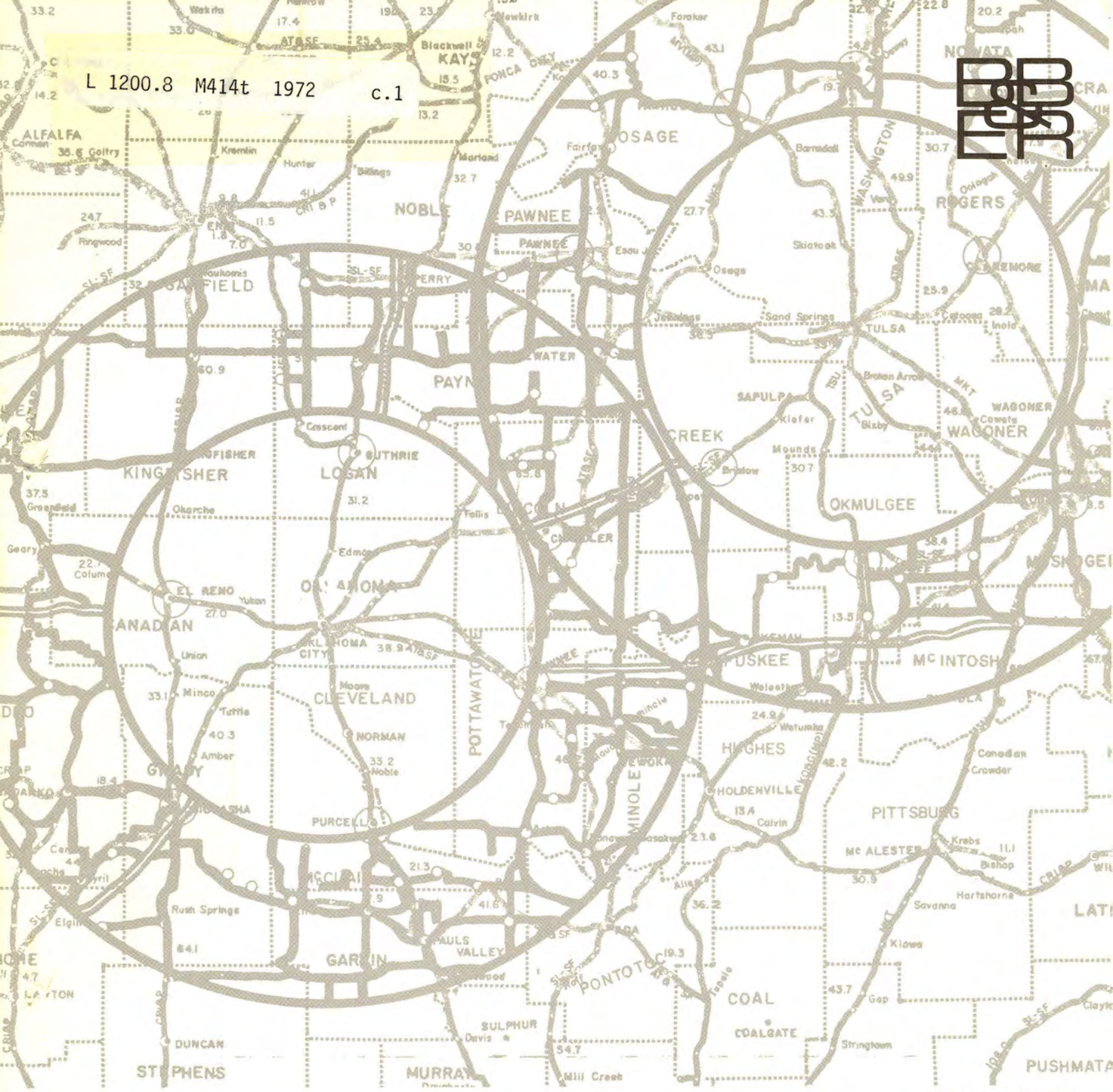

Prepared for the:
OKLAHOMA LEGISLATIVE COUNCIL

By the:
BUREAU FOR BUSINESS AND ECONOMIC RESEARCH
University of Oklahoma

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Mass Transit Options for Oklahoma: Some Implications for Future Development

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by

James A. Constantin and Larry W. Canter
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The University of Oklahoma
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A Report to

The Legislative Council
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APPROPRIATION—RAPID TRANSIT STUDY

CHAPTER 180

H.B.No.1124

AN ACT RELATING TO RAPID TRANSIT SYSTEMS; MAKING AN APPROPRIATION TO THE STATE LEGISLATIVE COUNCIL; STATING PURPOSE; PROVIDING FOR LAPSE DATE; AND DECLARING AN EMERGENCY.

Be it enacted by the People of the State of Oklahoma:

SECTION 1. Appropriation—Purpose

There is hereby appropriated to the State Legislative Council from the General Revenue Fund of the State Treasury for the fiscal year ending June 30, 1970, not otherwise appropriated, the sum of Fifteen Thousand Dollars ($15,000.00) for use by the State Legislative Council in making a comprehensive study of existing transportation facilities within the state, and methods by which the same could be better utilized in the rapid transit of persons and goods, particularly within the metropolitan areas of the state, and more particularly as the same might enhance and develop industrial and economic growth within the state and the nation. The State Legislative Council may, in the course of such study, use the funds herein appropriated for the payment of salaries, purchase of materials and supplies, travel, and other expenses, and may enter into contracts and agreements with educational and research institutions such as may be necessary in the conduct and completion of said study. A ten member nonvoting advisory committee shall be appointed to assist the Legislative Council in its study. Five (5) advisory members shall be appointed by the Speaker of the House of Representatives and five (5) shall be appointed by the President Pro Tempore of the Senate. The advisory members shall be selected on the basis of their specialized knowledge and experience in the fields of transportation and economics.

SECTION 2. Appropriation fiscal

The appropriation made by this act shall be subject to fiscal year limitions and may be encumbered through June 30, 1970. Any funds remaining at the end of ninety (90) days after the close of the fiscal year shall lapse and be transferred to the credit of the General Revenue Fund for the then current year.

Approved April 17, 1969. Emergency.

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Chapter 1

INTRODUCTION

In the past few years, transportation planning at both state and federal levels has become oriented toward the development of mass transit systems to relieve some of the problems caused by over-dependence upon the individual automobile.

In our large metropolitan centers where the problems are most evident, overcrowding, pollution and high accident rates have made it almost mandatory to offer alternative means of transportation. Nationwide, as new highways are always in demand and yet are filled past capacity upon completion, it has become evident that a new look at transportation priorities should be undertaken.

Federal research in this area has focused on the development of high-speed rail transportation, monorail travel, high-speed bus lanes on existing highways and other exotic and nonexotic methods of traveling from one point to another. And many states have also begun a major commitment of funds for transportation research, although it must be admitted that highways still get the bulk of tax funds at this time.

However, the question of transportation priorities involves more than providing methods of travel for the public. Indeed, the transportation network of a state or region can have a dramatic impact on the entire development of that area. For example, where transportation is tied to river navigation, settlement and development tend to follow a linear pattern, paralleling the river. Where the automobile is the primary means of transport, development tends to be more far-flung or dispersed, perhaps leading to the pattern known as "urban sprawl."

Thus changes in the type of transportation system available can and should be geared into desirable changes in the overall plan of development for a region.

In Oklahoma, it has been suggested that the development of a coordinated transportation system, tying the flexibility of the automobile to train transportation, could be used to help meld our cities into a system of cities. In a 1967 study, the Special Committee on Rapid Transit Systems of the Oklahoma Legislative Council developed a preliminary plan for using existing railway lines for such a transportation plan. The plan envisioned high-speed transit into the state's two major metropolitan areas from locations some 60 miles away. It was felt that such an arrangement would allow citizens to commute easily and quickly to the metropolitan areas for work or other purposes and yet continue to live in a small-town environment, a life-style which many Oklahomans seem to prefer. Economic development would also be aided by such a system, it was thought, as employers would be assured to easy access to their potential business location.

Other considerations in the earlier study focused on the need for using existing resources (railways) which are now being largely abandoned by their

owners for passenger travel. Also of importance was the thought that such a transportation system might well help our state avoid some of the problems of more populated areas before these develop.[1]

At any rate, the work of the Rapid Transit Committee raised a number of questions which called for more detailed study into transportation alternatives. Since that Committee dealt with the state as a whole in attempting to describe a new departure in transportation, it was thought that some of these questions might be answered more easily by concentrating on one segment of the state.

This report focuses on transportation alternatives between Shawnee, Oklahoma, and Oklahoma City, Oklahoma, a distance of some 30 miles. The rationale for choosing this corridor is the existence of two sets of train tracks, an interstate highway, and several thousand commuters who work in the metropolitan area but prefer to live in Shawnee. Given these characteristics, it is assumed that questions answered for this area will be applicable in a general way to similar areas of Oklahoma.

Specifically, we sought answers to the following questions:

1. Would rapid rail transit be feasible at the present time along this corridor?
2. What are the characteristic needs and attitudes of the (Shawnee) traveling public towards mass public transport?
3. What are the potentials of bus and automobile transportation in this corridor?
4. If an effective mass transit system including high-speed rail transportation were developed in this region, what would be the economic, social and environmental implications for the future of such a system?
5. Finally, how should the state proceed in the future in the area of transportation planning to insure the most balanced development possible?

Chapter 2

ENVIRONMENT OF THE PROPOSED SYSTEM

Rail Transportation Facilities

While there are rail connections between Shawnee and Oklahoma City, people have had to depend on automobiles and buses for transportation. The Atchison, Topeka and Santa Fe Railway Company (Santa Fe) no longer routes its trains over their Shawnee-Oklahoma City tracks. A field study of the right of way was made as the first step in an investigation to determine the feasibility of using Santa Fe facilities for immediate service.

A team walked the tracks between Oklahoma City and Shawnee to determine the condition of rails, subgrades, ties, drainage structures, bridges and curves. All were found to be in bad condition. In fact, about three miles east of Midwest City several sections of track had been removed. These two factors preclude the use of the tracks for immediate service, so no attempt was made to verify a report that all track had been removed after our survey.

With rail service eliminated as a short-term alternative, no evaluation was made either of terminal sites for use of potential rail passengers or of the legal, managerial or technological implications of the use of Santa Fe property.

For the future, the Santa Fe right of way can at best be considered only a strip of real estate extending between the two cities. If a modern rail transit system should be developed, practically everything pertaining to it would have to be replaced. Whether the right of way would be available is questionable, for there are several obstacles to its acquisition by negotiation. First, the railroad uses a portion of the right of way in terminal operations near Oklahoma City, so special arrangements will be necessary. Further, at the time of our meeting with them, Santa Fe officials had not made a study of their deeds to determine their right to dispose of the right of way. Terms of acquisition of rail right of way varied from place to place during the era of railroad building, and in some cases, land would revert to original or adjacent owners in the event of abandonment.

In addition, the new rail passenger organization AMTRAK must give its approval for any new passenger operations. Since immediate use of rail facilities for transit operations is out of the question, these and other legal problems are of no immediate concern. In the event of funding the more comprehensive study of an advanced transit system, these problems will require analysis.

Report of Field Study

While two railroads have connections between Shawnee and Oklahoma City, the "Rock Island" lines curve northward from Shawnee through Harrah and Choctaw, making that route rather circuitous for our purpose. For this reason, our field survey dealt with the straighter "Santa Fe" railway line. A team walked

the railroad tracks of AT&SF from Oklahoma City to Shawnee and recorded the conditions to determine how much, if any, of the track could be salvaged. To make things simpler, a grade of 100, 90, 80, etc., was given to each of the following: track, subgrade, ties and drainage structures. These grades were given for each mile of track. The following is a general breakdown of grades in each of the above categories.

Tracks or Rails

Rail conditions in Oklahoma City were fair to good mainly because they are still in use. As we left Oklahoma City, the rails were still above average but buckling, sagging and crimping were noticed in the rails. These conditions occurred intermittently until the Dolese plant 4 miles south and 4 miles west of Choctaw (3 miles east of Midwest City). At this point, a barricade had been put up and several sections of track removed. From the Dolese plant all the way to Shawnee the rails were rusted indicating that they have not been used for a long time. In almost every mile there were examples of rail buckling or settling; warping was also noted. The rails scored about 50 to 70 in our judgment, indicating that some sections could be left in if need be while other sections must be replaced.

Subgrade

Subgrades were taken as the railroad bed including base and subbase. No attempt was made to separate the two because if replacement is necessary, the entire subgrade must be replaced. In general, the subgrade was not in very good condition. The average scores were from 40 to 70. One point to be made is that if rapid transit were to travel this route, it might be wise to flatten the side slopes of some of the high fills to give passengers a more secure feeling. Those slopes have been standing for many years and are well-fixed with vegetation, but still they appear to fall straight down when looking from the top, particularly on the fills over 30 feet high. It is thought that moderate expenditures will be required for subgrades.

Ties

Very few good things can be said for the conditions of the ties. Everytime a dated nail was observed, a note was made of the condition of the tie. It appears that the newest ties (1965) were in worse condition than ones dated 1924. Our recommendations are to replace all ties along the route.

Drainage Structures

The dates on the culverts ranged from about 1918 to 1934 and were in surprisingly good condition. For the most part, they were free from drift, had no

silt deposit in the bottom and did not cause erosion either at the upstream or downstream end. High water marks showed that 11 of the culverts have been flowing full at some time or other.

Bridges

Out of the dozens of bridges encountered, all but four were timber trestles. Of these only about three were considered safe for controlled train passage. The others had very loose or missing ties, loose rails, poor embankment and some settlement. Almost all bridges were built on Oklahoma's characteristic sandy-red clay soil which accounts for the erosion since slide slopes were about 1 to 1. Most of these bridges should be replaced.

A point not brought out before is alignment. In the days of railroad construction, routes were chosen and built as straight as possible to save time between destinations. There was no need to build curves with small degrees of curvature because the speeds of those old trains were not critically high in relation to curvature. Rapid transit, however, is a different story; the curvature of practically all of the curves on the route must be decreased. Vertical alignment on the other hand lends itself very well to rapid transit. In only one or two places did the grades exceed about 2 per cent but these were before and after a grade crossing. Most grade crossings, if not all, should be separated by taking the railroad over the road if possible.

In general a portion of the system, about 40 per cent, would be salvageable for a limited use transit system. This system would be restricted in speed, 30 mph or less, and comfort of ride. Maintenance cost would be very high. The operation of the system would be difficult under a two way function without an expensive control system.

For the above reasons we would have to recommend that a complete new system be placed in the right of way if rapid transit service were to be initiated. It may be possible to salvage some of the culverts. The system should include a double track and high speed alignment. All crossings, both vehicle and pedestrian, should be separated. This would allow the system to operate with the maximum of speed, safety and comfort while operation and maintenance cost would be at a minimum.

This, then, describes the existing environment of the corridor as far as railway facilities are concerned. Another essential characteristic of the environment is the current degree of congestion on highways in the area, some of which we would expect a mass transit system to remedy.

Highway Congestion

One of the several functions of a mass transportation system is to relieve congestion on highways. Table 1 shows the condition and average daily traffic of the several highways connecting Oklahoma City and Shawnee. In addition, it shows the rating based upon the estimated level of service.

TABLE 1

Type, Condition, Traffic and Estimated Level of Service on Highways Connecting Oklahoma City And Shawnee

Highway (1)	Number of Lanes (2)	Condition (3)	Average Daily Traffic (Vehicles per day)[1] (4)	Estimated Level of Service[2] (5)
I-40	4	Excellent	5,000	A to B[3]
SH-18	2	Fair	17,000	B to C
SH-3	2	Fair	17,000	C to D[4]
US-177	2	Good	11,000	B or better
US-62	2	Fair-Good	1,000	
Total			10,500	

[1]Traffic between Oklahoma City and Shawnee only.

[2]Assumes reversible flow.

[3]Except near Oklahoma City central business district.

[4]Near Oklahoma City central busing district.

Source: Advance Planning Branch of the State of Oklahoma Department of Highways, *Origin and Destination Survey – Shawnee*, 1970.

Column 4 shows the amount of use of the highway by vehicles making trips between Oklahoma City and Shawnee. The estimated level of service for these highways when the total traffic is considered is shown in Column 5.

A special committee of the Highway Research Board, National Academy of Sciences, listed several factors to be considered in evaluation of the level of service under various speed and volume conditions.[2]

1. Speed and travel times
2. Traffic interruptions or restrictions
3. Freedom to maneuver
4. Safety
5. Driving comfort and convenience
6. Economy

After considering the problems and limitations of these factors, the committee established criteria for determining capacity and level-of-service relationships. Level of Service "A" describes a situation where volume of traffic is low and speed is high which permits free flow of traffic.

Under conditions identified by Level B, traffic conditions are beginning to restrict speed somewhat, but drivers may still select their speed and lane of operation. The flow of traffic is stable.

Level C is still in the zone of stable flow, but high traffic volumes affect speed and maneuverability. "A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice."[3]

Level D approaches unstable flow. Although tolerable speed can be maintained, it is affected considerably by changes in operating conditions. Drivers have little freedom to maneuver.

Since the level of service estimated for the highways between Oklahoma City and Shawnee is not rated below D, there is no need to describe Levels E and F.

The future ADT was estimated by applying normal growth functions to the basic data in Table 1.[4]

Table 2 shows the average daily traffic for Oklahoma City-Shawnee trips projected for 1990. As explained in Appendix B, the projected average daily traffic includes trucks which have been converted into equivalent passenger vehicles.

TABLE 2

Projected Number of Average Daily Trips Between Oklahoma City and Shawnee, 1990

Highway	Future ADT
I-40	14,300
SH-18	6,300
SH-3	6,300
US-177	4,640
US-62	4,500
Total	36,040

It was determined from this data that the level of service for the highways between the metropolitan area and Shawnee were "C" or better during the morning and evening peak hours. The future traffic increase attributable only to the Oklahoma City-Shawnee trips will not of itself materially increase congestion and lower the level of service of the highway system.

The conditions within the metropolitan area are now at a level of service of C or below, and the estimated traffic increase attributable to the Oklahoma City-Shawnee trips will cause these conditions to become critical. Traffic in off-peak hours is not great enough to cause a problem.

While mass transportation between Oklahoma City and Shawnee will have little effect on highway congestion in general, it may prevent serious deterioration of the level of service in the central business district of Oklahoma City at peak hours. Barring action to cope with the greater traffic, by 1990 the level of service will deteriorate even without the commuter traffic. It must be assumed that the appropriate authorities will attempt to cope with the greater traffic. Certain facilities and actions will be required to cope with the traffic in 1990. The scope of this study precluded an estimate of the effect of the Oklahoma City-Shawnee commuter traffic on the capacity of the facilities required.

Summary

1. Rail transportation using existing facilities is out of the question for the short run.
2. In the long run, the right of way could prove to be a valuable facet of either a rapid transit system or an orthodox highway link.
3. Bus service is available, so a possibility of immediate mass transit service exists.
4. All the highways are in fair to excellent condition, with those being used by most of the commuters in good or excellent condition.
5. The present congestion is at a satisfactory level in most cases, even near the central business district (CBD) of Oklahoma City. For the highways used by most of the commuters, it ranges from Level A to Level B. Even near the CBD the traffic flow is stable despite some restriction on speed and maneuverability.
6. By 1990 average daily trips are expected to rise to over 36,000 compared with the present 10,500, an increase of over 280 per cent. This increase in commuter traffic will not materially increase the congestion outside the CBD. Of course, added to the increased load of noncommuter traffic, a problem may arise.
7. Within the metropolitan area the level of service is C or below at peak hours. The estimated increase of commuter traffic will cause these conditions to become critical at peak hours.

Chapter 3

THE DEMAND FOR MASS TRANSIT: CONSUMER CHARACTERISTICS AND ATTITUDES

This portion of the study concentrates on the social and economic characteristics of the target population and describes in some detail their preferences in the area of transportation. Current transportation practices and expectations are analyzed by use of a classical survey design.

Specifically, we aimed at the following objectives:

1. Identifying potential needs of the public for mass transportation.
2. Identifying the characteristics of potential public transit users.
3. Providing information for the eventual development of a plan for marketing mass transportation.

Method

Three sets of variables were utilized to provide insight into various aspects of the transportation market in the Shawnee-Oklahoma City area, as illustrated in Figure 1. For convenience in reporting, the data on these variables may be grouped into two categories: (1) Personal characteristics and behavior patterns; and (2) Consumer attitudes toward transportation.

In Category 1, our charts show details on:

A. Personal and family characteristics
B. Drivers and vehicles
C. Transportation experience and travel habits

Category 2 includes charts on attitudes toward:

A. Flexibility, comfort and convenience
B. Time, expense and safety
C. Status, image and social considerations

Each group of charts is followed by brief comments, while the chapter is summarized in the Conclusion section.

The Sample

Preliminary investigation established that the Shawnee area employs over 75 per cent of its own working residents. Shawnee-area residents working outside the area number between 3,400-4,000.[5] Out of this number approximately 1,500-1,600 work at Tinker Air Force Base, Midwest City, Oklahoma.[6] Therefore, approximately 1,800 to 2,500 people living in the Shawnee area work outside the area and outside Tinker Air Force Base.

Upon investigation of the opportunities for employment in the Shawnee area for nonresidents, as well as contacts with Shawnee-located colleges regarding the number of commuting students, it was concluded that any mass transit system between Shawnee and Oklahoma City would at the outset be used largely by Shawnee-area residents. Based on this assumption of the population parameters, a cluster sampling plan was instituted in major residential areas in Pottawatomie County (largely the cities of Shawnee and Tecumseh). Clusters were constructed around city blocks wherever possible and also around other road-bounded geographic areas. From these blocks and areas, a random sample of thirty sample clusters were chosen. Personal interviews were conducted with all households within the sample clusters.

Interviewers used a fixed choice interview schedule (Appendix B) which was designed to gain information required by the original design (Figure 1). Questions about current behavior and those to be used for a personal profile were straightforward and caused little difficulty. Personal attitudes, however, caused greater problems.

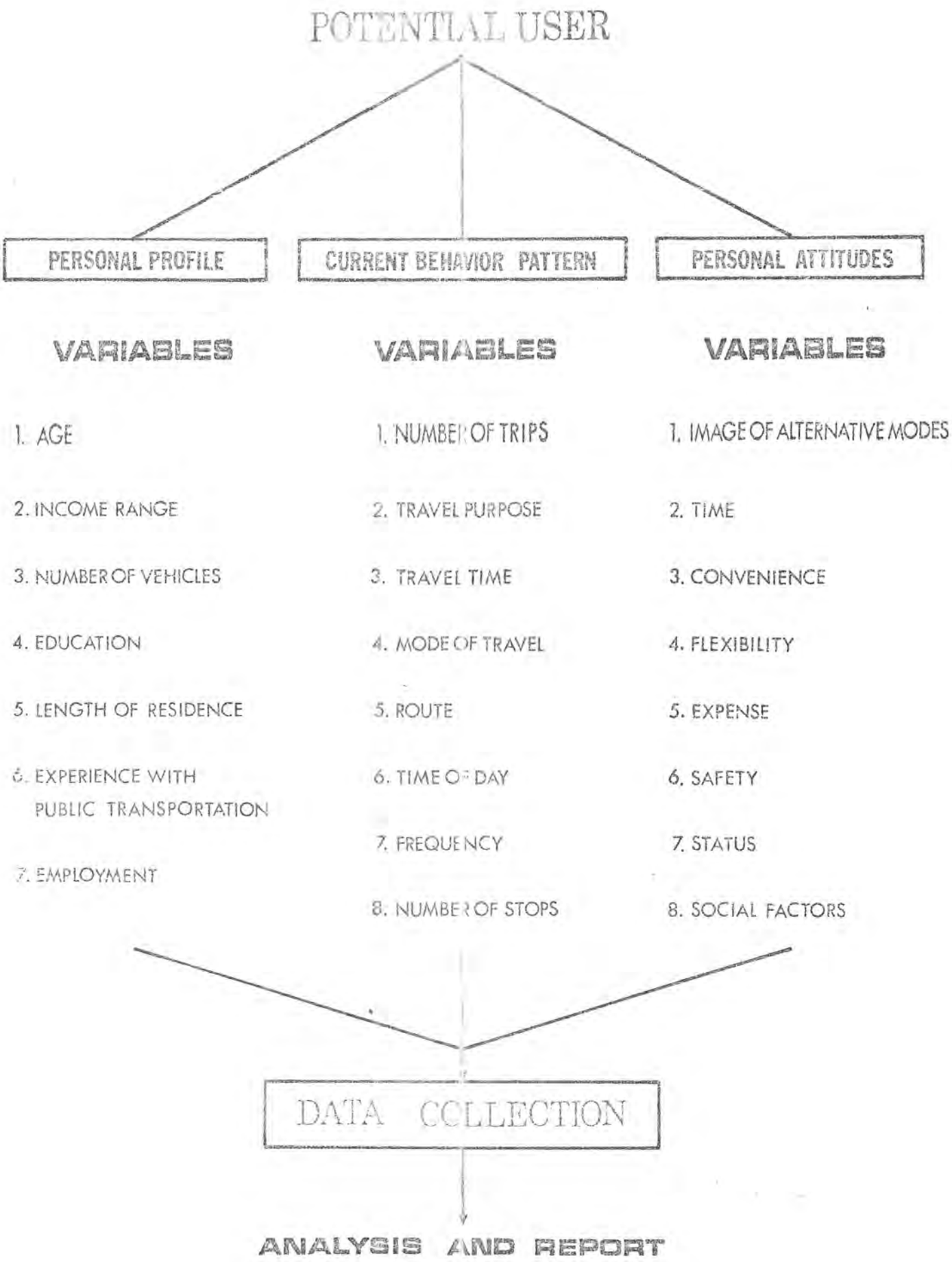


Fig. 1. Consumer Research Design

PROFILE OF SHAWNEE AREA RESIDENTS

Category I

Personal Characteristics and Behavior Patterns

Group A. Personal and Family Characteristics

Chart Number	Title	Question Number
1	Age	37
2	Education	39
3	Employment	33
4	Income	40
5	Length of Residence	35

Chart no.1

1 What is the age distribution of household members?

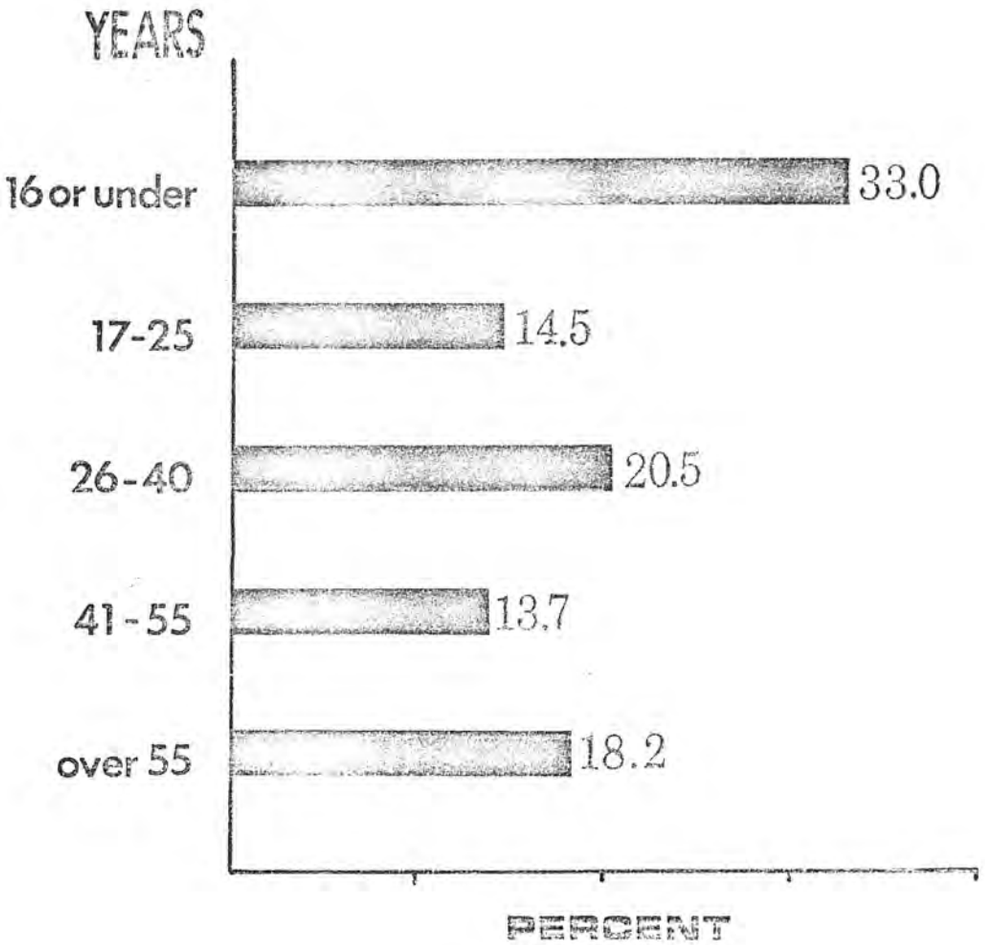


Chart no. 2

2 What is the highest educational level you have completed?

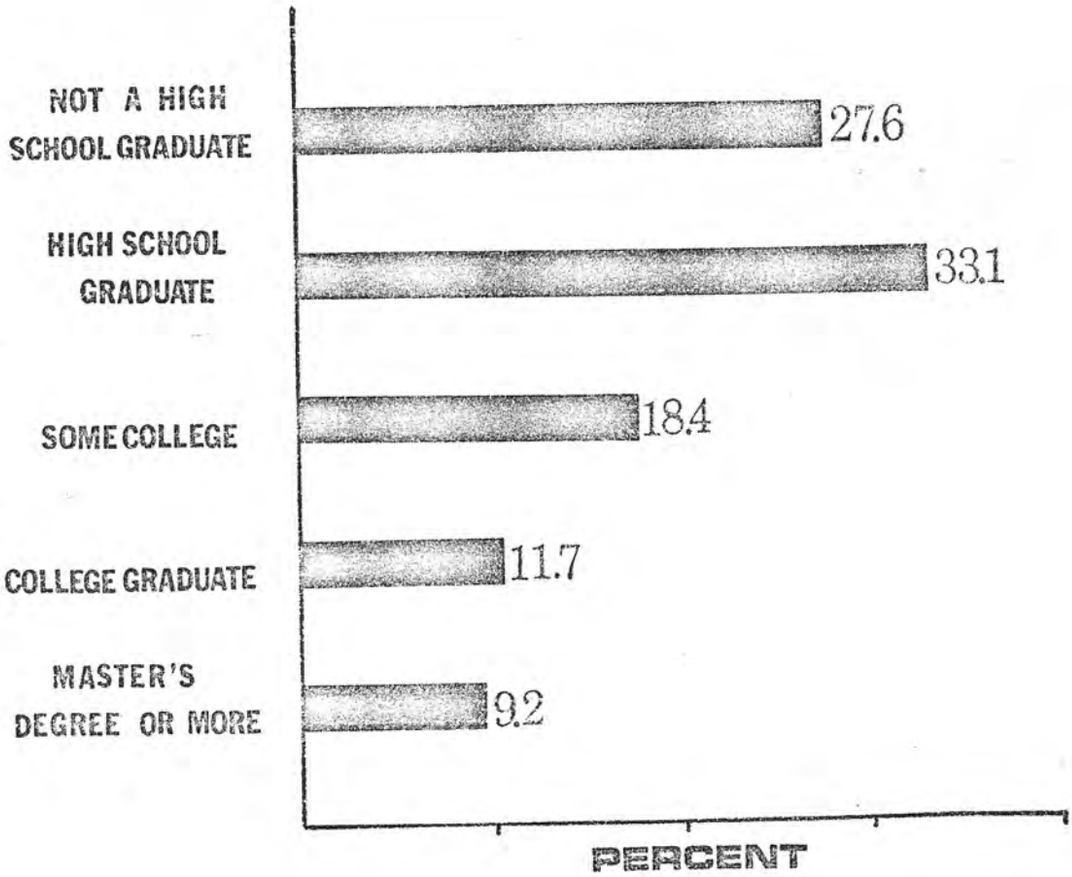


Chart no.3

3 What is your current job?

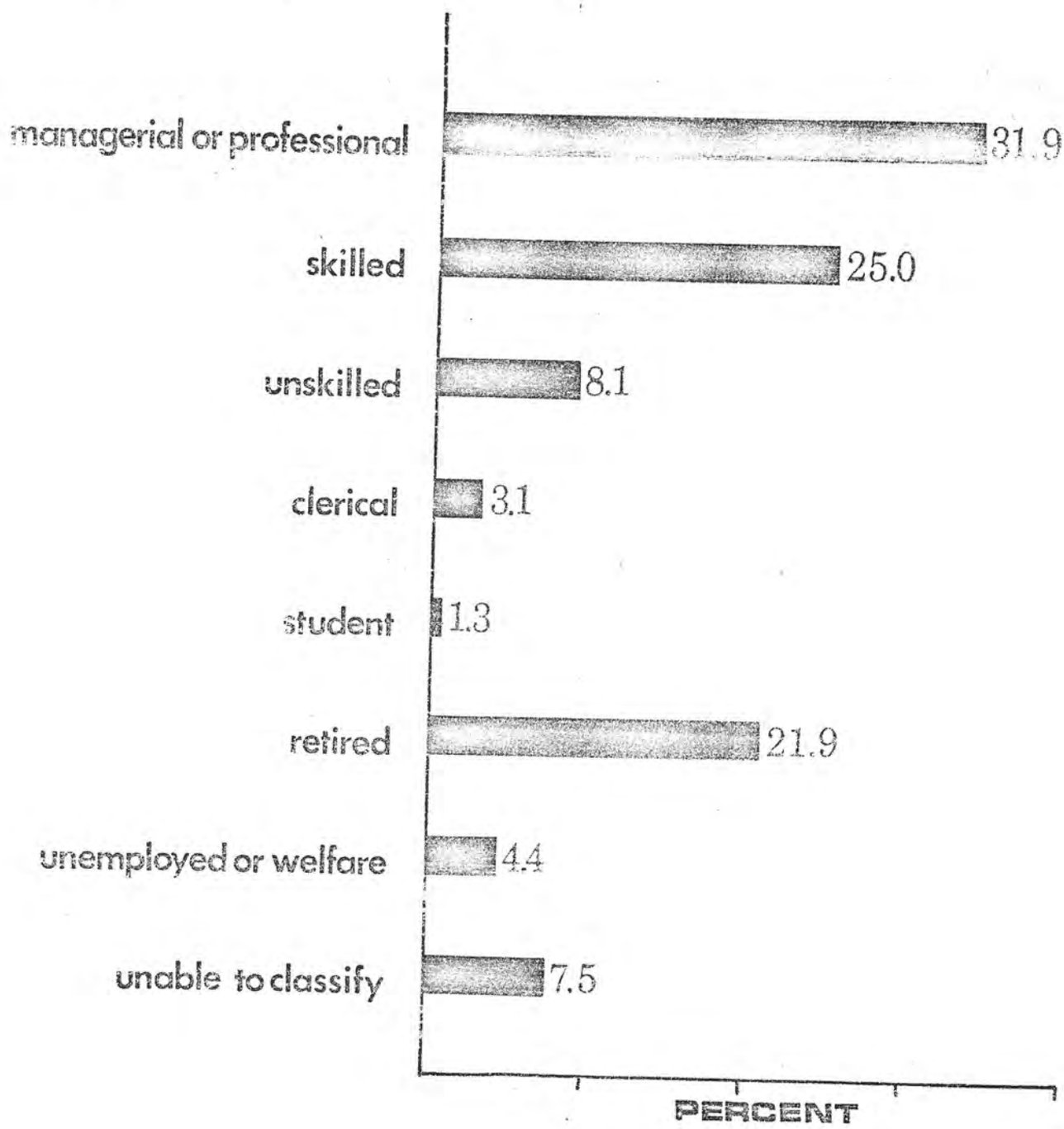


Chart no. 4

4 What is the the total, annual income of the household?

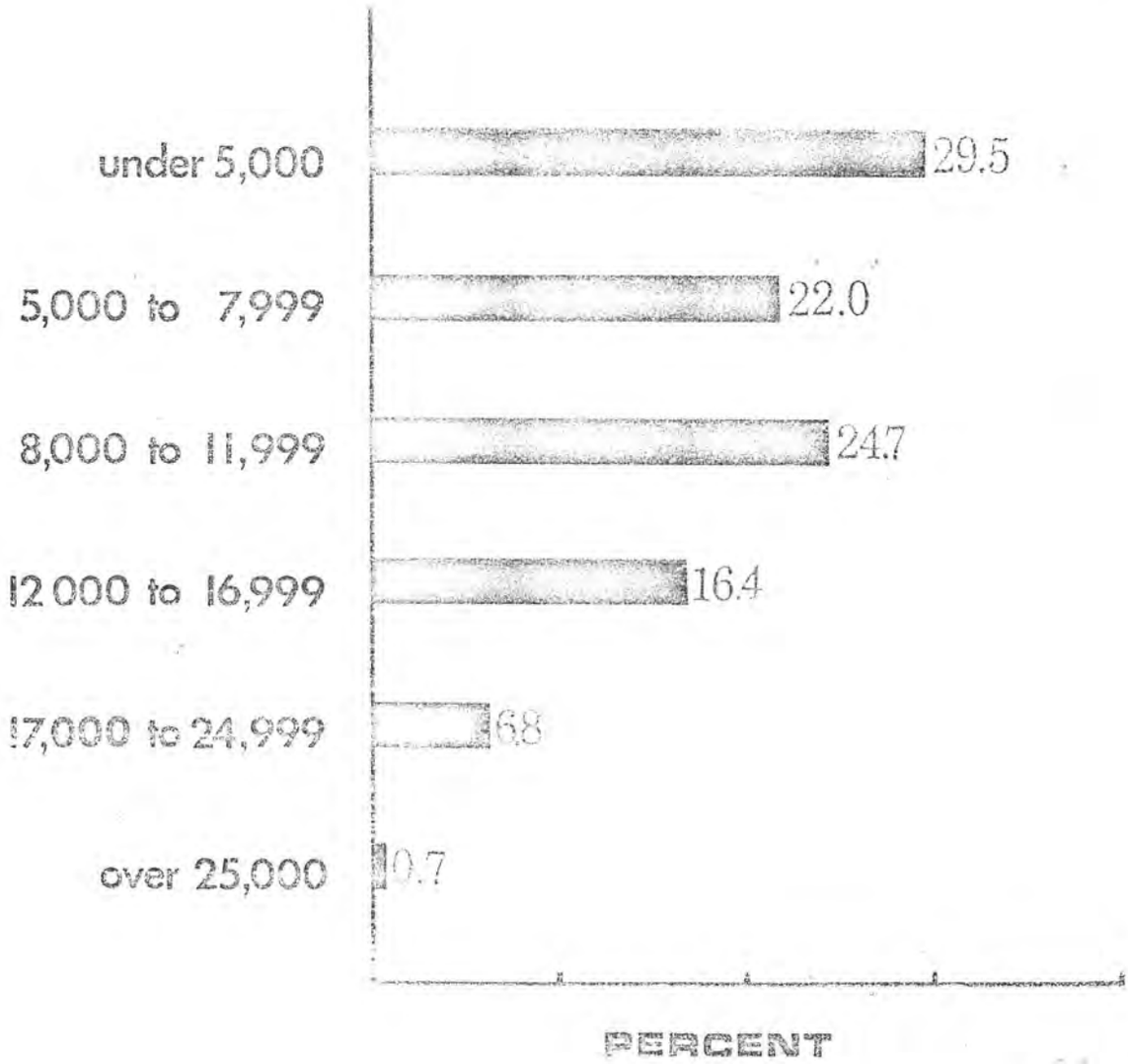
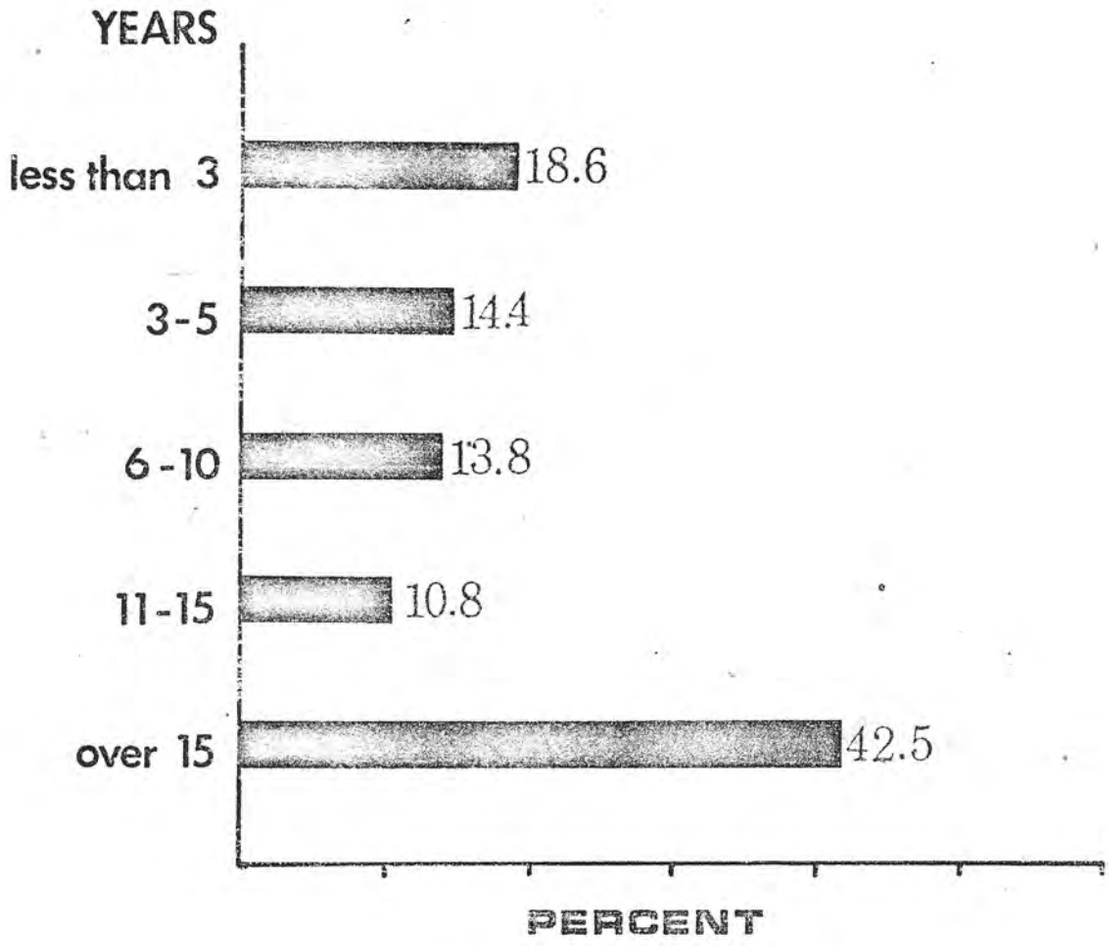


Chart no.5

5 How long have you lived in the Shawnee area?



Our sample is definitely weighted toward younger people, with some 47 per cent of respondents being under 25 years of age while almost a third are under 16.

Some 73 per cent of those questioned have attained at least a high school education, which correlates roughly with the figure of 56 per cent employed in managerial, professional and skilled occupations (21.9 per cent were retired).

Income level of the sample does not "fit" well with the educational and employment data, with almost a third earning less than $5,000 annually. Given the expense of automobile ownership and maintenance, this income group might be expected to welcome efficient, economical public transportation. On the other hand, almost 50 per cent of the sample earn between $5,000 and $12,000 annually.

Category I

Personal Characteristics and Behavior Patterns

Group B. Drivers and Vehicles

Chart Number	Title	Question Number
6	Licensed Drivers	34
7	Licensed Vehicles	36
8	Ages of Vehicles	36

Chart no.6

6 How many licensed drivers are members of your household ?

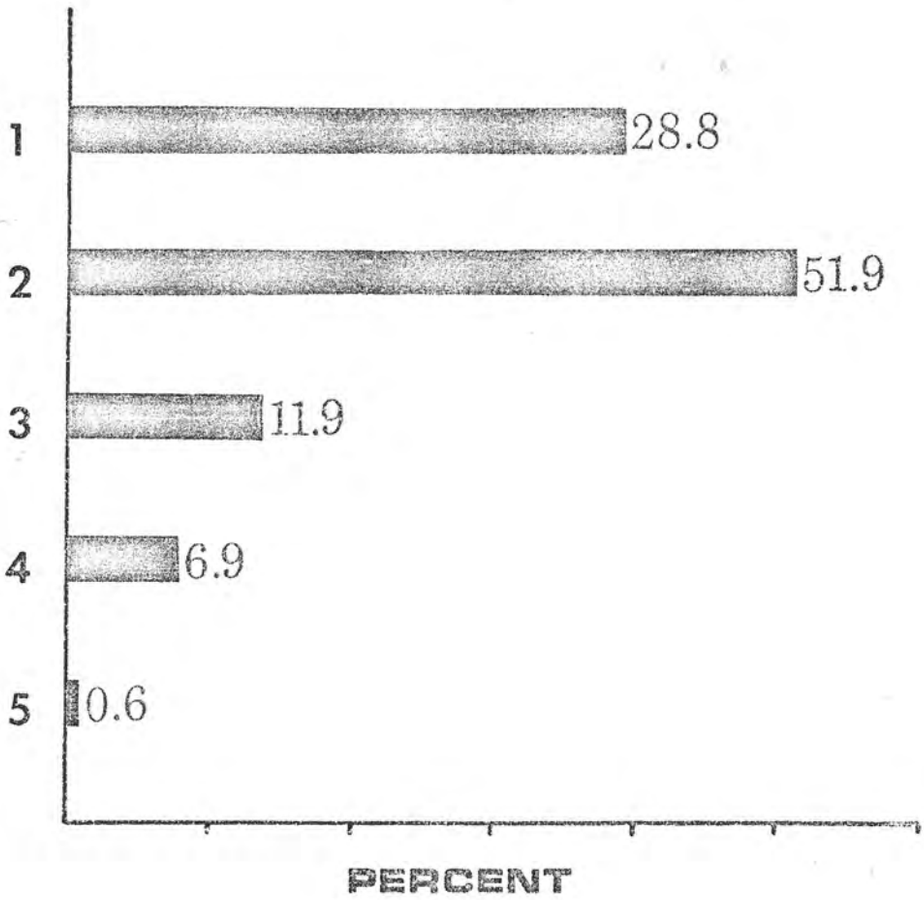
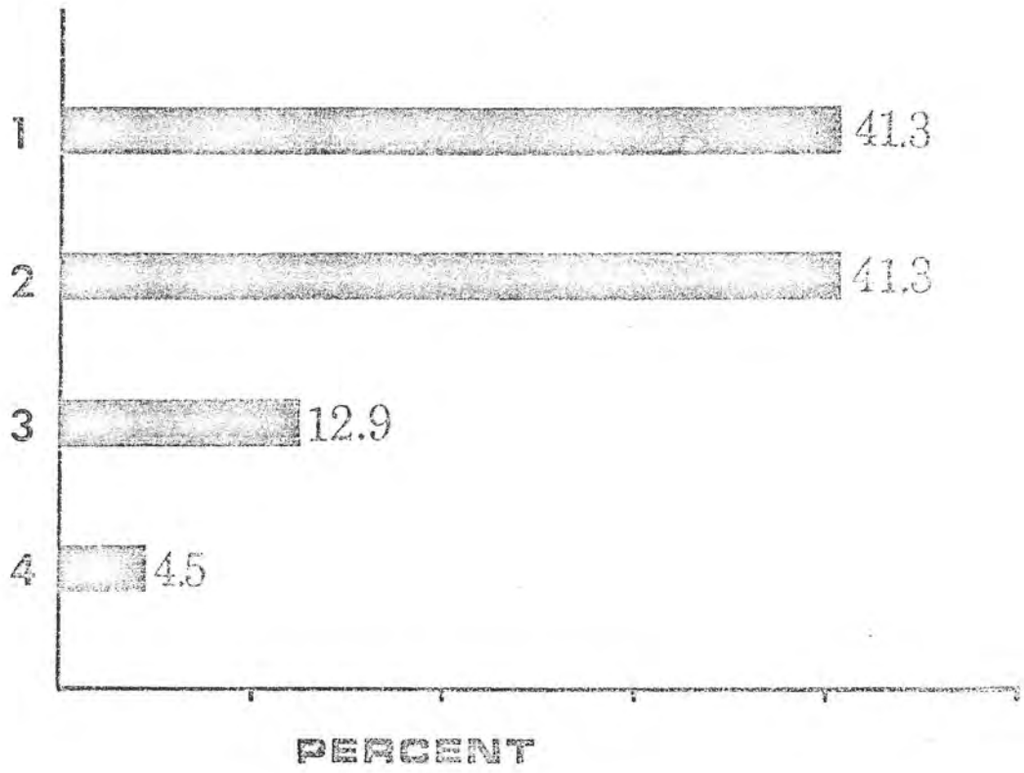


Chart no.7

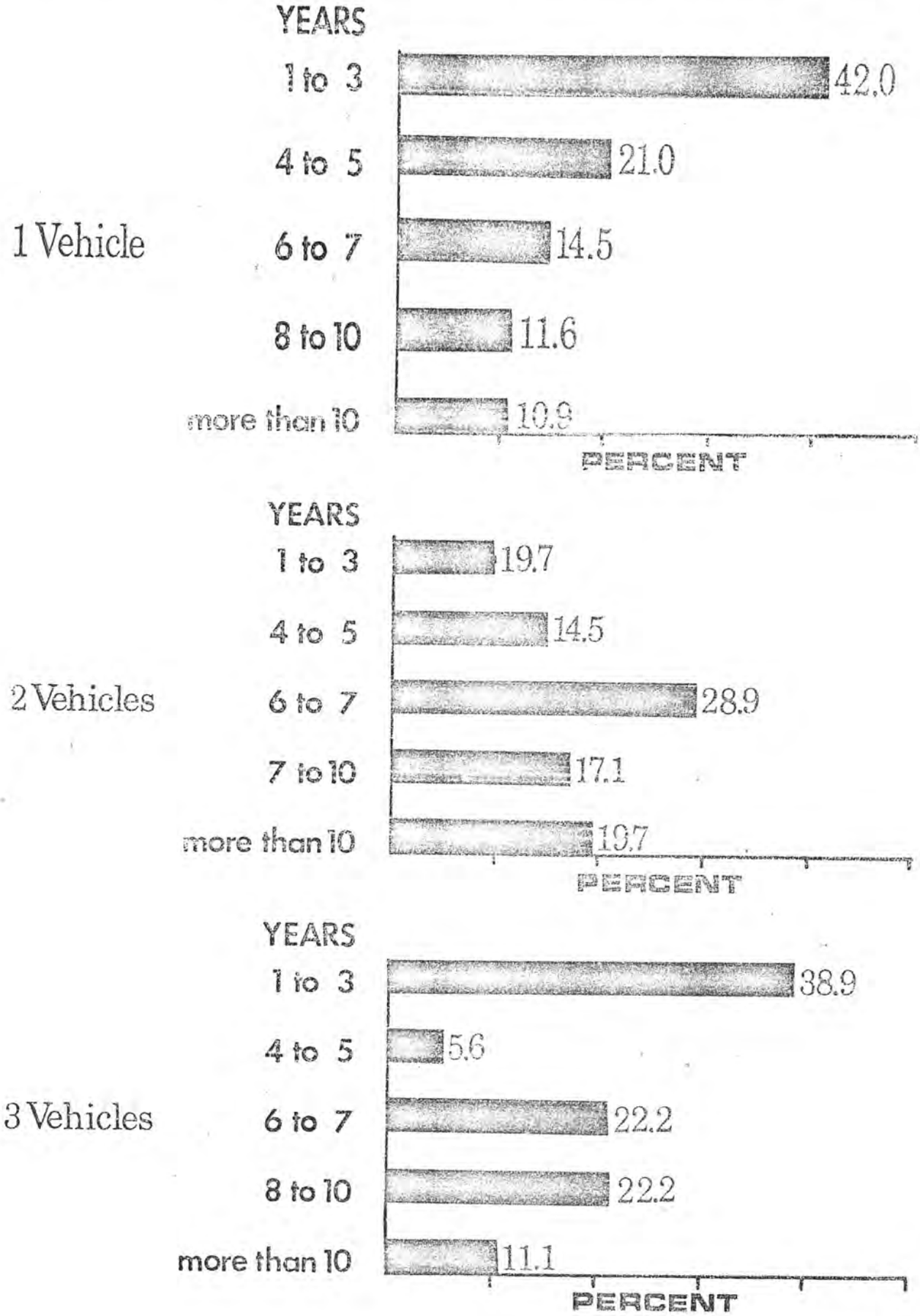
7 How many licensed vehicles (including cars, pick-up trucks, etc.) does your household have regular access to?



8

Chart no.8

What are the ages of the vehicles your family has regular access to?



Some 80 per cent of the households in our sample have either one or two licensed drivers, which we assume are adults for the most part, due to the high proportion of youth in the sample. The 28.8 per cent of the households where there is only one licensed driver available to transport other family members might provide some support for an improved public transportation system.

On the other hand, 80 per cent of our sample have regular access to at least one car, with 40 per cent owning two cars. Age of vehicles does not seem to be significant except that a high proportion of those families with more than one car tend to keep all their vehicles longer. We might expect that as repair needs mount, these families would be interested in alternative modes of transport.

PROFILE OF SHAWNEE AREA RESIDENTS

CATEGORY I

Personal Characteristics and Behavior Patterns

GROUP C. Transportation Experience and Travel Habits

Chart Number	Title	Question Number
9	Use of Public Transportation	31
10	Public Transport to Work	32
11	Shawnee Trips Per Week	2
12	Trips Per Week Outside Shawnee	3
13	Travel Time to Work/Shopping	4
14	Use of I-40 to Oklahoma City	7
15	Use of Car Pool	8

9

Chart no. 9

Have you ever used any of the following for travel?

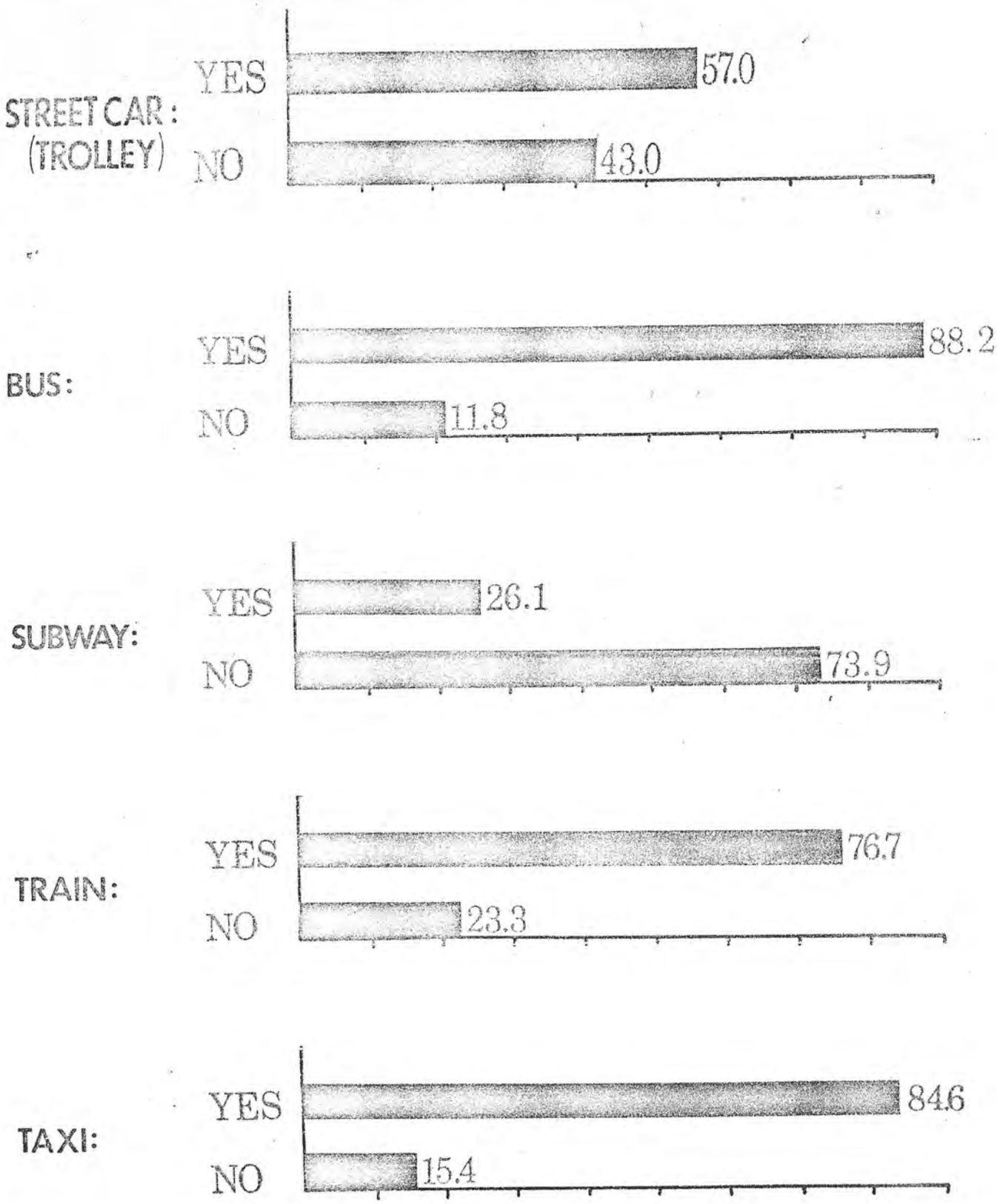


Chart no. 10

#10 While you have lived in Shawnee,
have you ever used bus, train or taxi, to go back and forth to work?

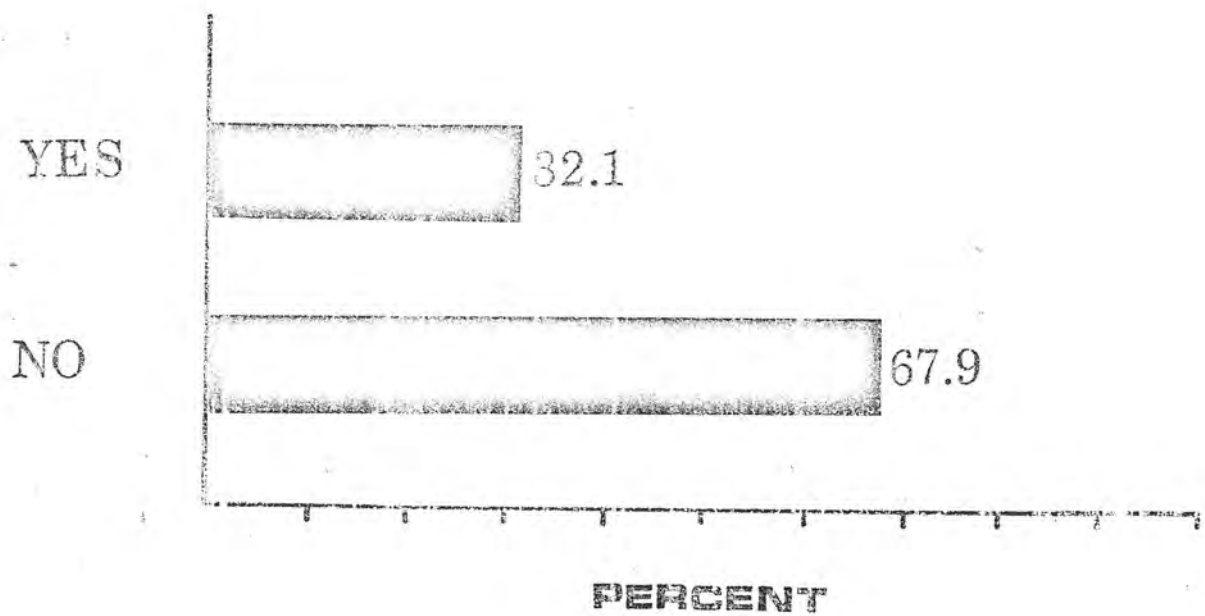
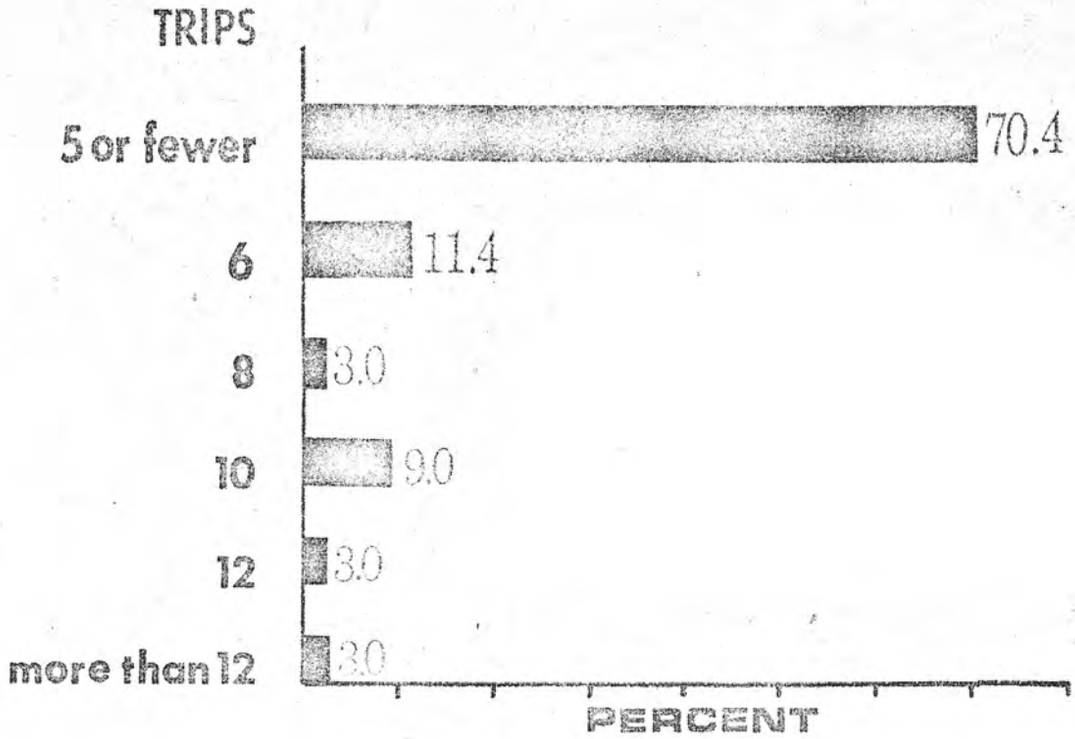
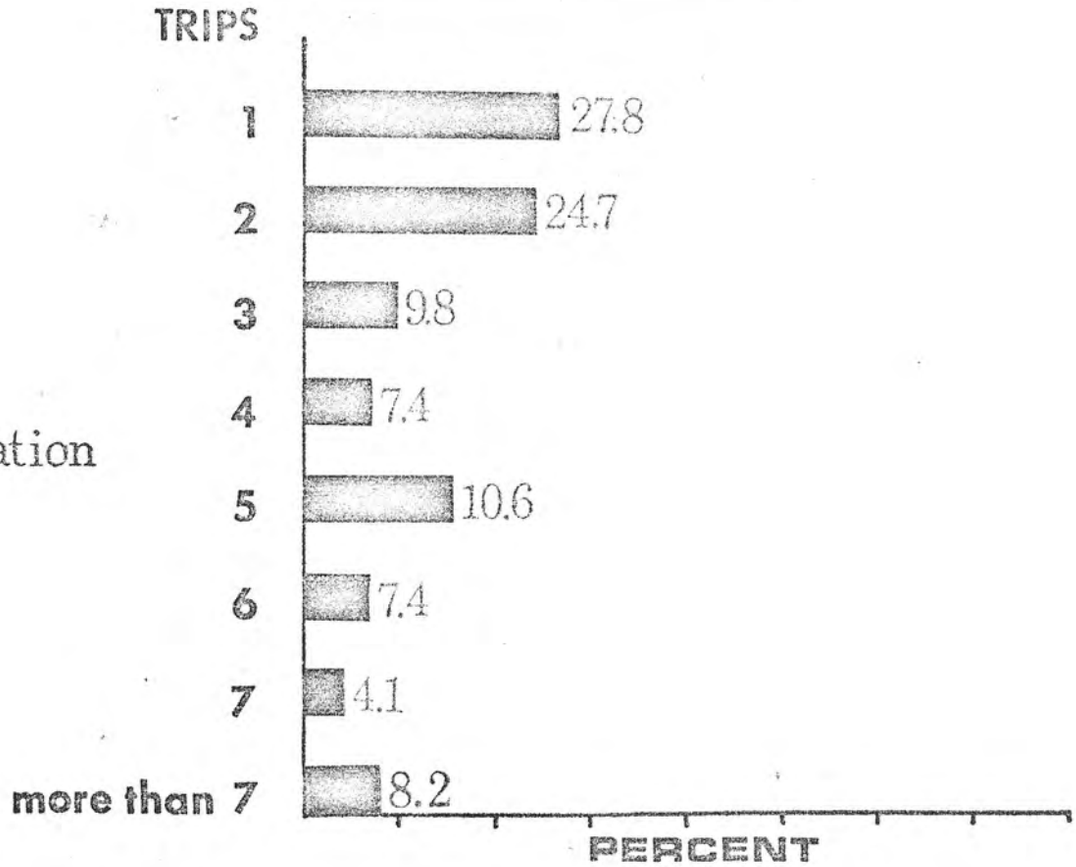


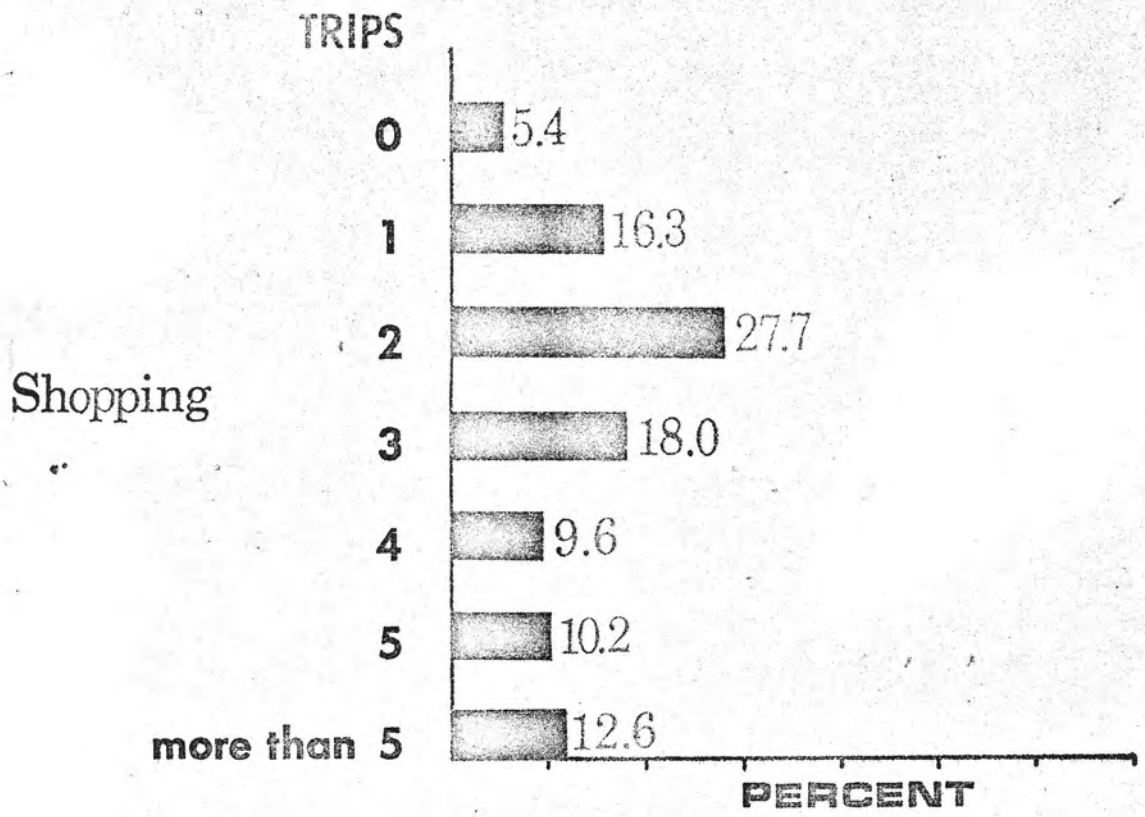
Chart no. 11 (1)

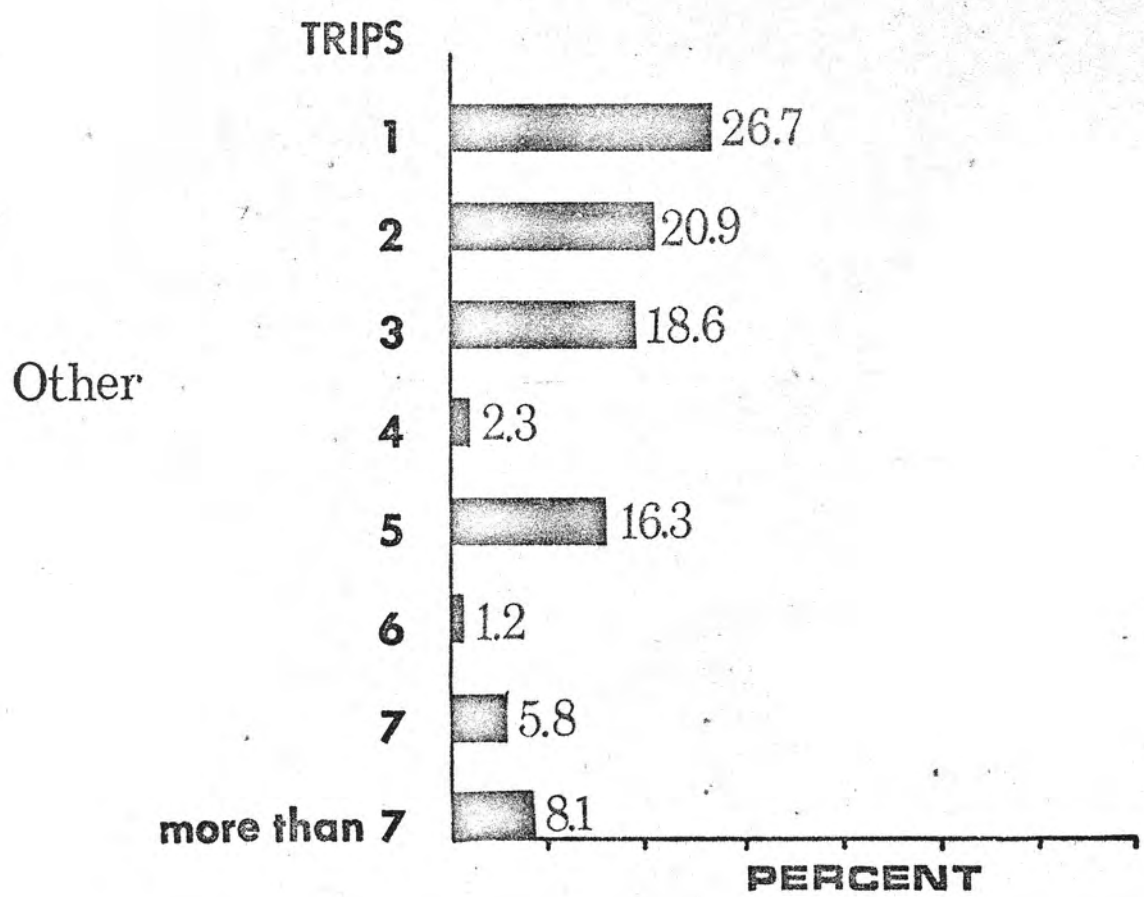
#11 How many trips do you make in an average week for:



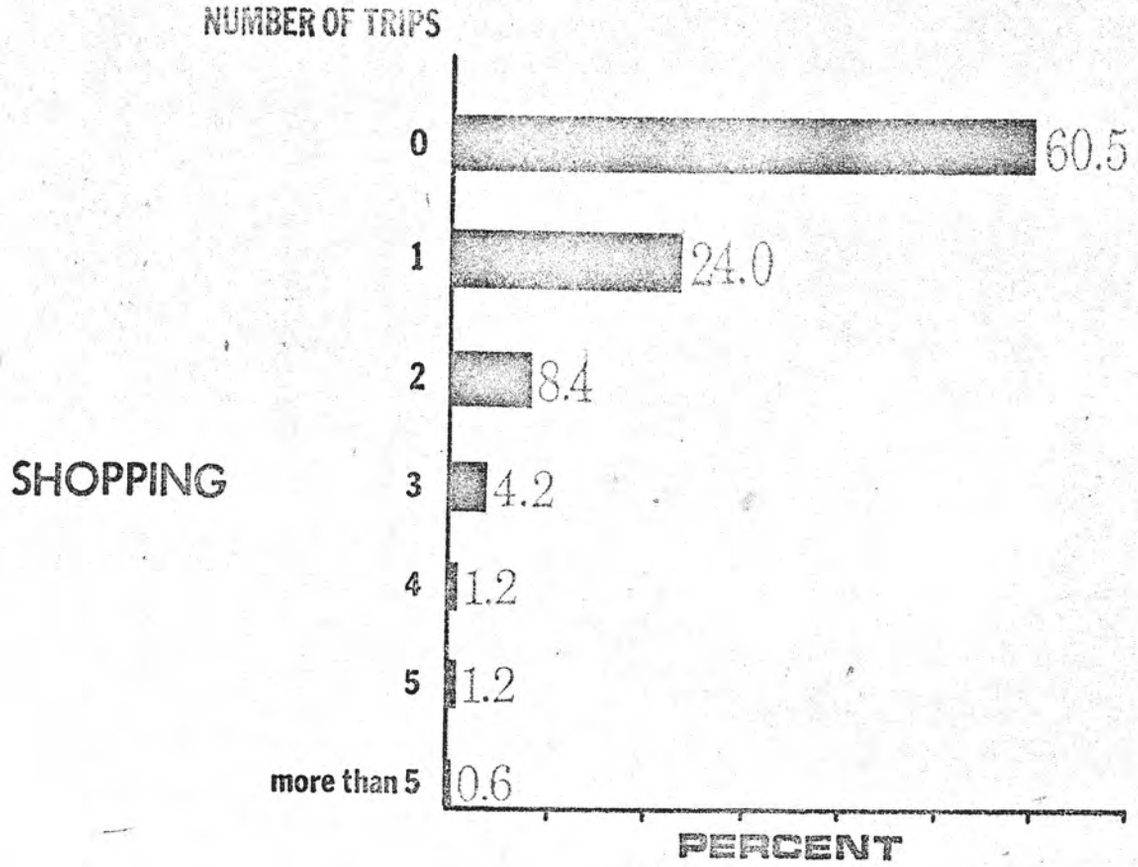


#11 How many trips do you make in an average week for:





#12 In an average week, how many trips do you make outside the Shawnee area for:



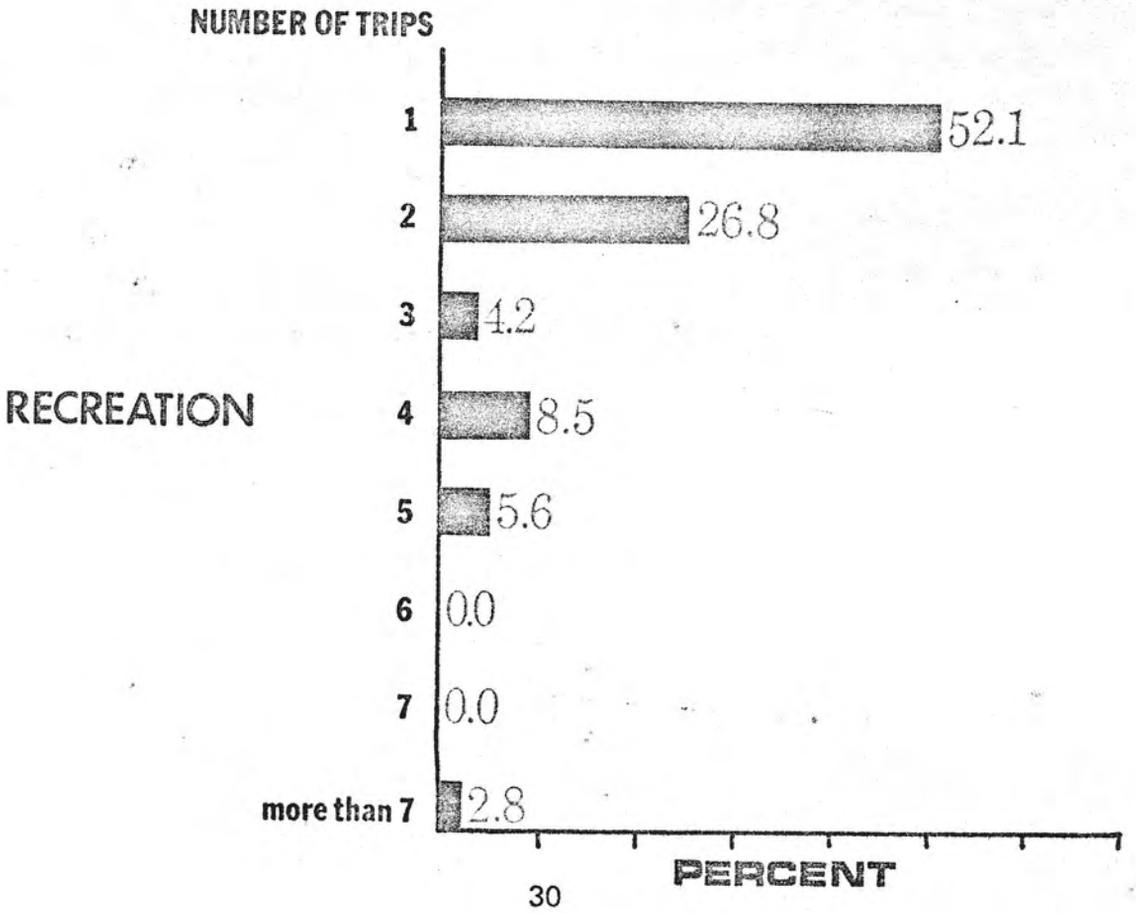
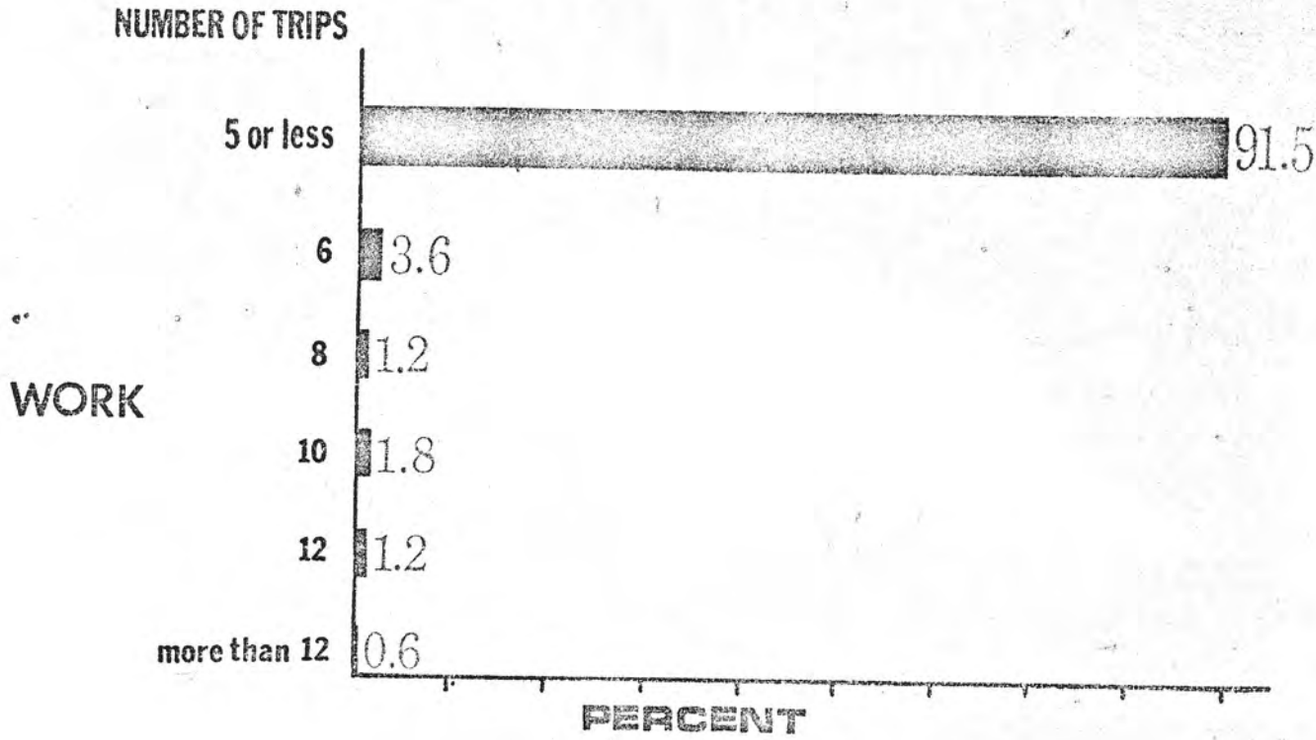


Chart no.12 (2)

#12 In an average week, how many trips do you make outside the Shawnee area for:



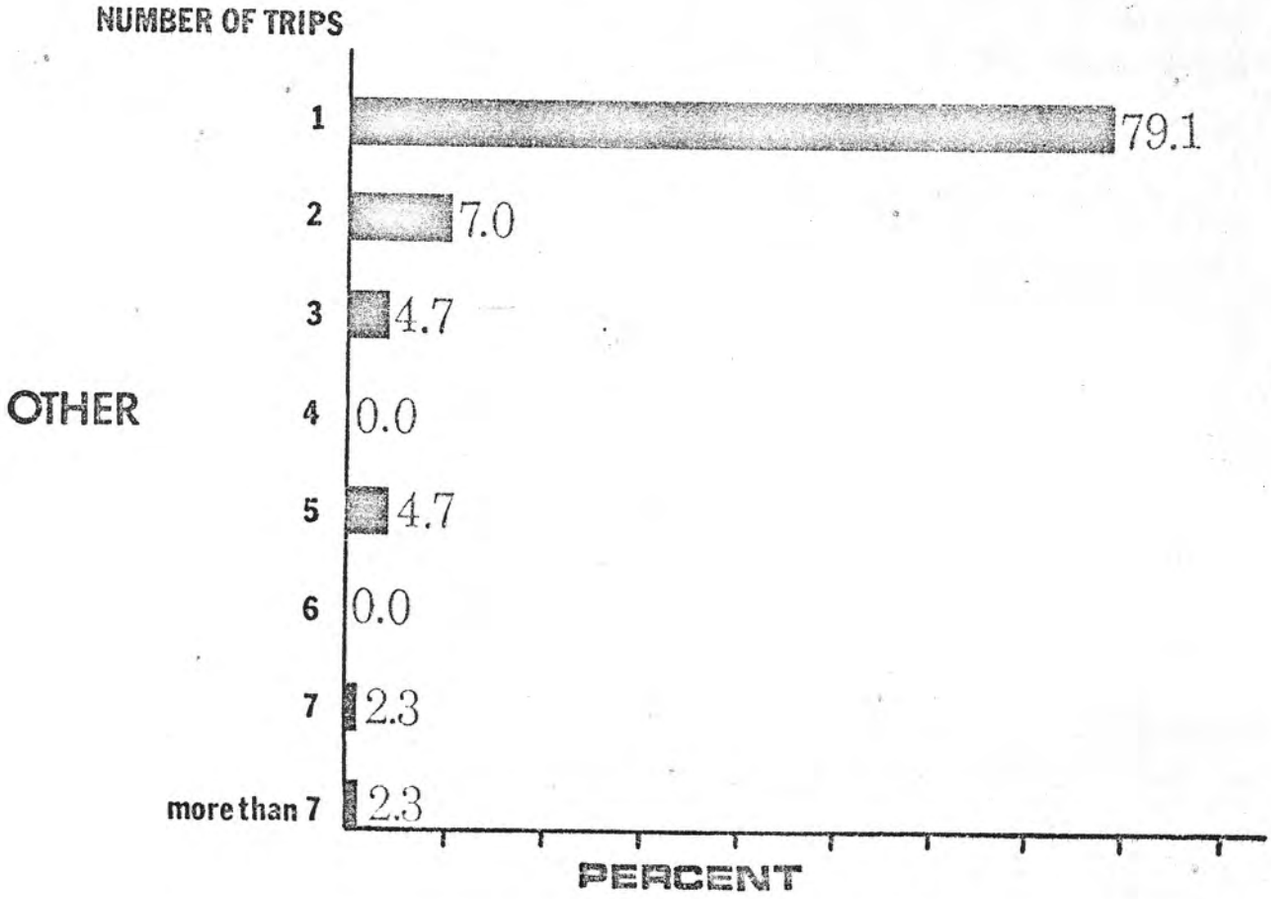
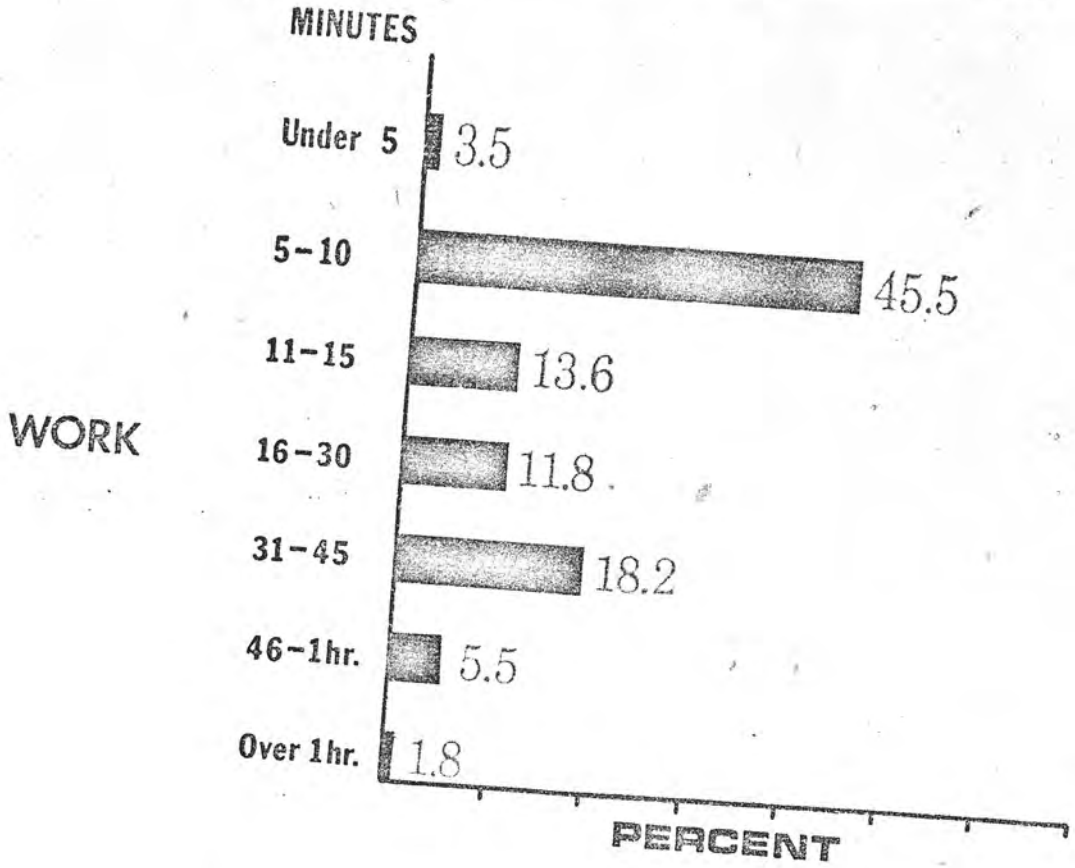


Chart no. 13

#13 How long does it normally take you to travel to:



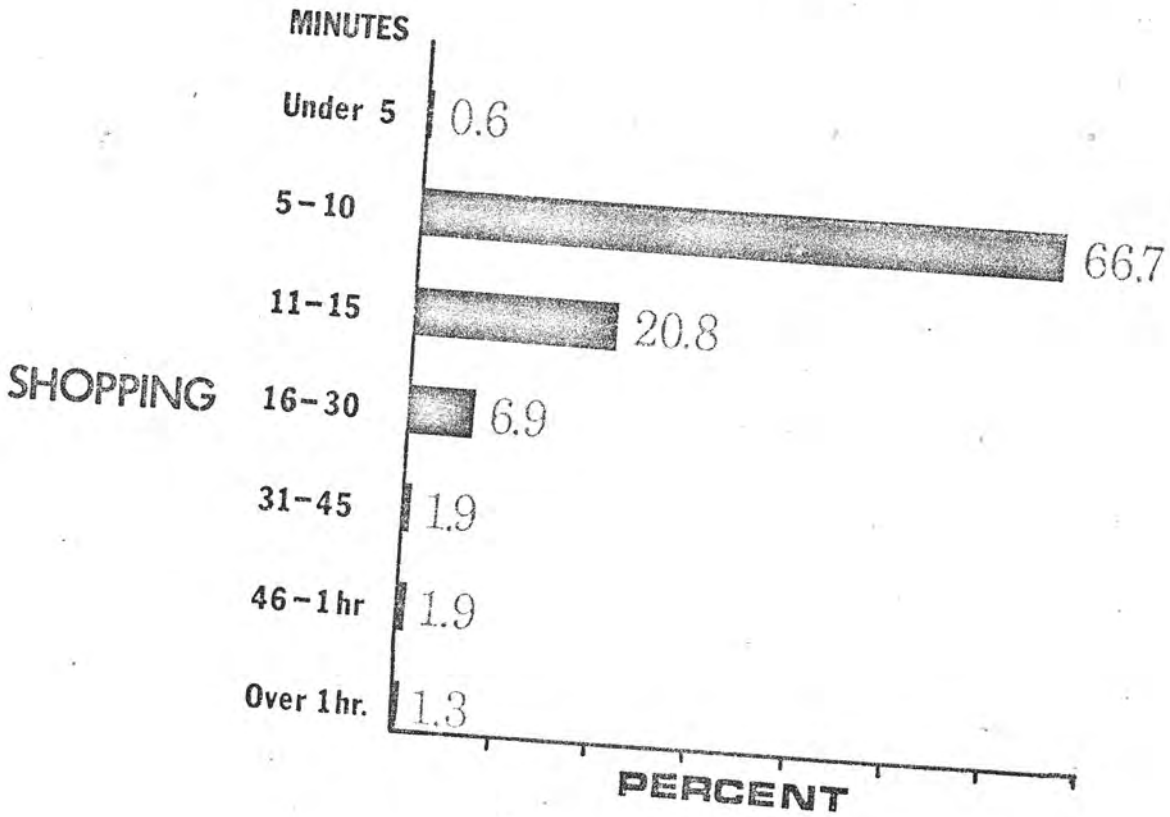
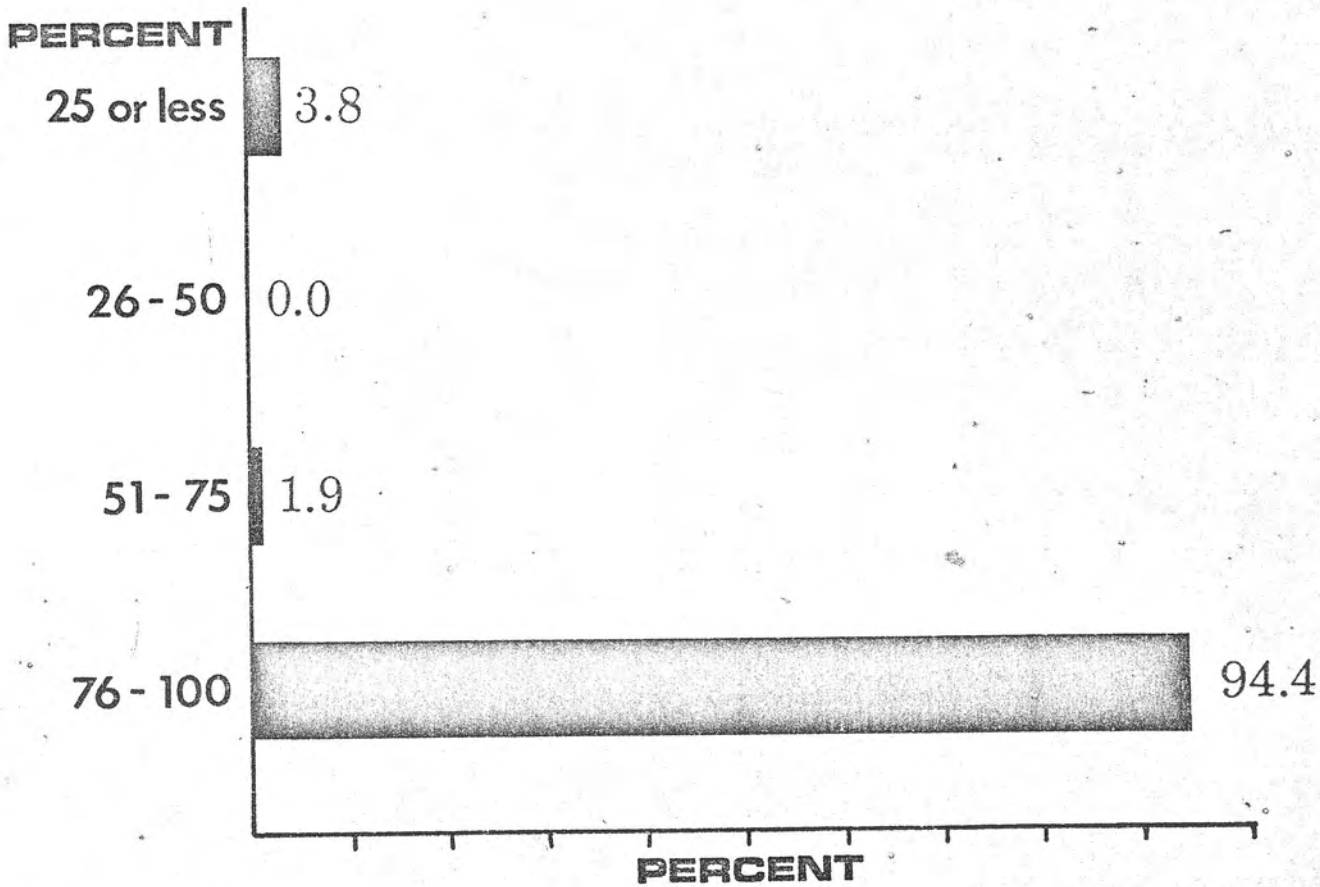


Chart no. 14

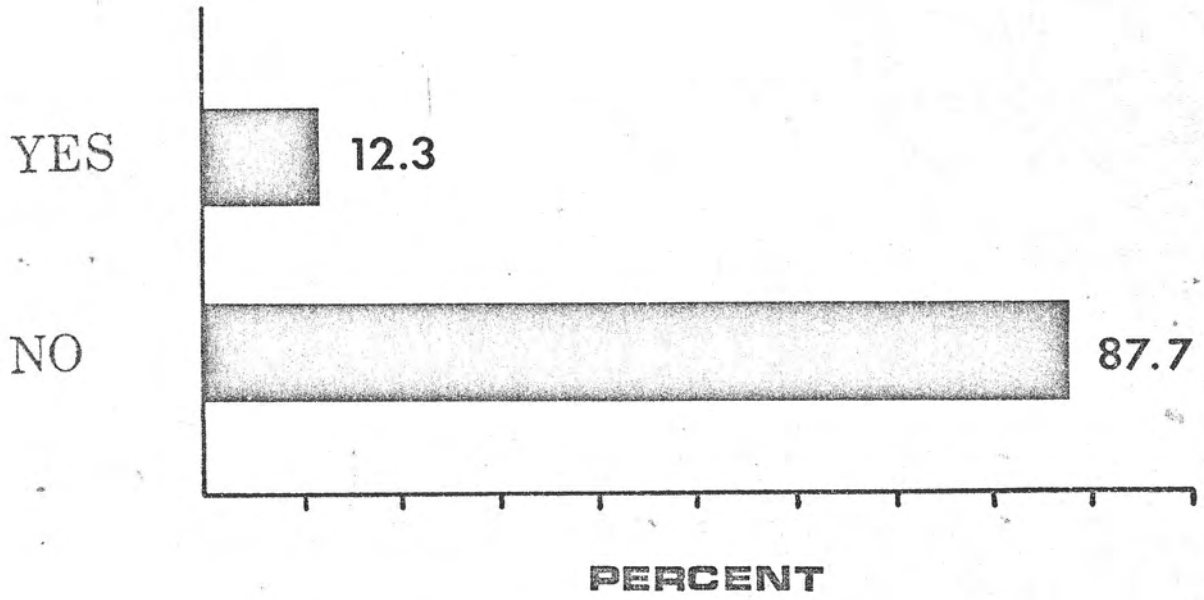
In your travels toward Oklahoma City, what percent of the time do you use Interstate 40?



#15

Chart no. 15

DO YOU BELONG TO A CAR POOL?



Our survey shows that a significant proportion of persons have never ridden in any conveyance other than a private automobile. As we might expect, experience with the most common forms of public transportation, i.e., taxicabs and buses, is more widespread in the sample than is experience with trolleys, trains and subways. In large measure, the geographical location of the sample accounts for a lack of experience with more exotic forms of transport; however, the fact that the sample is biased toward youth may also be relevant here. We would not expect younger persons to have had any great amount of association with rail transportation unless they have lived elsewhere in the United States.

In line with our earlier data, only a third of the respondents have ever used any form of public transportation to go to or from work. Most respondents work in the Shawnee area and also do their shopping there. Perhaps 25 per cent of the respondents shop outside the Shawnee area, and fully 75 per cent travel outside the area for recreational purposes.

As we might expect, most of the sample reported driving time of from 5 to 15 minutes to go to work or shopping areas, making it doubtful that public transportation could significantly alter their travel time. Of those persons who travel to Oklahoma City, fully 94 per cent of our sample use Interstate-40 over 75 per cent of the time. Finally, only 12 per cent of those interviewed belong to a car pool.

PROFILE OF SHAWNEE AREA RESIDENTS

Category II
Consumer Attitudes

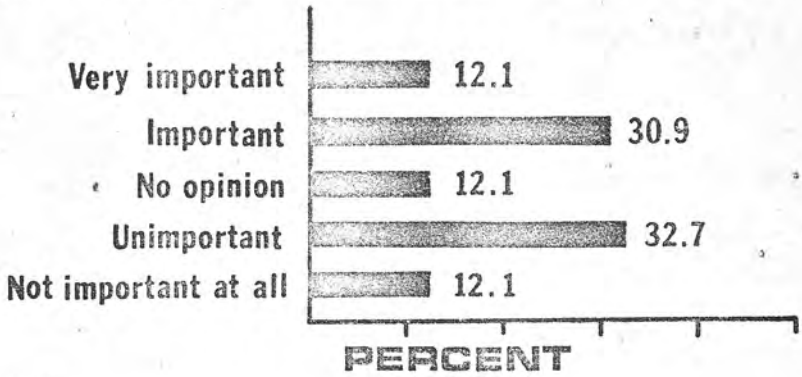
Group A. Flexibility, Comfort and Convenience

Chart Number	Title	Question Number
	Flexibility	
16	Need for Other Transportation	9
17	Importance of Unplanned Stops	11
18	Importance of Availability of Car	14
	Comfort	
19	Importance of Air Conditioning	12
20	Most Comfortable Vehicle	20
21	Importance of Reading on the Road	23
	Convenience	
22	Importance of Unplanned Stops	13
23	Importance of Unscheduled Stops	15
24	Freedom to Come and Go	29
25	Importance of Convenient Parking	17
26	Is Parking Convenient	27

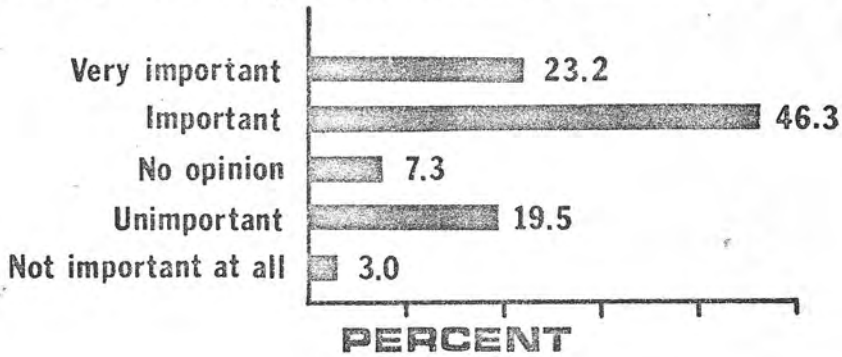
Chart nos. 16, 17 & 18

FLEXIBILITY

#16 How important is it to you that there be other ways to get around the Shawnee - Oklahoma City area ?



#17 How important is it to you that you are able to make an unplanned stop during a trip ?



#18 How important is it to you that you are able to use your car during the work day?

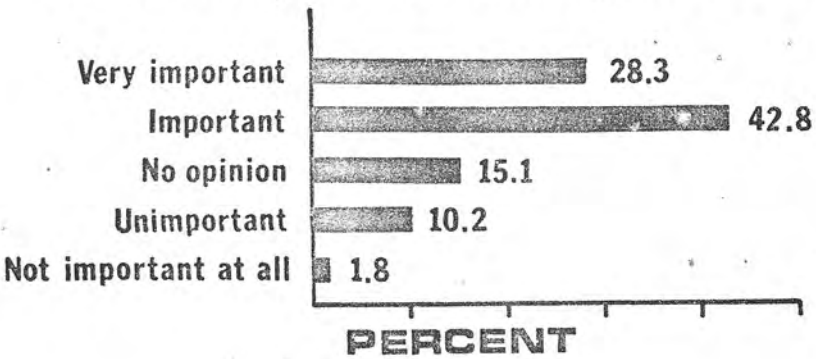
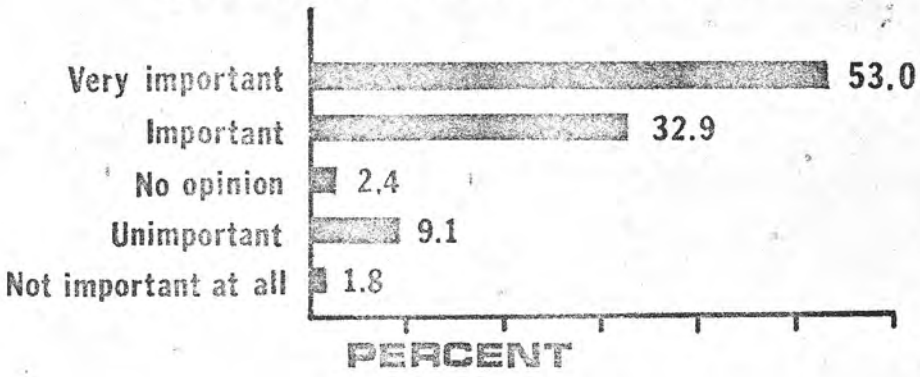


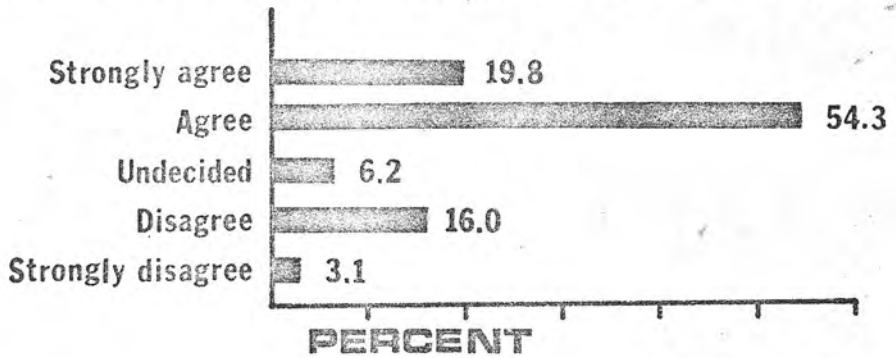
Chart nos. 19, 20 & 21

COMFORT

#19 How important is it to you that your car is air-conditioned?



#20 How strongly do you agree that the automobile is the most comfortable means of transportation ?



#21 How strongly do you agree that you would like to read the morning paper on the way to work ?

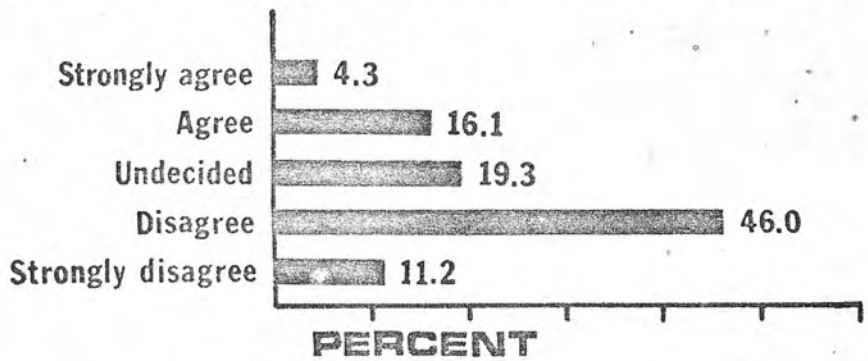
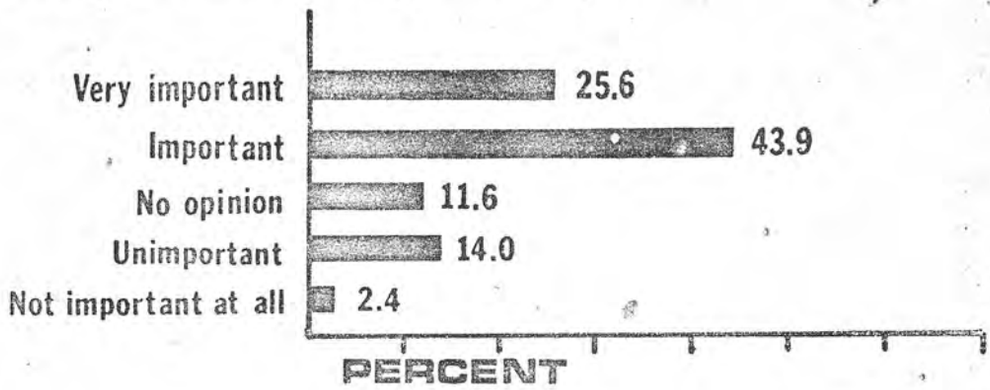


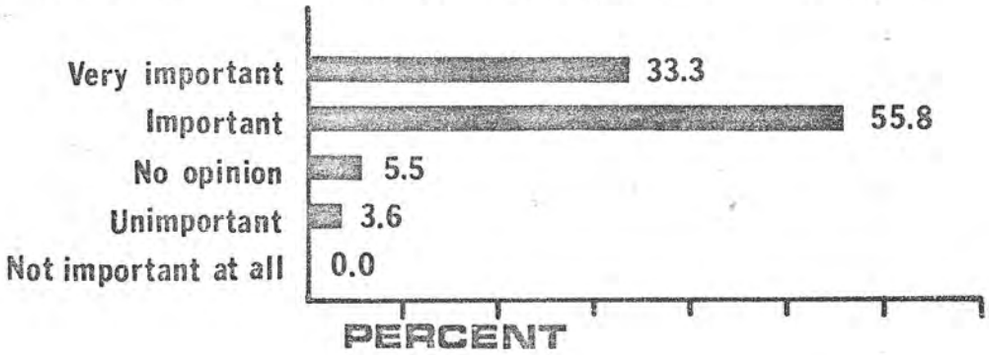
Chart nos. 22, 23 & 24

CONVENIENCE

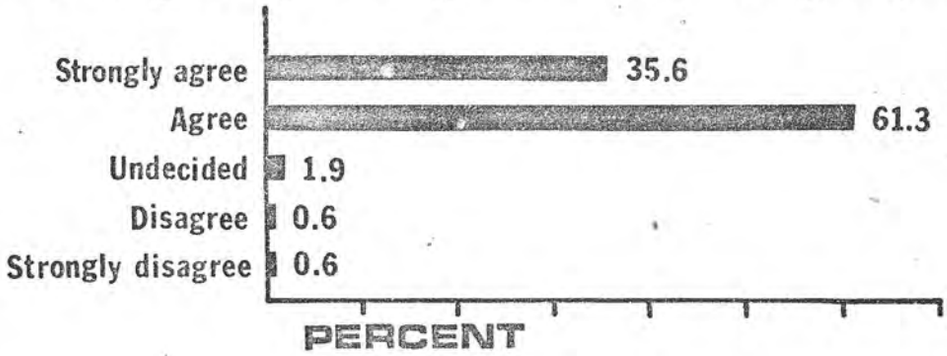
#22 How important is it to you that you are able to stop anywhere you like during the trip to and from work?



#23 How important is it to you that you are able to start a trip when you are ready?

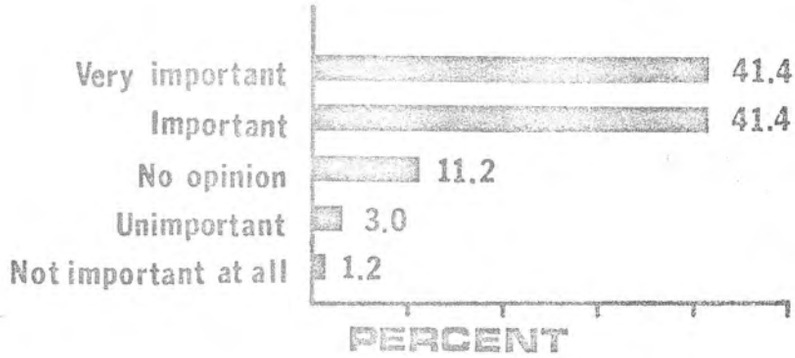


#24 How strongly do you agree that you like the freedom the automobile gives you to go and come as you please?

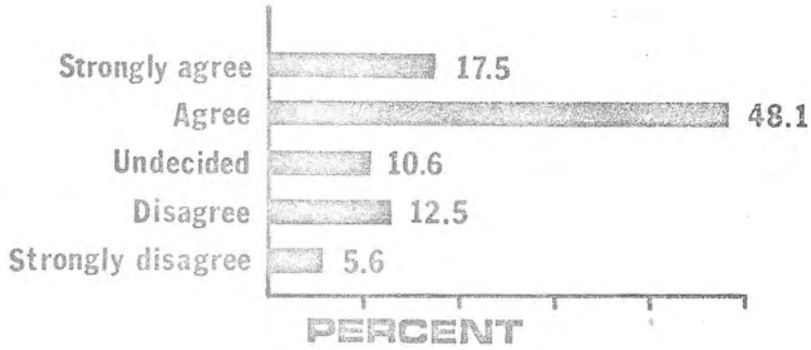


CONVENIENCE

#25 How important is it to you that you can park conveniently to where you work?



#26 How strongly do you agree that it is easy to find a place to park that's convenient to where you work?



Our survey overwhelmingly demonstrates the perceived advantages of flexibility, comfort and convenience associated with travel by private automobiles. Less than half of the responses indicate any concern whatsoever that there by any alternative means of public transportation in the Shawnee-Oklahoma City area. Instead, 70 per cent feel it is very important to be able to make unplanned stops during trips or use their car during the work day.

Over 70 per cent of the sample also feel the automobile is the most comfortable way to travel and associate air conditioning with this feeling. Over half place very little importance on being able to read while commuting to work.

Seventy-five per cent of respondees rate the freedom associated with the private automobile as important: they feel a need to come and go as they please, to start or end a trip at any time and to stop during the trip to and from work.

While some 80 per cent agree it is important to be able to park near their work, we found that, somewhat surprisingly, 65 per cent can now find parking adjacent to their place of employment.

Category II

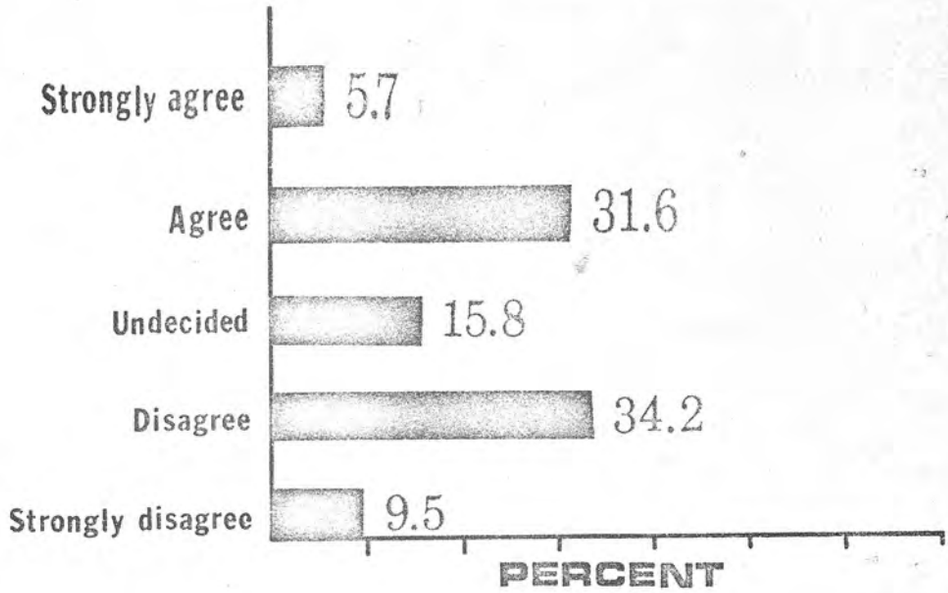
Consumer Attitudes

Group B. Time, Expense and Safety

Chart Number	Title	Question Number
	Time	
27	Would another 15 minutes bother you?	18
28	Is auto quickest?	28
	Expense	
29	Do cars cost much to operate?	19
30	Will cost make you look for another means of transportation?	21
	Safety	
31	Are auto accidents important?	10
32	Is public transportation safer?	24

TIME

#27 How strongly do you agree that an additional 15 minutes to get to work, "Wouldn't bother me?"



#28 How strongly do you agree that the automobile is the quickest way to get around the Shawnee-Oklahoma City area?

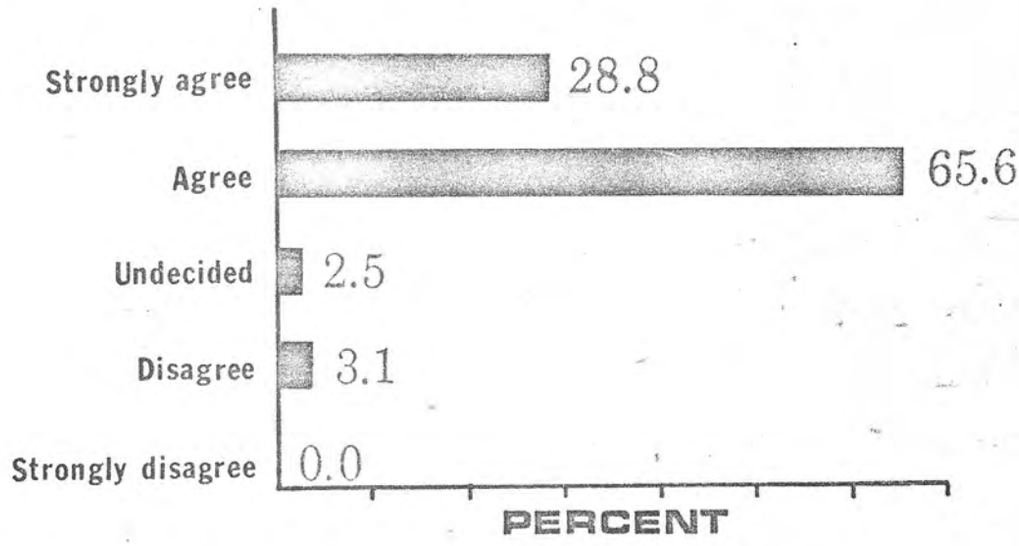
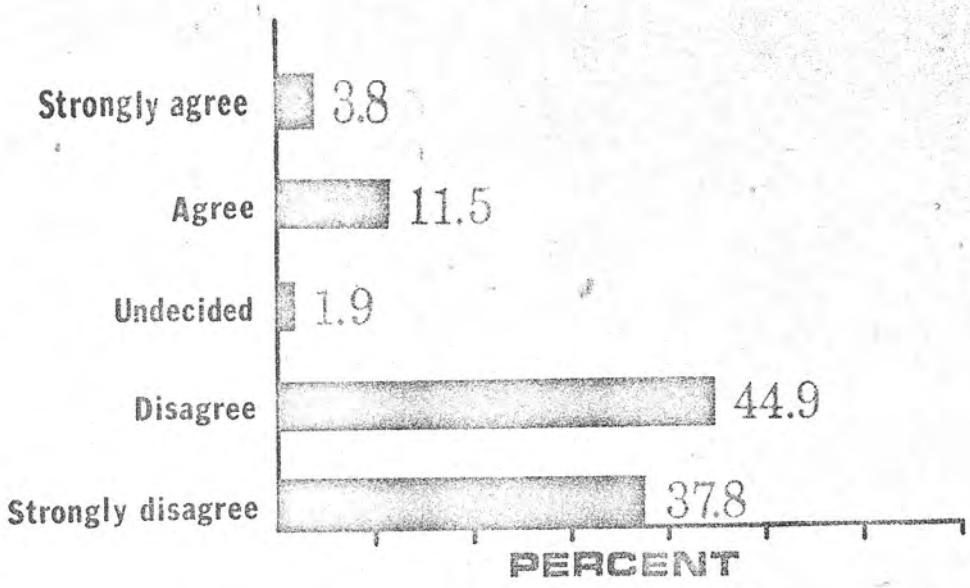


Chart nos. 29 & 30

EXPENSE

#29 How strongly do you agree that an automobile doesn't cost very much to operate?



#30 How strongly do you agree that the cost of operating an automobile makes you look for another way to travel ?

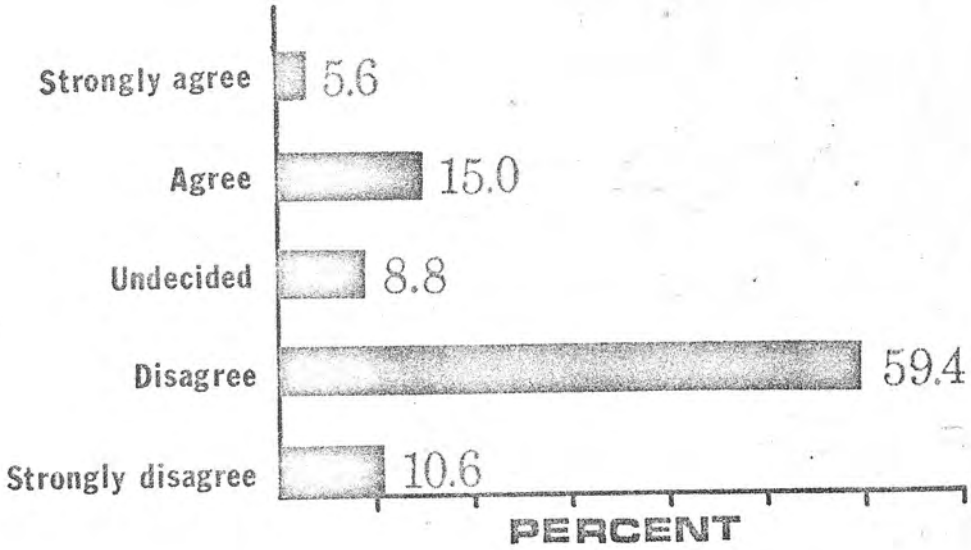
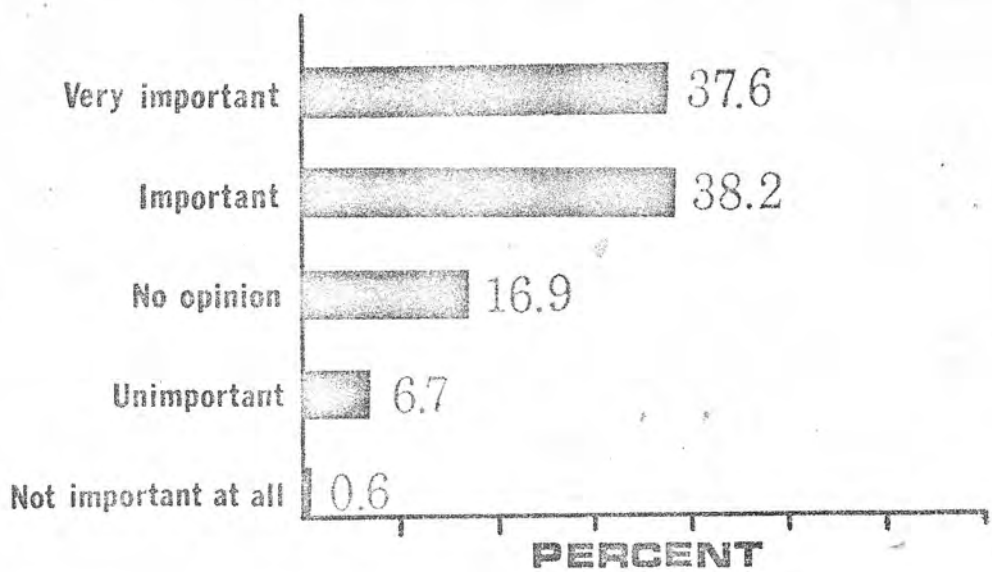


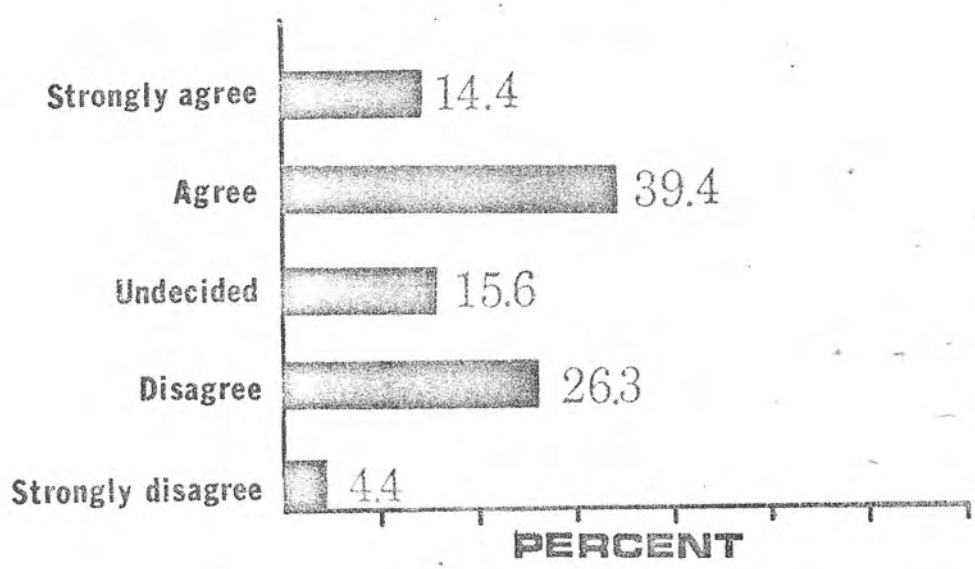
Chart nos. 31 & 32

SAFETY

#31 How important is it to you that there is a possibility of an auto accident?



#32 How strongly do you agree that public transportation is safer than driving your own car?



While some 44 per cent of respondents would not be bothered by an additional 15 minutes to get to work, 35 per cent would be disturbed, and some 90 per cent of all respondents agree the car is the quickest way, at present, to get around the Shawnee-Oklahoma City area. This means that any competing form of public transportation would have to be at least equal to the speed of the automobile.

Strangely, although roughly 83 per cent say that an automobile costs a great deal to operate, only 20 per cent would look for an alternate means of transport to alleviate this expense. Apparently, the automobile is seen as having other benefits which counter its high cost of operation.

While 75 per cent of our sample see the possibility of an auto accident as an important consideration in traveling, only 53 per cent believe that public transportation is any safer.