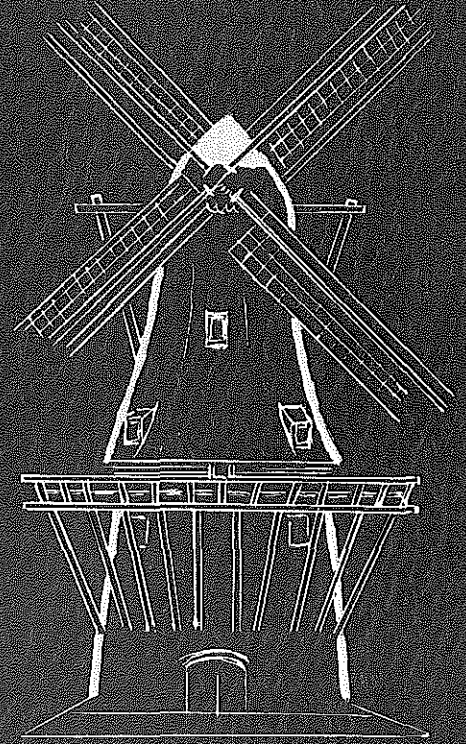


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H642
1967

HOLLAND - ZEELAND

AREA TRANSPORTATION STUDY



ORIGIN-DESTINATION STUDY

SOCIOECONOMIC
DATA CROSS TABULATIONS

1967

STATE OF MICHIGAN

DEPARTMENT OF STATE HIGHWAYS

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DEPARTMENT OF STATE HIGHWAYS

STATE HIGHWAYS BUILDING - POST OFFICE DRAWER K - LANSING, MICHIGAN 48904

HENRIK E. STAFSETH, Director

October 7, 1970

Mr. Sam F. Cryderman
Engineer of Transportation Planning
Transportation Planning Division
Michigan Department of State Highways
Lansing, Michigan 48904

Dear Mr. Cryderman:

We are presenting the Socioeconomic Data
Cross-Tabulations for the 1967 Holland-
Zeeland Area Transportation Study.

This report was prepared by Transportation
Survey and Analysis Section. Transportation
Analyst is Ruby Dell Brenner, her Supervisor
is Mr. Leo Farman.

Respectfully presented,

Keith E. Bushnell, Engineer
Transportation Survey &
Analysis

HOLLAND - ZEELAND
TRANSPORTATION STUDY

GRAPHS AND CROSS-TABULATIONS
of
SURVEY DATA

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SEPTEMBER, 1970

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INTRODUCTION

By the use of graphs an attempt has been made to present interesting comparisons in different categories. Not all of these apply to trips but are felt to be of interest.

These graphs are based on sample data only. A 25% sample for trucks and a 12-1/2% sample for internal trips was taken. Most of the graphs show percentage rates as they represent an area picture.

The cross-tabulations select records from one field and this information is summarized with information from a second field.

The following is an example:

	No. in Vehicle Vs. Trip Purpose					
<u>TRIP PURPOSE</u>	<u>VEHICLE OCCUPANCY</u>					<u>TOTAL</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
Work	10305.00	2175.00	563.00	295.00	113.00	13451.00
Personal Bus.	1237.00	783.00	337.00	169.00	83.00	2609.00
Shopping	687.00	809.00	389.00	275.00	164.00	2324.00
Vacation	340.00	1140.00	527.00	635.00	361.00	3003.00
Social-Rec.	2608.00	3526.00	1449.00	1226.00	597.00	9406.00
Other	11.00	8.00	2.00	2.00	2.00	25.00
Total	15188.00	8441.00	3267.00	2602.00	1320.00	30818.00

This table shows that the highest volume by trip purpose is work and the next highest is social-recreation. The tabulation represents the trip purpose of drivers only. It also indicates that in the sample for work purpose there were 10,305 cars with 1 person, 2,175 cars with 2 people, 563 cars with 3 people, 295 cars with 4 people, and 113 cars with 5 people. There was a total of 13,451 cars with drivers going to work and a total of 30,818 total driver trips for all purposes.

Cross-tabulations can only be made between two fields on the same type of O-D record. There are four record types, namely: OD-1 Interview Address Summary = I.A.S., OD-2 Internal Trip, OD-3 External Trips and OD-4 Truck-Taxi Records.

Each cross tab is made up of either two or four tables. They consist of 1) absolute sample numbers, 2) percent of grand total, 3) percent of line total and, 4) percent of column total.

A brief explanation precedes each tabulation. There is not necessarily a cause and effect relationship between the two fields selected for tabulation although in some instances there may be a relationship.

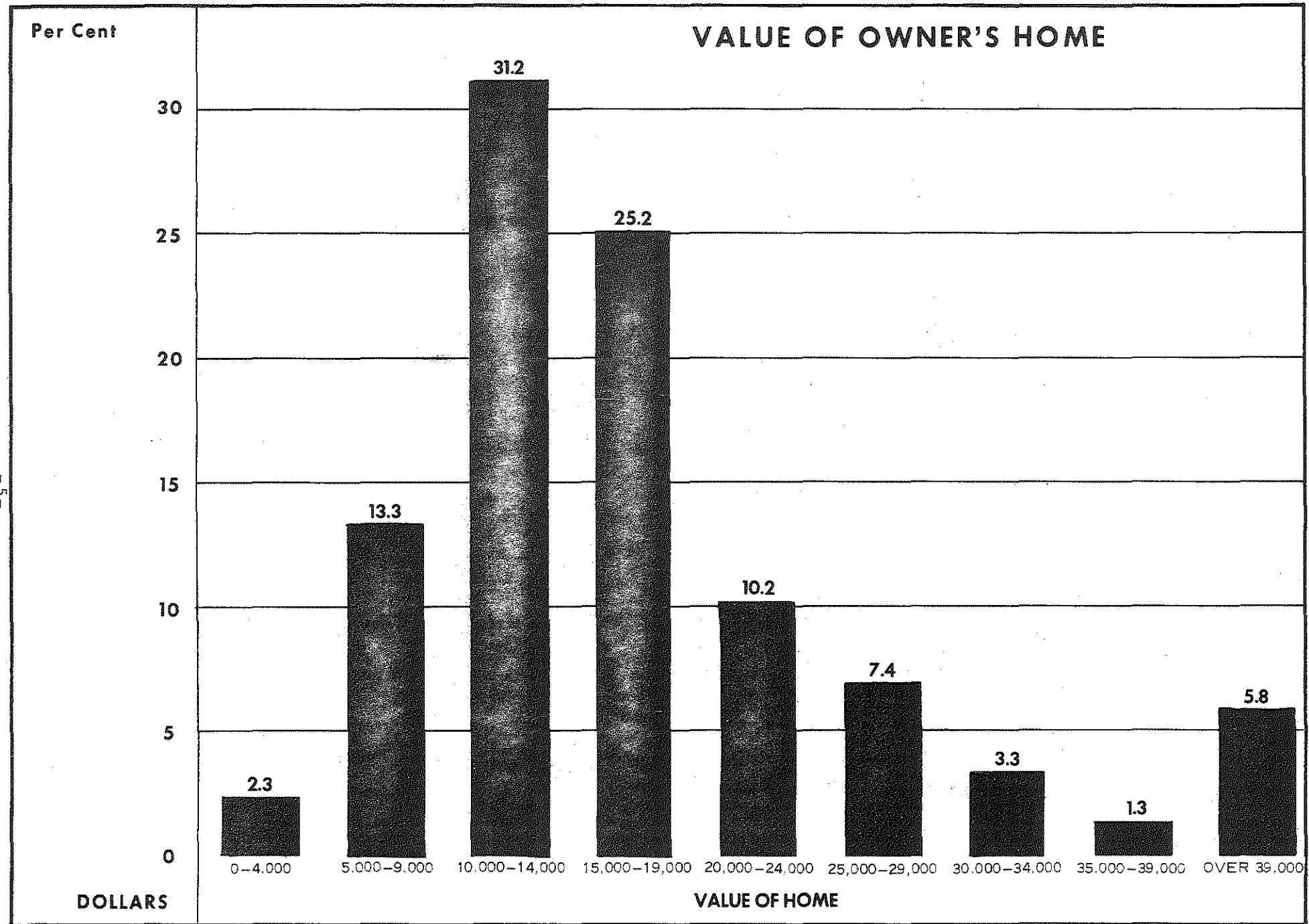
STRUCTURE TYPE

<u>STRUCTURE</u>	<u>HOMES INTERVIEWED</u>	<u>PERCENT</u>
Single	1799	95.7
Group	25	1.3
Hotels	6	.3
Trailers	28	1.5
Rooms	3	.2
Multiple	19	1.0
Other	0	0
Total	1880	100.0

The above table shows that there are very few structures other than single unit homes in the area.

VALUE OF OWNER'S HOME

The value of owner's homes is grouped in increments of \$4,000.00. It was found that the highest percentage in any one group, is in the \$10,000.00 to \$14,000.00 category with the next highest in the \$15,000.00 to \$19,000.00 category. This graph shows that the area is an average income community.



CARS PER SAMPLE

Of the 1880 samples a big majority of the people had 1 or 2 cars. There were no families with more than 4 cars and 8.3% had no cars.

CARS PER SAMPLE

Per Cent

50

45

40

35

30

25

20

15

10

5

0

0

1

2

3

4

5

6

7

8.3

45.7

37.5

6.7

1.8

0

0

0

NUMBER OF CARS

EDUCATION OF HOUSEHOLD HEAD

This tabulation shows that 48.4 percent of the samples interviewed had more than an eleventh grade education and 25.3 percent has more than a high school education. Of the household heads 33% had only five to eight years of education.

HOLLAND-ZEELAND - IAS
 * OF PERSONS EMPLOYED VS. EDUCATION OF HOUSEHOLD HEAD

TA = 024	0	1	2	3	4	5	6	7	8	9	TOTAL
044	6.00	4.00	5.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	16.00
5-8	157.00	269.00	114.00	49.00	14.00	1.00	0.00	1.00	0.00	0.00	615.00
9-11	30.00	189.00	92.00	14.00	3.00	1.00	1.00	0.00	0.00	0.00	330.00
12	30.00	240.00	126.00	28.00	5.00	0.00	1.00	0.00	0.00	0.00	430.00
13-15	27.00	134.00	54.00	12.00	4.00	1.00	0.00	0.00	0.00	0.00	232.00
16	14.00	80.00	21.00	3.00	1.00	1.00	0.00	0.00	0.00	0.00	120.00
>16	20.00	74.00	17.00	8.00	2.00	0.00	0.00	0.00	0.00	0.00	121.00
TOTAL	294.00	990.00	429.00	114.00	30.00	4.00	2.00	1.00	0.00	0.00	1854.00

030 CROSS TABULATION

HOLLAND-ZEFLAND - TAS
 # OF PERSONS EMPLOYED VS. EDUCATION OF HOUSEHOLD HEAD

ELEMENT = % OF GRAND TOTAL

TA = 024	0	1	2	3	4	5	6	7	8	9	TOTAL
0-4	0.32	0.21	0.27	0.00	0.05	0.00	0.00	0.00	0.00	0.00	16.00
5-8	3.96	14.43	6.12	2.63	0.75	0.05	0.00	0.05	0.00	0.00	615.00
9-11	1.61	10.14	4.94	0.75	0.16	0.05	0.05	0.00	0.00	0.00	330.00
12	1.61	12.88	5.76	1.50	0.27	0.00	0.05	0.00	0.00	0.00	430.00
13-15	1.45	7.19	2.90	0.64	0.21	0.05	0.00	0.00	0.00	0.00	232.00
16	0.75	4.29	1.13	0.16	0.05	0.05	0.00	0.00	0.00	0.00	120.00
> 16	1.07	3.97	0.91	0.43	0.11	0.00	0.00	0.00	0.00	0.00	121.00
TOTAL	294.00	990.00	429.00	114.00	30.00	4.00	2.00	1.00	0.00	0.00	1864.00

HOLLAND-ZEELAND - IAS
 # OF PERSONS EMPLOYED VS. EDUCATION OF HOUSEHOLD HEAD

ELEMENT = % OF ROW TOTAL

TA = 024	0	1	2	3	4	5	6	7	8	9	TOTAL
0-4	37.50	25.00	31.25	0.00	6.25	0.00	0.00	0.00	0.00	0.00	16.00
5-8	27.15	43.74	18.54	7.97	2.28	0.16	0.00	0.16	0.00	0.00	615.00
9-11	9.09	57.27	27.88	4.24	0.91	0.30	0.30	0.00	0.00	0.00	330.00
12	6.98	55.81	29.30	6.51	1.16	0.00	0.23	0.00	0.00	0.00	430.00
13-15	11.64	57.76	23.28	5.17	1.72	0.43	0.00	0.00	0.00	0.00	232.00
16	11.67	66.67	17.50	2.50	0.83	0.83	0.00	0.00	0.00	0.00	120.00
>16	16.53	61.16	14.05	6.61	1.65	0.00	0.00	0.00	0.00	0.00	121.00
TOTAL	294.00	990.00	429.00	114.00	30.00	4.00	2.00	1.00	0.00	0.00	1864.00

D&D CROSS TABULATION

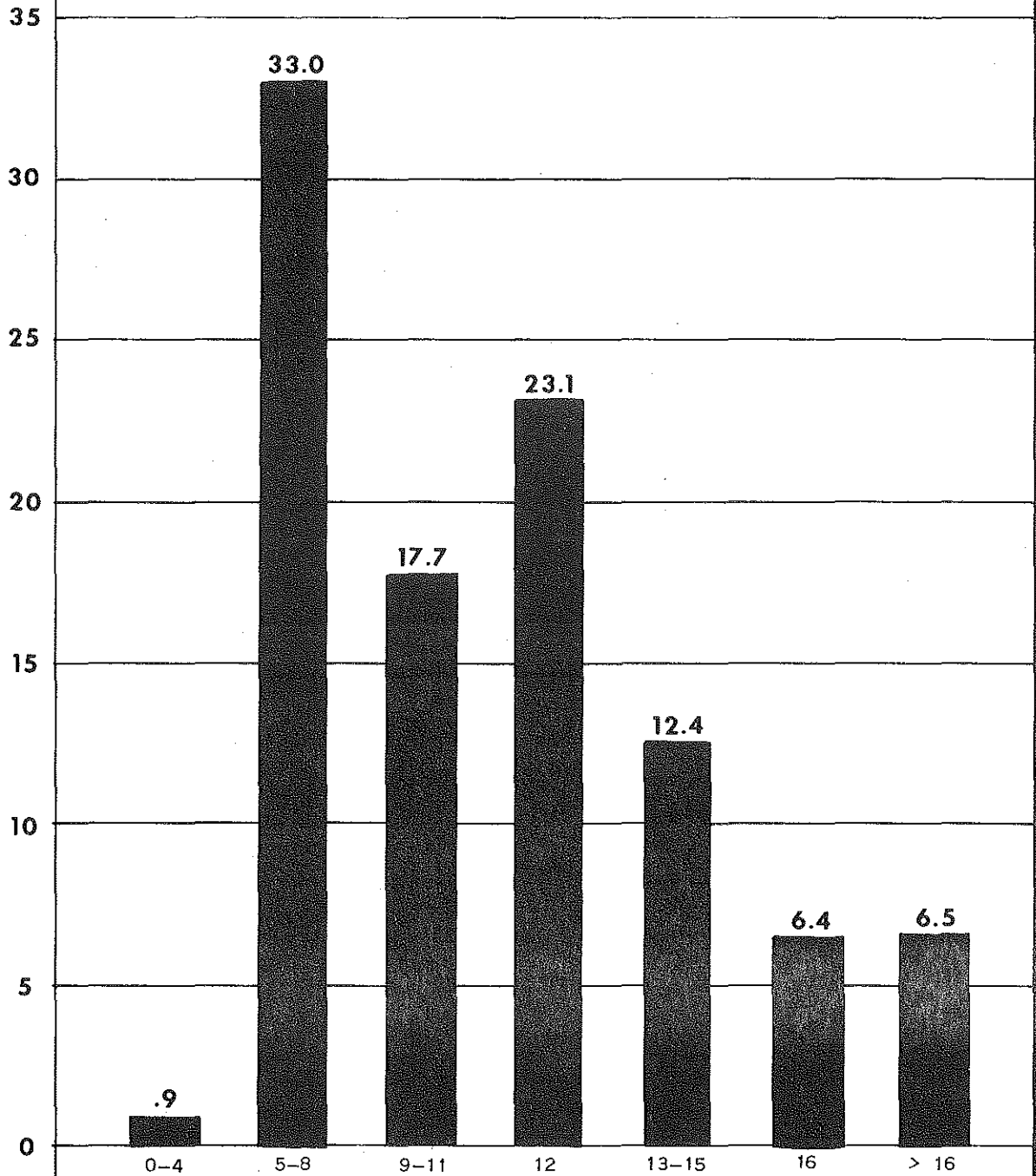
 HOLLAND-ZEELAND - IAS
 # OF PERSONS EMPLOYED VS. EDUCATION OF HOUSEHOLD HEAD

ELEMENT = % OF COLUMN TOTAL

TA = 024	0	1	2	3	4	5	6	7	8	9	TOTAL
0-4	2.04	0.40	1.17	0.00	3.33	0.00	0.00	0.00	0.00	0.00	16.00
5-8	56.60	27.17	26.57	42.98	46.67	25.00	0.00	100.00	0.00	0.00	615.00
9-11	10.20	19.09	21.45	12.28	10.00	25.00	50.00	0.00	0.00	0.00	330.00
12	10.20	24.24	29.37	24.56	16.67	0.00	50.00	0.00	0.00	0.00	430.00
13-15	9.18	13.54	12.59	10.53	13.33	25.00	0.00	0.00	0.00	0.00	232.00
16	4.76	8.08	4.90	2.63	3.33	25.00	0.00	0.00	0.00	0.00	120.00
>16	6.80	7.47	3.96	7.02	6.67	0.00	0.00	0.00	0.00	0.00	121.00
TOTAL	294.00	990.00	429.00	114.00	30.00	4.00	2.00	1.00	0.00	0.00	1864.00

EDUCATION OF HOUSEHOLD HEAD

PER CENT



EDUCATION

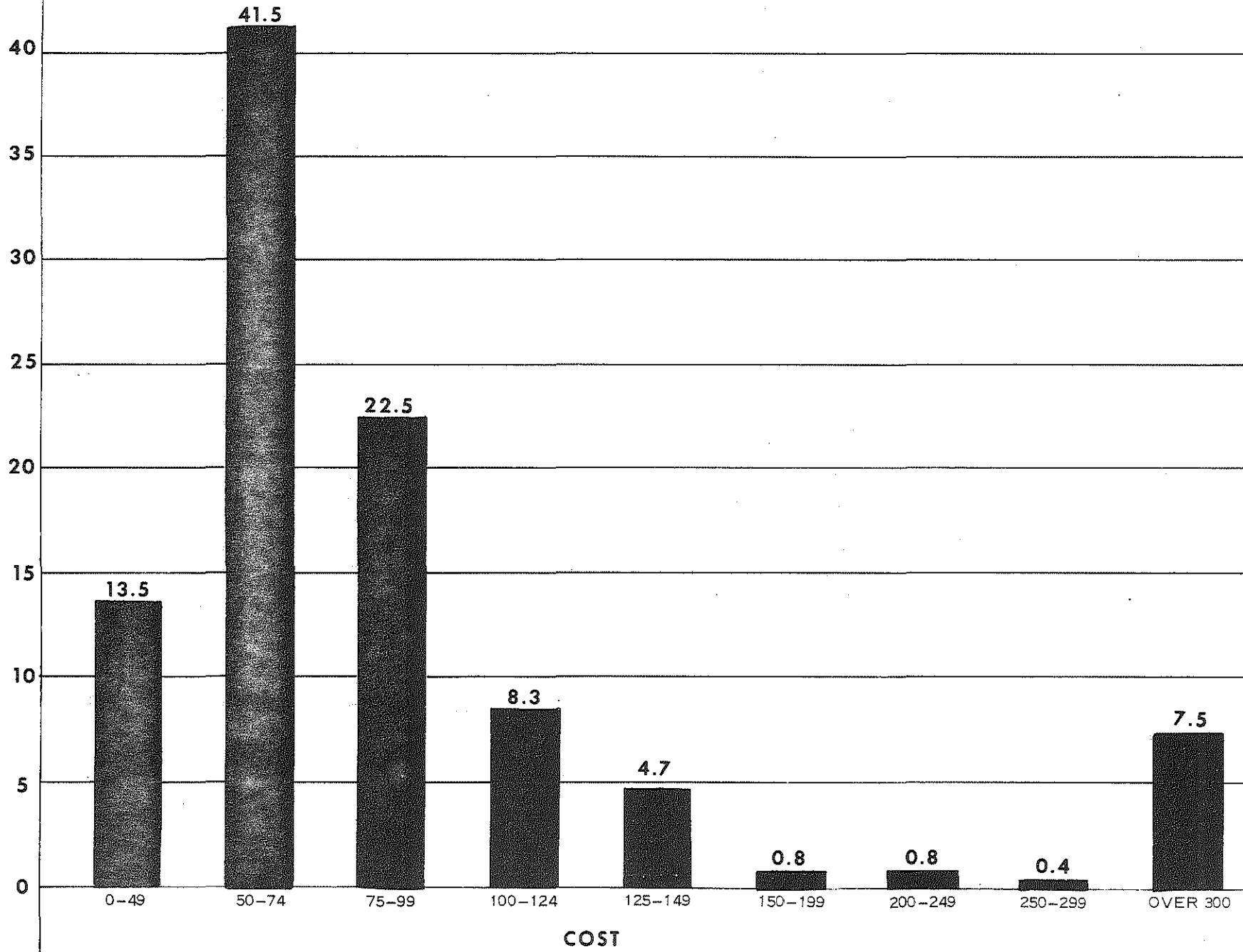
YEARS

COST OF MONTHLY RENT

The monthly rent ranged from under \$49.00 per month to over \$300.00, with nearly one half of the samples interviewed that pay rent, paying in the \$50.00 to \$74.00 range.

Per Cent

COST OF MONTHLY RENT

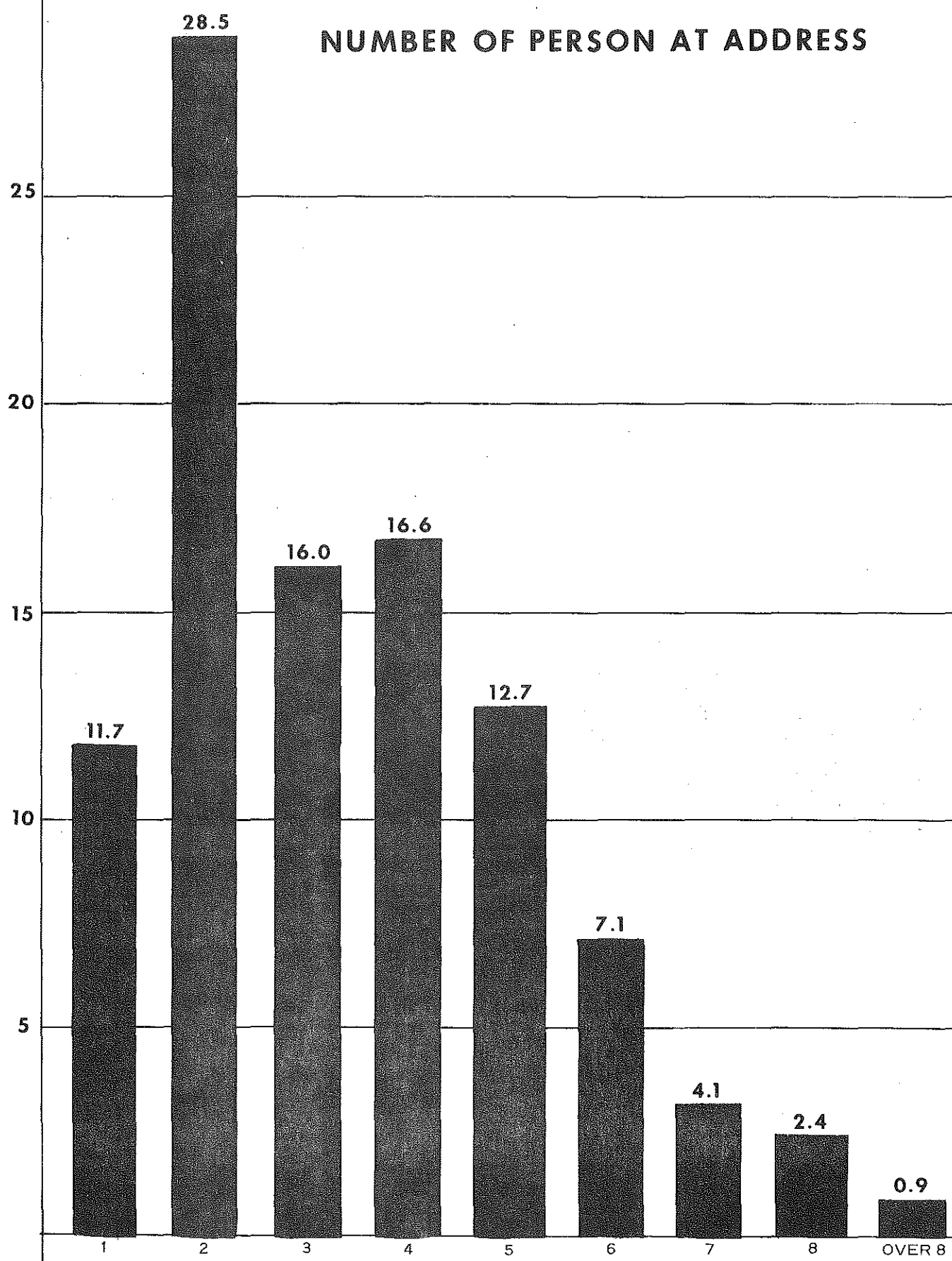


NUMBER OF PERSONS AT ADDRESS

The number of people living at the sample addresses ranged from one to over eight. The highest single group averaged two people at the address with the next highest group averaging four.

Per Cent
30

NUMBER OF PERSON AT ADDRESS



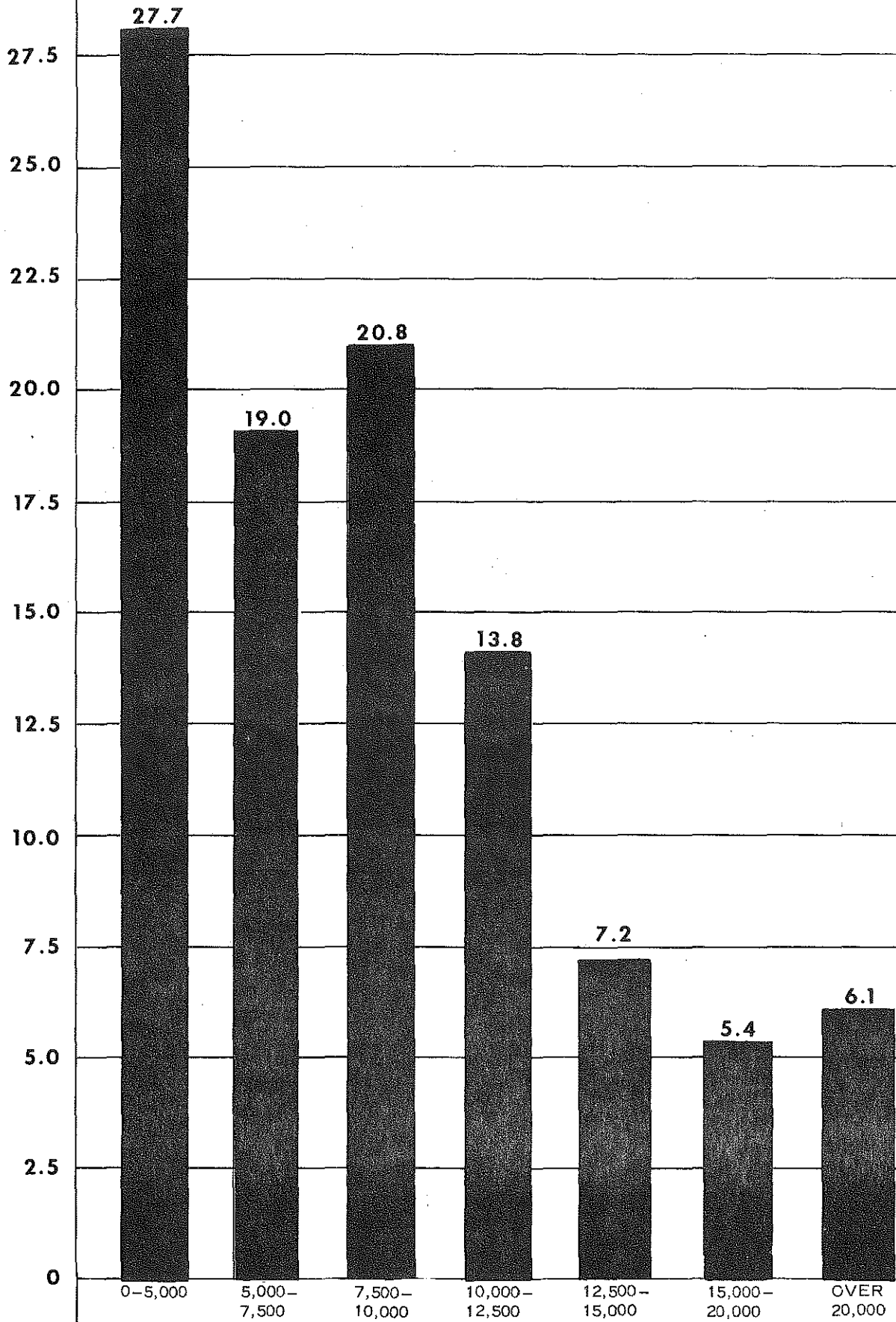
NUMBER OF PERSONS

ANNUAL MILEAGE PER CAR

The annual mileage per car was up to over 20,000 miles. The highest percentage was from 0-5,000 miles. The next highest percentage was from 7,500-10,000 miles. The lowest percentage was from 15,000-20,000 miles.

ANNUAL MILEAGE PER CAR

%



MILES

POPULATION

vs.

CARS

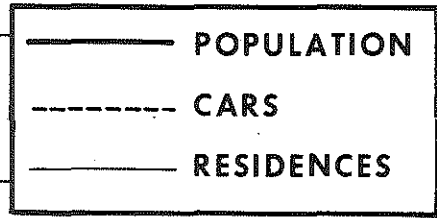
vs.

RESIDENCES BY TRACT

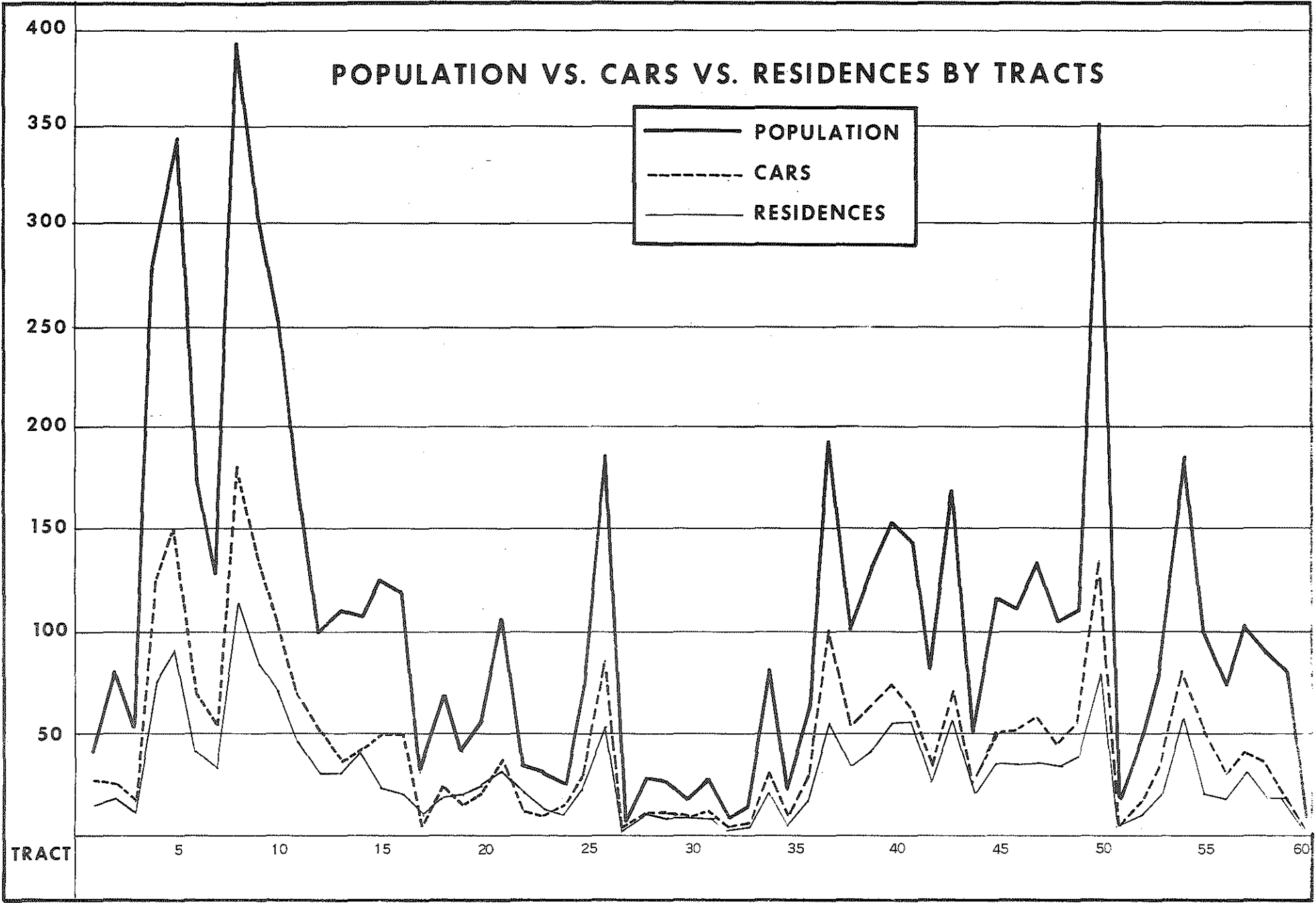
This graph shows the tracts having the higher sample population. Tracts 4, 5, 8, 9, 10 and 50 are much more highly populated. These tracts all lie on the west side of the study area north and south of Holland or in Holland. Tracts 27, 32 and 60 have the lowest population. Tracts 27 and 32 are in Holland, partially commercial and tract 60 is south of Holland where the airport is located. In tracts 17, 19, 20, 22 and 23 there are less cars than residences. These tracts all lie within the cities of Holland or Zeeland in CBD area.

This graph shows that the part of the study area in Allegan County has more cars per household than those in Ottawa County. Tracts from 34-60 are in Allegan County.

POPULATION VS. CARS VS. RESIDENCES BY TRACTS

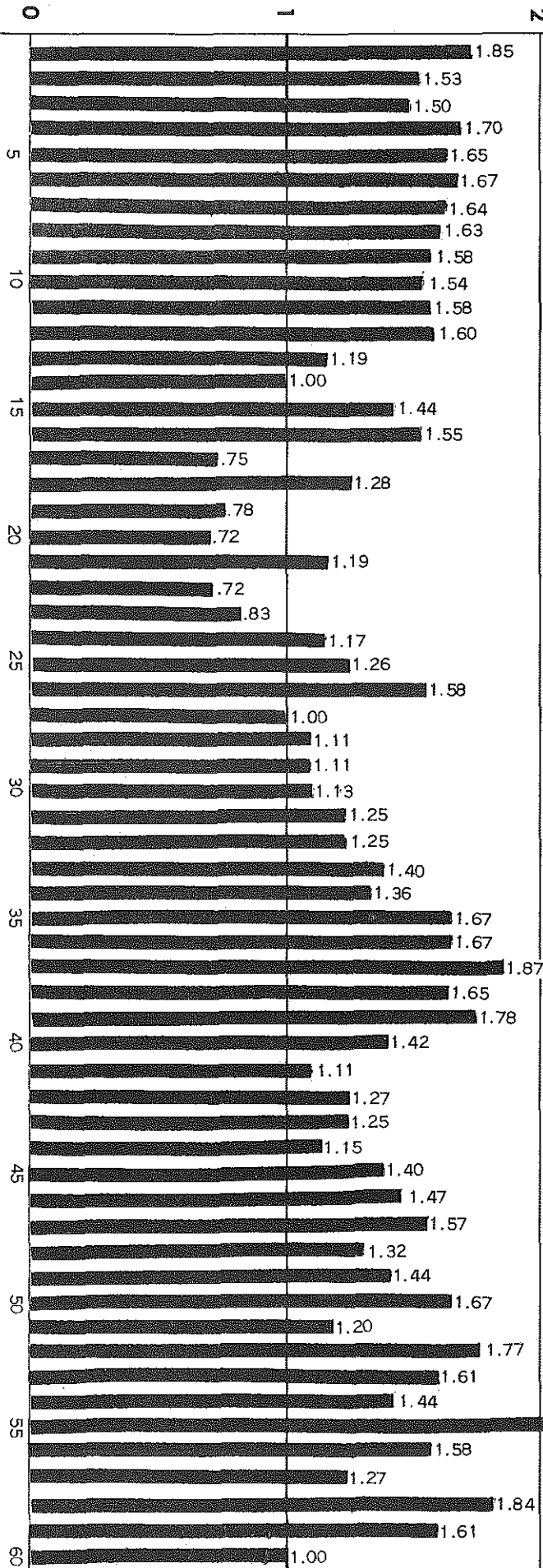


-21-



CARS

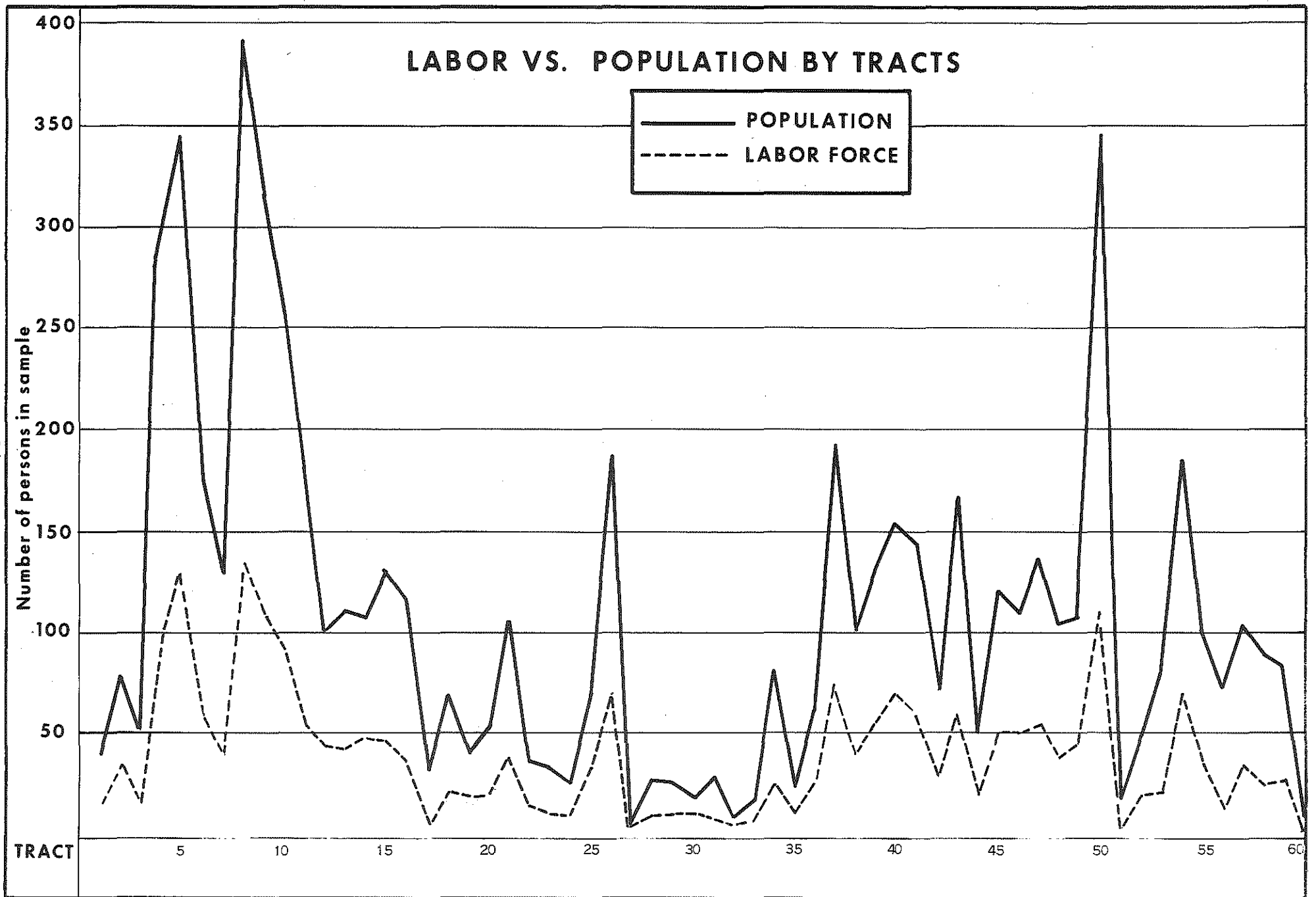
AVERAGE CARS PER SAMPLE PER TRACT



LABOR FORCE Vs. POPULATION BY TRACTS

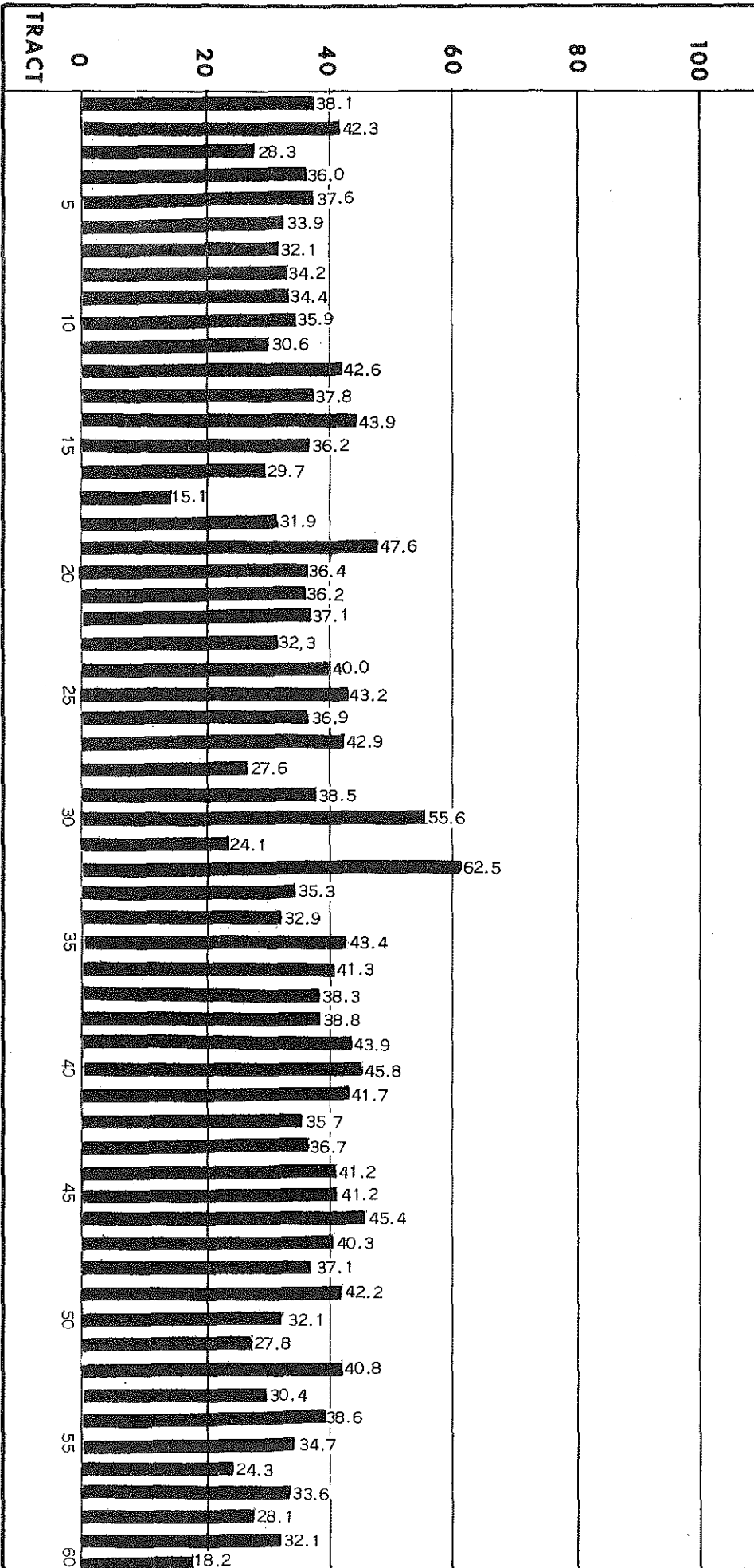
The labor force applies to resident labor force within each tract. It is highest in tracts 4, 5, 8, 9, 10 and 50. These are also the tracts where the population is the highest. This is based on completed sample interviews.

A graph is also included showing the percent employed in each tract.



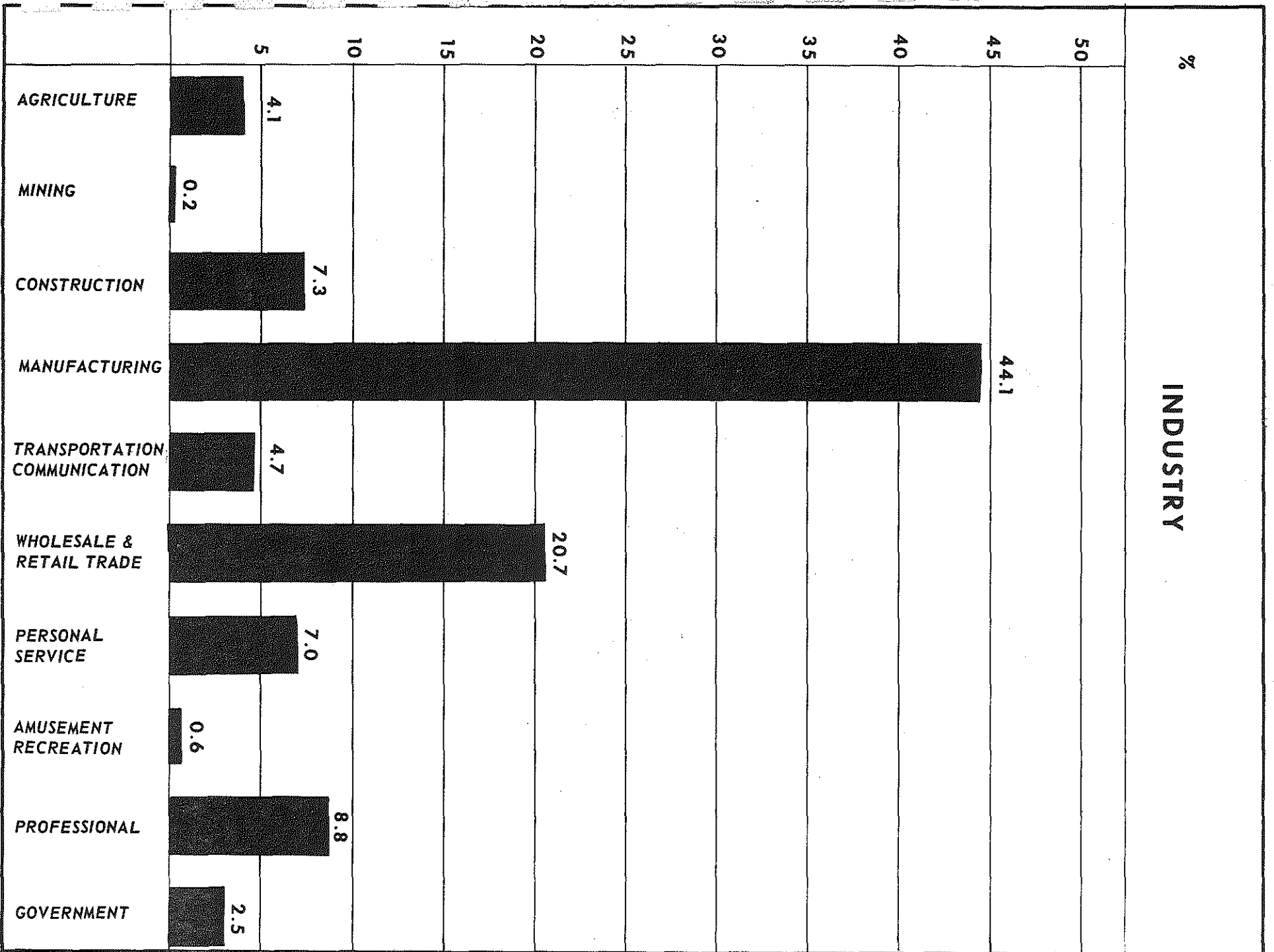
PER CENT OF EMPLOYED PEOPLE LIVING IN EACH TRACT

Per Cent
EMPLOYED



INDUSTRY

The Industry code is based on the principal business activity of the employer. The highest single industry is manufacturing. The next highest is wholesale and retail trade, which includes eating and drinking places, dairies, banks, gas stations, etc. These two categories comprise more than 60% of the whole. Although much of this area is a farming community it is interesting to note that only 4.1% of the whole labor force is in the agricultural industry.



AGE

At first glance this graph would lead one to believe that many of the group included in the young adults leave the area between the ages of 20 and 35. However, the age groups above 35 years include an age span of 10 years and those below 35 years an age span of 5 years. The graph shows that over 42% of the sampled population are under 20 years of age, and over 18% are 55 years or older. This leaves about 40% in the age group 20 years to 55 years.

INTERVIEW ADDRESS RESIDENTS BY AGE

Per Cent

12

10

8

6

4

2

0

10.4

10.2

11.4

10.0

7.1

5.7

5.2

11.2

11.1

7.5

10.1

0-4

5-9

10-14

15-19

20-24

25-29

30-34

35-44

45-54

55-64

OVER 65

AGE - YEARS

HOUSEHOLD INCOME

This graph shows that the majority of the people sampled are in the average income category. While 24.4% have an average income below \$5,000.00 and 24.5% have an average income of \$10,000.00 or more, it leaves 51.1% falling in the range of \$5,000.00 to \$10,000.00 income.

HOUSEHOLD INCOME

%

18

15

12

9

6

3

0

0-1,999

2,000-3,999

4,000-4,999

5,000-5,999

6,000-6,999

7,000-7,999

8,000-9,999

10,000-14,999

OVER 15,000

8.4

9.8

6.3

11.3

12.8

13.0

13.9

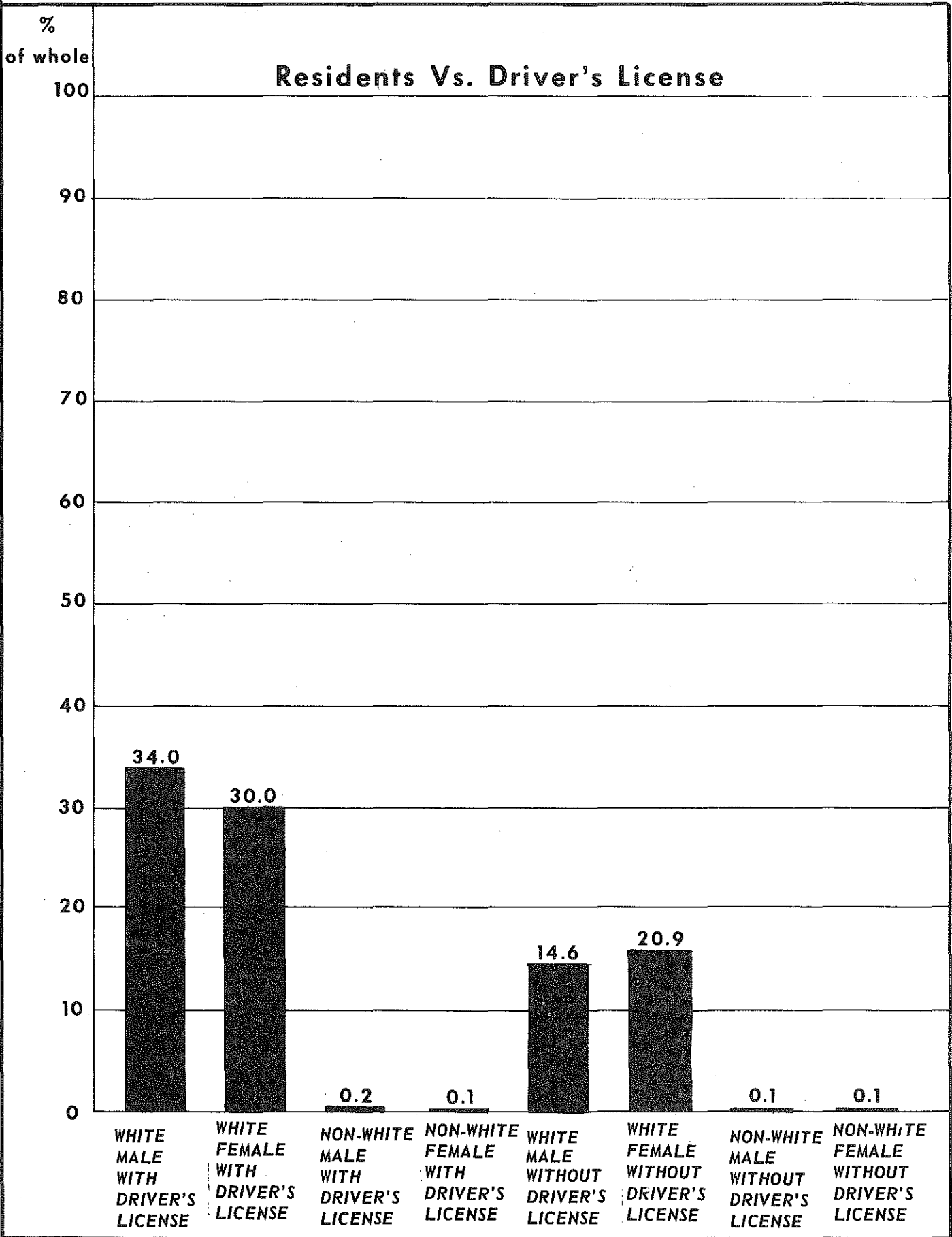
16.5

8.0

INCOME

RESIDENTS vs. DRIVER'S LICENSE

This tabulation and graph shows that there are very few non-white residents in the study area. The non-whites were less than 1% of the samples interviewed. It shows that there are more male than female drivers and more female than male non-drivers. It also shows there are more females than males in the area. This tabulation shows 12 sample addresses that have someone under 15 years of age with a driver's license. These may be errors.



AGE GROUP PERCENTAGES OF TOTAL DRIVERS

%

35

30

25

20

15

10

5

0

0

.2

12.6

11.7

9.5

8.6

18.4

18.0

10.7

10.3

< 5

5-9

10-14

15-19

20-24

25-29

30-34

35-44

45-54

55-64

> 64

AGE