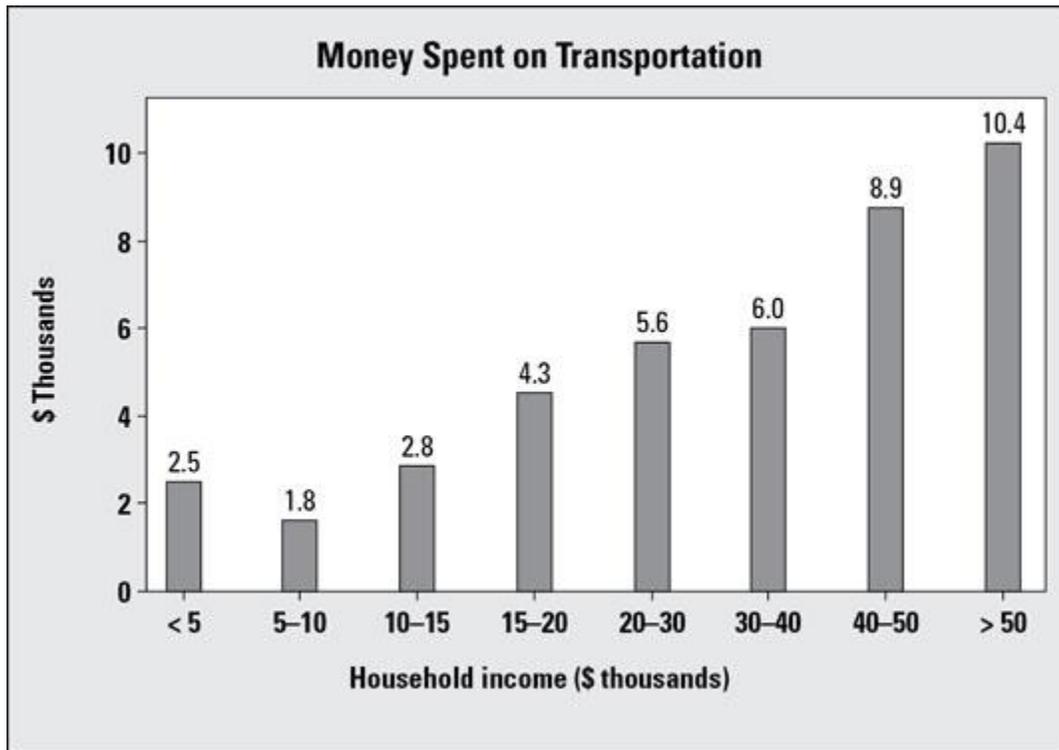


**KEY**

Answer the following questions about the bar graph below:



1) Do we know who collected this information? \_\_\_\_\_ **NO** \_\_\_\_\_

2) Do we know how the information was collected? \_\_\_\_\_ **NO** \_\_\_\_\_

3) Do we know when the information was collected? \_\_\_\_\_ **NO** \_\_\_\_\_

4) Is it important to know how the information was obtained for this graph? Why or why not?

**YES.**

**MUST CONSIDER BIAS AND RANDOMNESS TO GAGE ACCURACY OF RESULTS TO APPLY TO A WHOLE POPULATION**

5) How much money does someone who makes \$25,000 spend on transportation? \_\_\_\_\_ **\$5,600.00** \_\_\_\_\_

6) What is the minimum amount spent on transportation? \_\_\_\_\_ **\$1,800.00** \_\_\_\_\_

7) What is the maximum amount spent on transportation? \_\_\_\_\_ \$10,400.00 \_\_\_\_\_

8) What is the minimum amount of household income? \_\_\_\_\_ Less than \$5,000.00 \_\_\_\_\_

9) Does money spent on transportation increase with every increase in income? If not, at what income levels does it not increase?

NO Between less than \$5,000.00 and \$5,000 - \$10,000 it goes down from \$2,500.00 to \$1,800.00

10) Does it make sense that money spent on transportation generally increases with income level? Why or why not?

YES more income means more money available for "extras" such as cars, gas, planes, trains.

Lower income means that more household income must be used for basic necessities such as housing, food, clothing.

11) Now, calculate the amount spent on transportation as a percent of total income:

Percent is: part/whole 2,500 spent on transportation/household income of 5,000 =  $2500/5000 = .5 = 50\%$

< 5 \_\_\_\_\_ 50% \_\_\_\_\_

5 – 10 \_\_\_\_\_ 18% \_\_\_\_\_ 1800/10000

10-15 \_\_\_\_\_ 18.7% \_\_\_\_\_ 2800/15000

20-30 \_\_\_\_\_ 18.7% \_\_\_\_\_ 5600/30000

30-40 \_\_\_\_\_ 15% \_\_\_\_\_ 6000/40000

40-50 \_\_\_\_\_ 17.8% \_\_\_\_\_ 8900/50000

>50 \_\_\_\_\_ 17.3% \_\_\_\_\_ example: 10400/60000

12) Does your conclusion about the amount of money spent on transportation change based on these figures? If so, how? Which category spends the most percent of their income on transportation?

Yes. Those earning less than \$5000.00 per year spend half (50%) of their income on transportation which leaves much less money available for other purchases and luxuries.

Those in the \$30000.00-\$40000.00 range spend the least percent of their income on transportation at 15%

Those with the most income spend the second smallest percent of income on transportation at 17.3%

Median household income in Fairfax County, VA is currently: \$122,227 (per DATAUSA 6/13/2020).

$10400/122227 = 8.5\%$

My conclusion changes from: Those who make the most income spend the most on transportation, to: The higher the income, smaller percent of income spent on transportation leaving more money available for other types of spending.

13) What is a problem with the way the groupings are set up? For example, which group would you put someone with an income of exactly 40,000

The number appears in two separate categories which results in confusing results

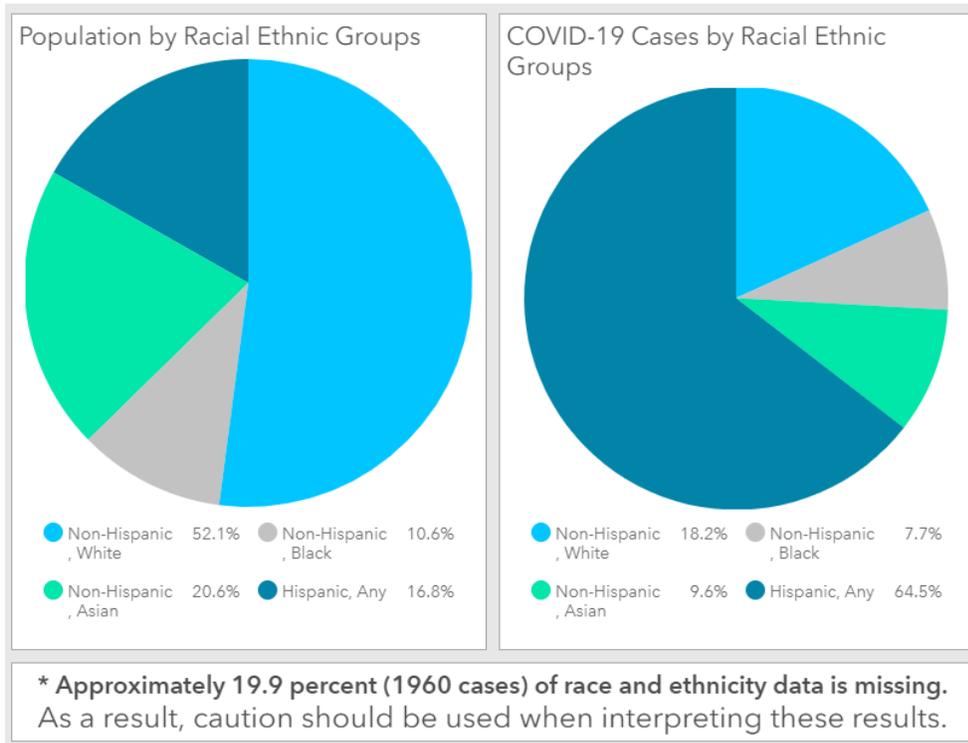
14) How could you change the groupings so that an income could not be placed in two categories?

Categories should end at .99 for example: 0 – 4.99. 5 – 9.99 10-14.99 etc

15) What else do you notice about the graph groupings that is inconsistent and could cause a misrepresentation of the data?

Category groupings are not consistent. The first four categories increase by \$5000.00 each, but after the 20000-30000 category the increase is by \$10000.00. This can cause a misrepresentation of the true data.

### Fairfax County Health Department Cases by Racial Ethnic Group



Note: Data is from May 15th

- Which ethnic group has the highest population? Non Hispanic, white
- Which ethnic group has the highest number of Covid 19 cases? Hispanic, any
- What are some possible reasons that the group with the highest population does not have the highest number of Covid-19 cases?  
Lower income levels may lead to less opportunity for medical care and participation in social distancing and mask wearing. If more essential workers are from this category, they may have higher exposure rates.
- How could county health experts use this information to provide Covid-19 support services?  
Health experts and government resources (money) should be allocated to the Hispanic population to fight Covid-19
- Why should "caution be used when interpreting these results" ?  
The statement that "approximately 19.9% of data is missing. Which means there is almost 20% of data missing so the results may not be as they appear.
- Do the graphs give a true representation of population data and Covid-19 cases?  
Maybe. We don't know as they admit 19.9% of the data is missing.