

# Categorical data

## Practice problems

9/23/24

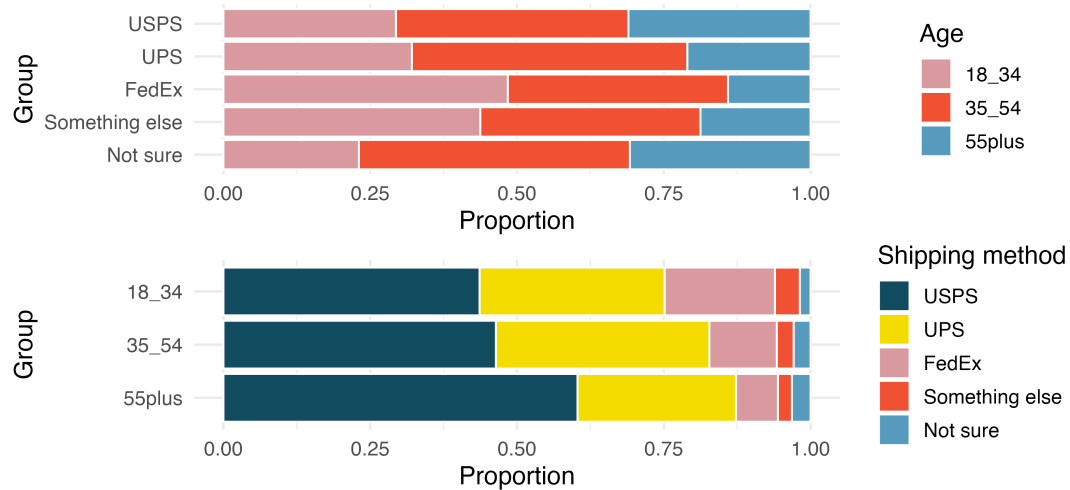
Please work on the practice problems in your group. At least one of the following problems will be assigned to the weekly problem set.

1. Nine-hundred ten (910) randomly sampled registered voters from Tampa, FL were asked if they thought workers who have illegally entered the US should be (i) allowed to keep their jobs and apply for US citizenship, (ii) allowed to keep their jobs as temporary guest workers but not allowed to apply for US citizenship, (iii) lose their jobs and have to leave the country, or (iv) not sure. The results of the survey by political ideology are shown below.

response	conservative	liberal	moderate
Apply for citizenship	57	101	120
Guest worker	121	28	113
Leave the country	179	45	126
Not sure	15	1	4

- a. What percent of these Tampa, FL voters identify themselves as conservatives?
- b. What percent of these Tampa, FL voters are in favor of the citizenship option?
- c. What percent of these Tampa, FL voters identify themselves as conservatives and are in favor of the citizenship option?
- d. What percent of these Tampa, FL voters who identify themselves as conservatives are also in favor of the citizenship option? What percent of moderates share this view? What percent of liberals share this view?
- e. Do political ideology and views on immigration appear to be associated? Explain your reasoning.

2. A local news survey asked 500 randomly sampled Los Angeles residents which shipping carrier they prefer to use for shipping holiday gifts. The bar plots below show the distribution of responses by age group as well as distribution of responses by shipping method.



- Which graph (top or bottom) would you use to understand the shipping choices of people of different ages? Explain.
- Which graph (top or bottom) would you use to understand the age distribution across different types of shipping choices? Explain.
- A new shipping company would like to market to people over the age of 55. Who will be their biggest competitor? Explain.
- FedEx would like to reach out to grow their market share so as to balance the age demographics of FedEx users. To what age group should FedEx market?