

R bootcamp exercise - Fisheries stakeholders survey

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We are going to work with data from a survey conducted with fisheries stakeholders in Brazil. Through an online survey, they were asked if they agree or disagree with the use of no-take areas for fisheries management. Respondents chose a response from 1 to 5, where: 1 - Agree, 2 - Partially agree, 3 - Neither agree or disagree, 4 - Partially disagree, 5 - Disagree.

- 1) Read explore the data ("data_qualitative.csv"). How many variables does the dataset have? What information it contains? How many respondents?
- 2) Calculate the frequency distribution of responses. How many responses did we have for each option (1 to 5)?
- 3) Calculate the relative frequency and percentage distributions of responses. What percentage of responses was 1, 2, 3, 4 and 5?
- 4) Build a bar graph of the frequency distribution of responses.
- 5) Build a pie chart of percentage distributions distribution of responses.

##Answers 1) Read explore the data ("data_qualitative.csv"). How many variables does the dataset have? What information it contains? How many respondents?

```
library(tidyverse)

## — Attaching packages ————— tidyverse
1.3.0 —

## ✓ ggplot2 3.3.2      ✓ purrr 0.3.3
## ✓ tibble 2.1.3       ✓ dplyr 0.8.4
## ✓ tidyr 1.0.2        ✓ stringr 1.4.0
## ✓ readr 1.3.1        ✓ forcats 0.5.0

## — Conflicts —————
tidyverse_conflicts() —
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()

dat <- read_csv("~/Rbootcamp_Madagascar/data/data_qualitative.csv")

## Parsed with column specification:
## cols(
##   respondent = col_double(),
##   variable = col_character(),
##   value = col_double()
## )
```

```
nrow(dat)
```

```
## [1] 35
```

- 2) Calculate the frequency distribution of responses. How many responses did we have for each option (1 to 5)?

```
dat %>%  
  count(value)
```

```
## # A tibble: 4 x 2  
##   value     n  
##   <dbl> <int>  
## 1     1    14  
## 2     2    15  
## 3     3     5  
## 4     4     1
```

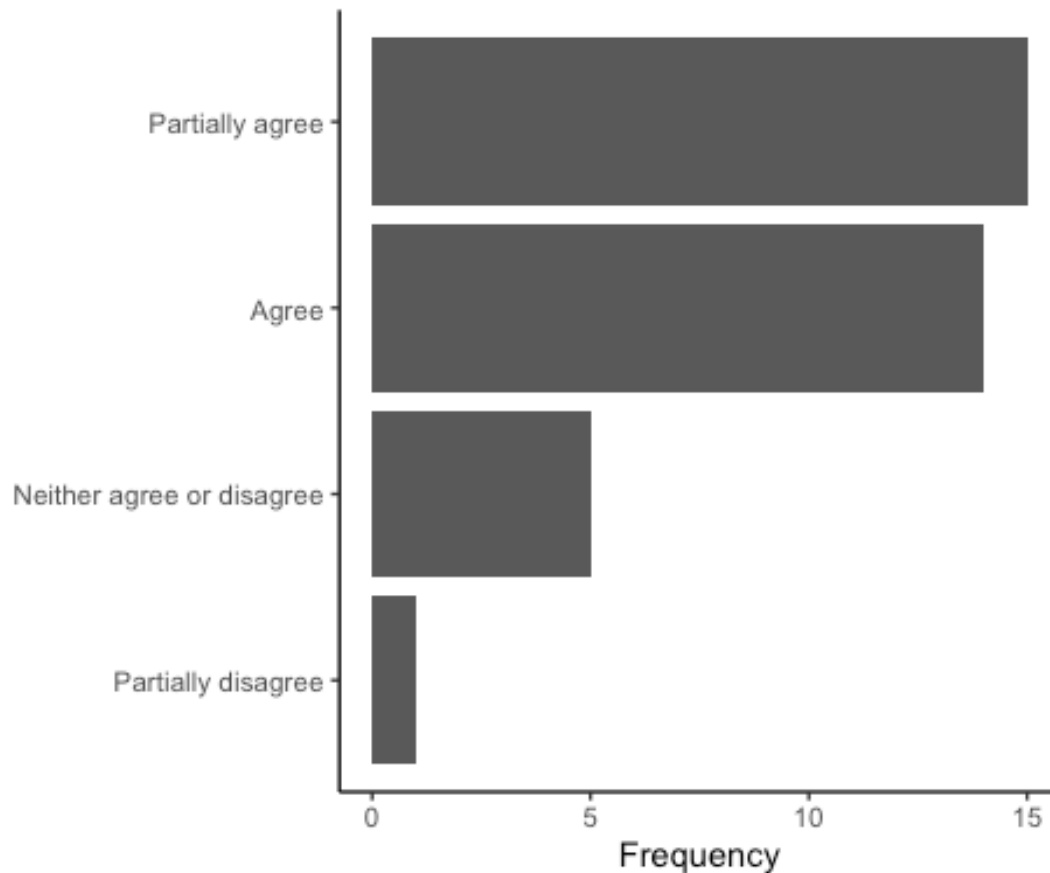
- 3) Calculate the relative frequency and percentage distributions of responses. What percentage of responses was 1, 2, 3, 4 and 5?

```
dat %>%  
  count(value) %>%  
  mutate(rel_freq = n/nrow(dat),  
         perc = rel_freq*100)
```

```
## # A tibble: 4 x 4  
##   value     n rel_freq perc  
##   <dbl> <int>   <dbl> <dbl>  
## 1     1    14    0.4    40  
## 2     2    15   0.429  42.9  
## 3     3     5   0.143  14.3  
## 4     4     1   0.0286  2.86
```

- 4) Build a bar graph of the frequency distribution of responses.

```
freq_dat = dat %>%  
  count(value) %>%  
  mutate(rel_freq = n/nrow(dat),  
         perc = rel_freq*100,  
         response = case_when(value == 1 ~ "Agree",  
                              value == 2 ~ "Partially agree",  
                              value == 3 ~ "Neither agree or disagree",  
                              value == 4 ~ "Partially disagree",  
                              value == 5 ~ "Disagree"))  
  
ggplot(data = freq_dat, aes(x = reorder(response, n), y = n)) +  
  geom_bar(stat = "identity") +  
  coord_flip() +  
  labs(x = "", y = "Frequency") +  
  theme_classic()
```



5) Build

a pie chart of percentage distributions distribution of responses.

```
freq_dat = dat %>%
  count(value) %>%
  mutate(rel_freq = n/nrow(dat),
         perc = rel_freq*100,
         response = case_when(value == 1 ~ "Agree",
                              value == 2 ~ "Partially agree",
                              value == 3 ~ "Neither agree or disagree",
                              value == 4 ~ "Partially disagree",
                              value == 5 ~ "Disagree"),
         lab = paste(round(perc), "%", sep = ""),
         ypos = c(80, 52, 25, 3))

ggplot(data = freq_dat, aes(x = "", y = perc, fill = response)) +
  geom_bar(width=1, color="white", stat = "identity") +
  coord_polar("y", start=0) +
  theme_void() +
  labs(fill = "") +
  geom_text(aes(y = ypos, label = lab), color = "white", size=6) +
  scale_fill_brewer(palette="Set1")
```

