

Milestone 4 Graphs

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R Markdown

```
library(readr)
library(tidyverse)

## -- Attaching packages ----- tidyverse 1.3.1 --
## v ggplot2 3.3.5      v dplyr  1.0.8
## v tibble  3.1.6      v stringr 1.4.0
## v tidyr   1.2.0      v forcats 0.5.1
## v purrr   0.3.4

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

nj <- read_csv("njsurvey.csv")

## Rows: 126 Columns: 36

## -- Column specification -----
## Delimiter: ","
## chr (6): Gender, Employment Status, Race/Ethnicity, Relationship Status, Cu...
## dbl (30): Age, Q1, Q2, Q3, Q4, Q5, Q6, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15,...
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.

q <- read_csv("questions.csv")

## Rows: 30 Columns: 3
## -- Column specification -----
## Delimiter: ","
## chr (3): Question Code, Full Question, Construct Name
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.

nj <- nj %>%
  subset(Gender != "Male")

nj <- subset (nj, select = -Q7) %>%
  rename(employ = "Employment Status")

financial <- nj %>%
  subset(select = -c(Q8:Q30)) %>%
```

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    rename(race = "Race/Ethnicity")
financial <- financial %>% pivot_longer(
  cols = starts_with("Q"),
  names_to = "question",
  values_to = "extent",
  values_drop_na = TRUE
)

society <- nj %>%
  subset(select = -c(Q1:Q6, Q13:Q30)) %>%
  rename(race = "Race/Ethnicity")
society <- society %>% pivot_longer(
  cols = starts_with("Q"),
  names_to = "question",
  values_to = "extent",
  values_drop_na = TRUE
)

outinfluences <- nj %>%
  subset(select = -c(Q1:Q12, Q21:Q30)) %>%
  rename(race = "Race/Ethnicity")
outinfluences <- outinfluences %>% pivot_longer(
  cols = starts_with("Q"),
  names_to = "question",
  values_to = "extent",
  values_drop_na = TRUE
)

health <- nj %>%
  subset(select = -c(Q1:Q20)) %>%
  rename(race = "Race/Ethnicity")
health <- health %>% pivot_longer(
  cols = starts_with("Q"),
  names_to = "question",
  values_to = "extent",
  values_drop_na = TRUE
)

race_financial <- financial %>%
  group_by(race) %>%
  summarise(mean(extent)) %>%
  rename("Financial Extent" = "mean(extent)")

race_society <- society %>%
  group_by(race) %>%
  summarise(mean(extent)) %>%
  rename("Society Extent" = "mean(extent)")

race_outinfluences <- outinfluences %>%
  group_by(race) %>%
  summarise(mean(extent)) %>%
  rename("Outside Influences Extent" = "mean(extent)")

race_health <- health %>%

```

```

group_by(race) %>%
  summarise(mean(extent)) %>%
  rename("Health Extent" = "mean(extent)")

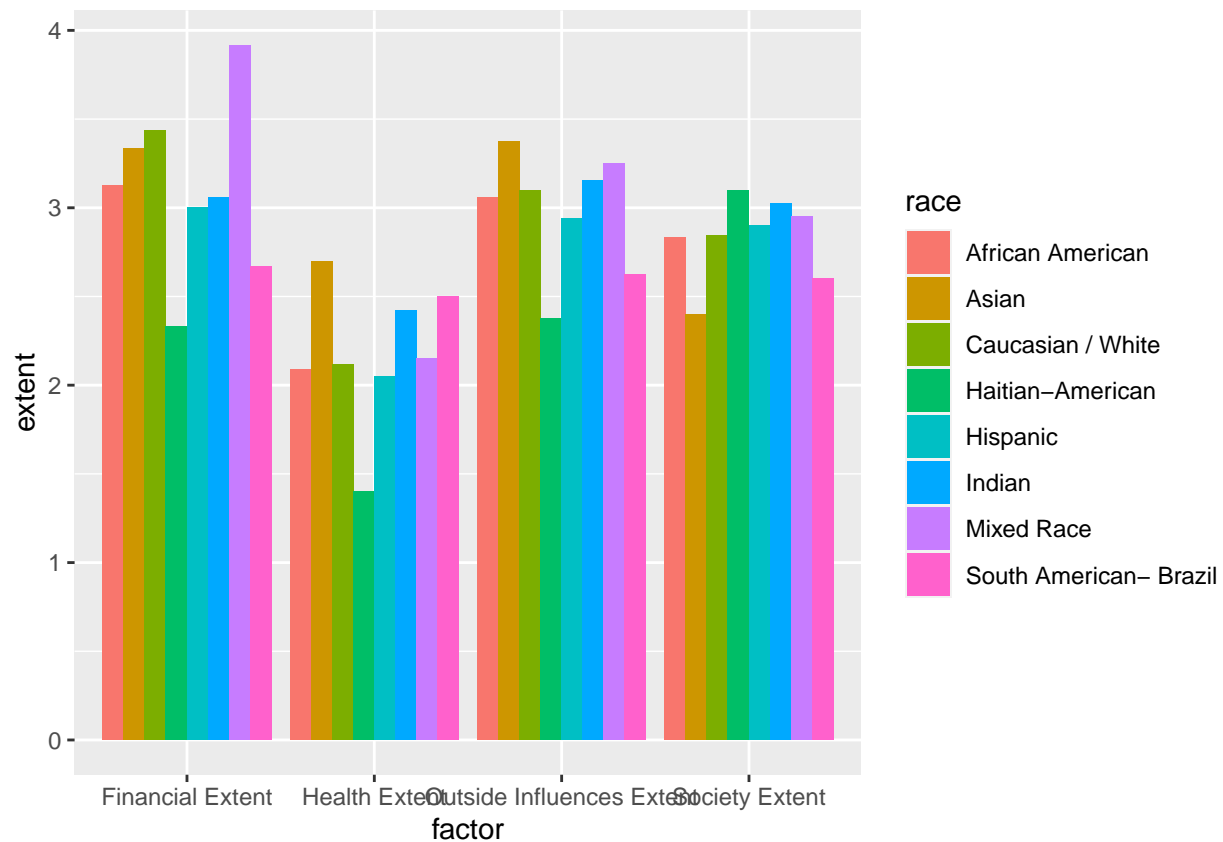
df_list <- list(race_financial, race_society, race_outinfluences, race_health)

race_factors <- df_list %>% reduce(full_join, by='race')

race_factors <- pivot_longer(race_factors, cols = !race, names_to = "factor", values_to = "extent")

ggplot(race_factors, aes(x= factor, y = extent)) +
  geom_bar(aes(fill = race), stat = "identity", position = "dodge")

```



```

employ_financial <- financial %>%
  group_by(employ) %>%
  summarise(mean(extent))%>%
  rename("Financial Extent" = "mean(extent)")

employ_society <- society %>%
  group_by(employ) %>%
  summarise(mean(extent)) %>%
  rename("Society Extent" = "mean(extent)")

employ_outinfluences <- outinfluences %>%
  group_by(employ) %>%
  summarise(mean(extent)) %>%
  rename("Outside Influences Extent" = "mean(extent)")

```

```

employ_health <- health %>%
  group_by(employ) %>%
  summarise(mean(extent)) %>%
  rename("Health Extent" = "mean(extent)")

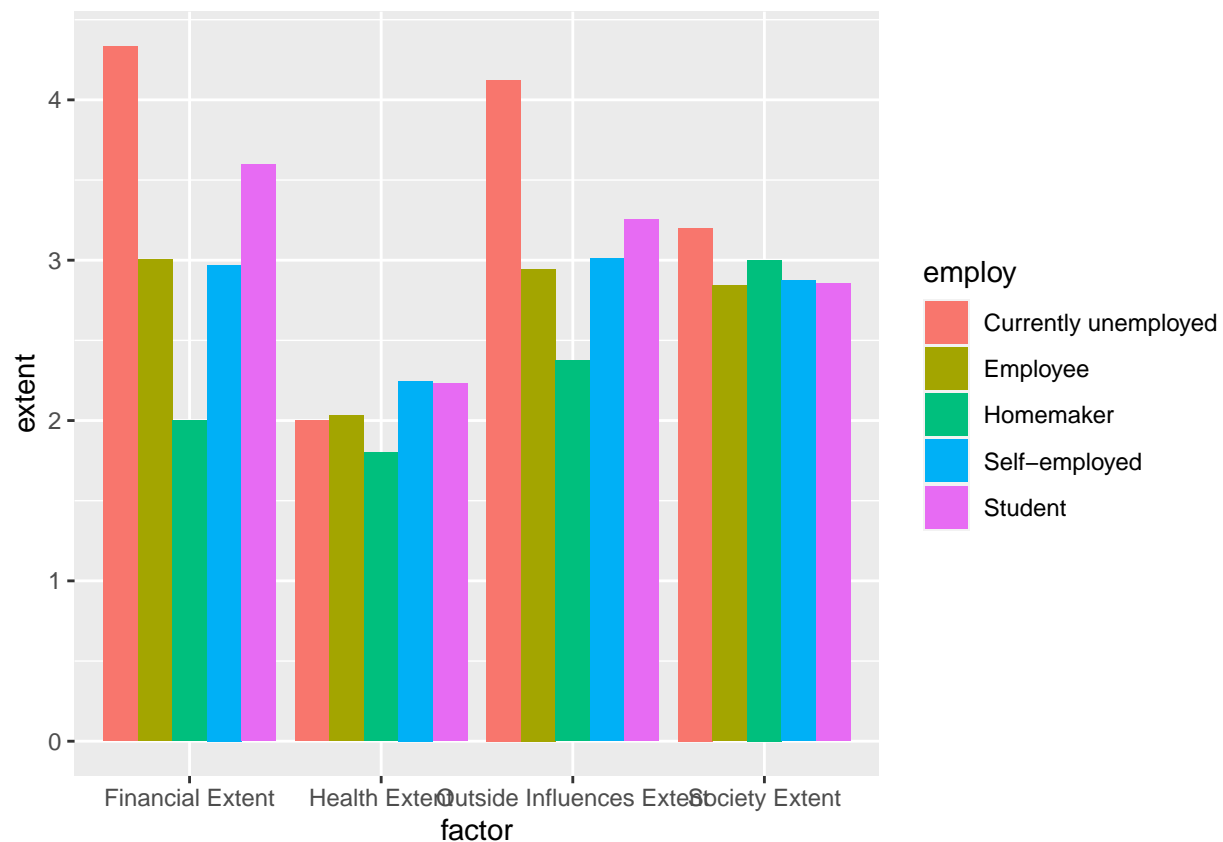
df_list <- list(employ_financial, employ_society, employ_outinfluences, employ_health)

employ_factors <- df_list %>% reduce(full_join, by='employ')

employ_factors <- pivot_longer(employ_factors, cols = !employ, names_to = "factor", values_to = "extent")

ggplot(employ_factors, aes(x= factor, y = extent)) +
  geom_bar(aes(fill = employ), stat = "identity", position = "dodge")

```



```

question_nums <- unique(health$question)
question_text <- c("Middle aged women are probably infertile", "Middle aged women will face health comp

health$question_text <- plyr::mapvalues(health$question,
  from = question_nums,
  to = question_text)

health <- health %>%
  group_by(question_text) %>%
  mutate(avg_extent = mean(extent))

```

```
ggplot(health, aes(x = extent, y= reorder(question_text, extent, mean), fill = avg_extent)) +
  geom_violin() +
  labs(title = "Health Factors",
       subtitle = "To what extent do the following reasons influence a woman's decision to not have a child",
       x = "1 = Strongly Disagree, 5 = Strongly Agree",
       y = element_blank(),
       fill = "Average Rating") +
  scale_fill_distiller(palette = "RdPu", direction = 1, limits = c(0, 5)) +
  scale_y_discrete(labels = function(x) stringr::str_wrap(x, width = 30)) +
  theme_minimal() +
  theme(legend.position = "bottom",
       legend.text=element_text(size=10),
       axis.text=element_text(size=8),
       plot.title=element_text(size=12),
       plot.subtitle=element_text(size=10))
```



```
question_nums <- unique(outinfluences$question)
question_text <- c("Negative Stories about Childbirth", "Negative Messages about Single Parent Households")
outinfluences$question_text <- plyr::mapvalues(outinfluences$question,
```

```

      from = question_nums,
      to = question_text)

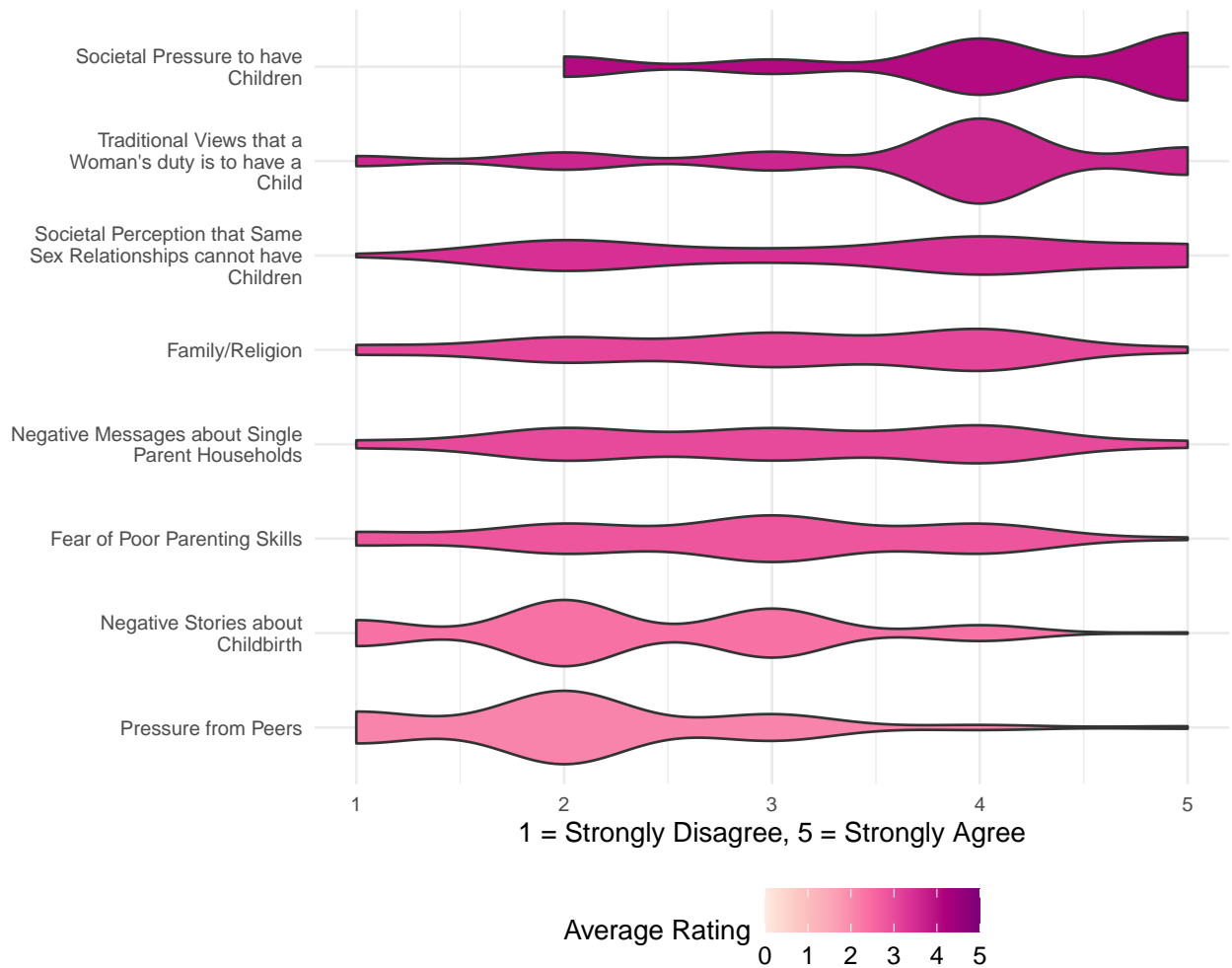
outinfluences <- outinfluences %>%
  group_by(question_text) %>%
  mutate(avg_extent = mean(extent))

ggplot(outinfluences, aes(x = extent, y= reorder(question_text, extent, mean), fill = avg_extent)) +
  geom_violin() +
  labs(title = "Outside Influences",
       subtitle = "To what extent do the following reasons influence a woman's decision to not have a child",
       x = "1 = Strongly Disagree, 5 = Strongly Agree",
       y = element_blank(),
       fill = "Average Rating") +
  scale_fill_distiller(palette = "RdPu", direction = 1, limits = c(0, 5)) +
  scale_y_discrete(labels = function(x) stringr::str_wrap(x, width = 30)) +
  theme_minimal() +
  theme(legend.position = "bottom",
        legend.text=element_text(size=10),
        axis.text=element_text(size=8),
        plot.title=element_text(size=12),
        plot.subtitle=element_text(size=10))

```

Outside Influences

To what extent do the following reasons influence a woman's decision to not have a child?



```
question_nums <- unique(society$question)
question_text <- c("It is reasonable for a woman to not have a child", "Society has a negative opinion a

society$question_text <- plyr::mapvalues(society$question,
  from = question_nums,
  to = question_text)

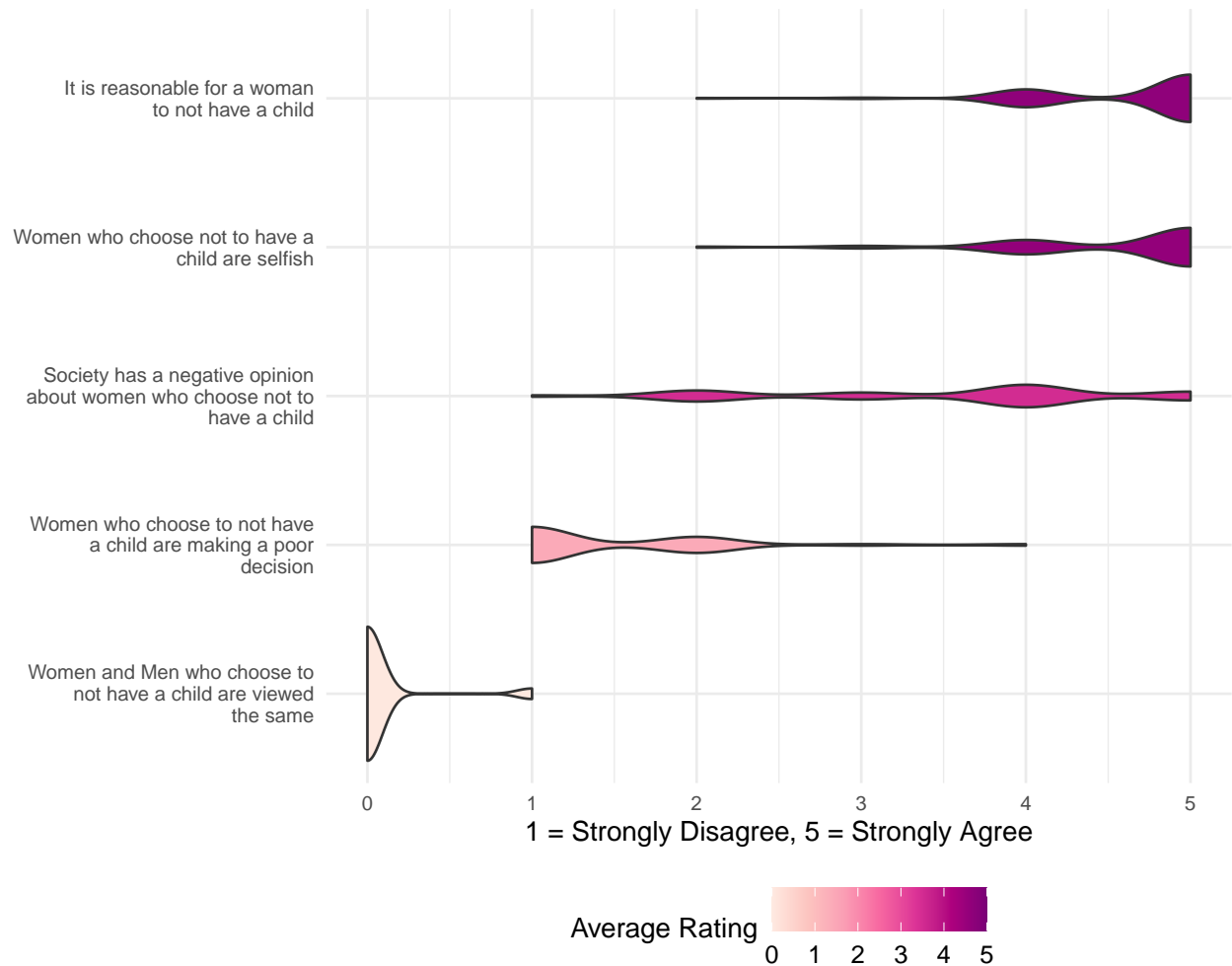
society <- society %>%
  group_by(question_text) %>%
  mutate(avg_extent = mean(extent))

ggplot(society, aes(x = extent, y = reorder(question_text, extent, mean), fill = avg_extent)) +
  geom_violin() +
  labs(title = "Societal Factors",
    subtitle = "To what extent do the following reasons influence a woman's decision to not have a child",
    x = "1 = Strongly Disagree, 5 = Strongly Agree",
    y = element_blank(),
    fill = "Average Rating") +
  scale_fill_distiller(palette = "RdPu", direction = 1, limits = c(0, 5)) +
  scale_y_discrete(labels = function(x) stringr::str_wrap(x, width = 30)) +
```

```
theme_minimal() +
theme(legend.position = "bottom",
      legend.text=element_text(size=10),
      axis.text=element_text(size=8),
      plot.title=element_text(size=12),
      plot.subtitle=element_text(size=10))
```

Societal Factors

To what extent do the following reasons influence a woman's decision to not have a



```
question_nums <- unique(financial$question)
question_text <- c("Financial Instability", "Childcare Costs", "Judgement because of a Decision based on")

financial$question_text <- plyr::mapvalues(financial$question,
                                           from = question_nums,
                                           to = question_text)

financial <- financial %>%
  group_by(question_text) %>%
  mutate(avg_extent = mean(extent))

ggplot(financial, aes(x = extent, y = reorder(question_text, extent, mean), fill = avg_extent)) +
  geom_violin() +
```



```
labs(title = "Financial Factors",
      subtitle = "To what extent do the following reasons influence a woman's decision to not have a child",
      scale_fill_distiller(palette = "RdPu", direction = 1, limits = c(0, 5)) +
      scale_y_discrete(labels = function(x) stringr::str_wrap(x, width = 30)) +
      theme_minimal() +
      theme(legend.position = "bottom",
            legend.text=element_text(size=10),
            axis.text=element_text(size=8),
            plot.title=element_text(size=12),
            plot.subtitle=element_text(size=10))
```

