Week1_Assigment_Raj_Ponnam.R

December 4, 2022

[8]:
```
# Imports
library('magrittr')
library('ggplot2')
```

[2]:
```
# Read the excel file.
obama_approval_df = xlsx::read.xlsx('/Users/rajponnam/Documents/ds_course/
↪dsc640/Week1/obama-approval-ratings.xls', sheetIndex = 1, stringsAsFactors =␣
↪FALSE)
```

[3]:
```
# Print the data.
obama_approval_df
```

A data.frame: 13 × 4

Issue <chr>	Approve <dbl>	Disapprove <dbl>	None <dbl>
Race Relations	52	38	10
Education	49	40	11
Terrorism	48	45	7
Energy Policy	47	42	11
Foreign Affairs	44	48	8
Environment	43	51	6
Situation in Iraq	41	53	6
Taxes	41	54	5
Healthcare Policy	40	57	3
Economy	38	59	3
Situation in Afghanistan	36	57	7
Federal Budget Deficit	31	64	5
Immigration	29	62	9

1 Stacked Bar Chart

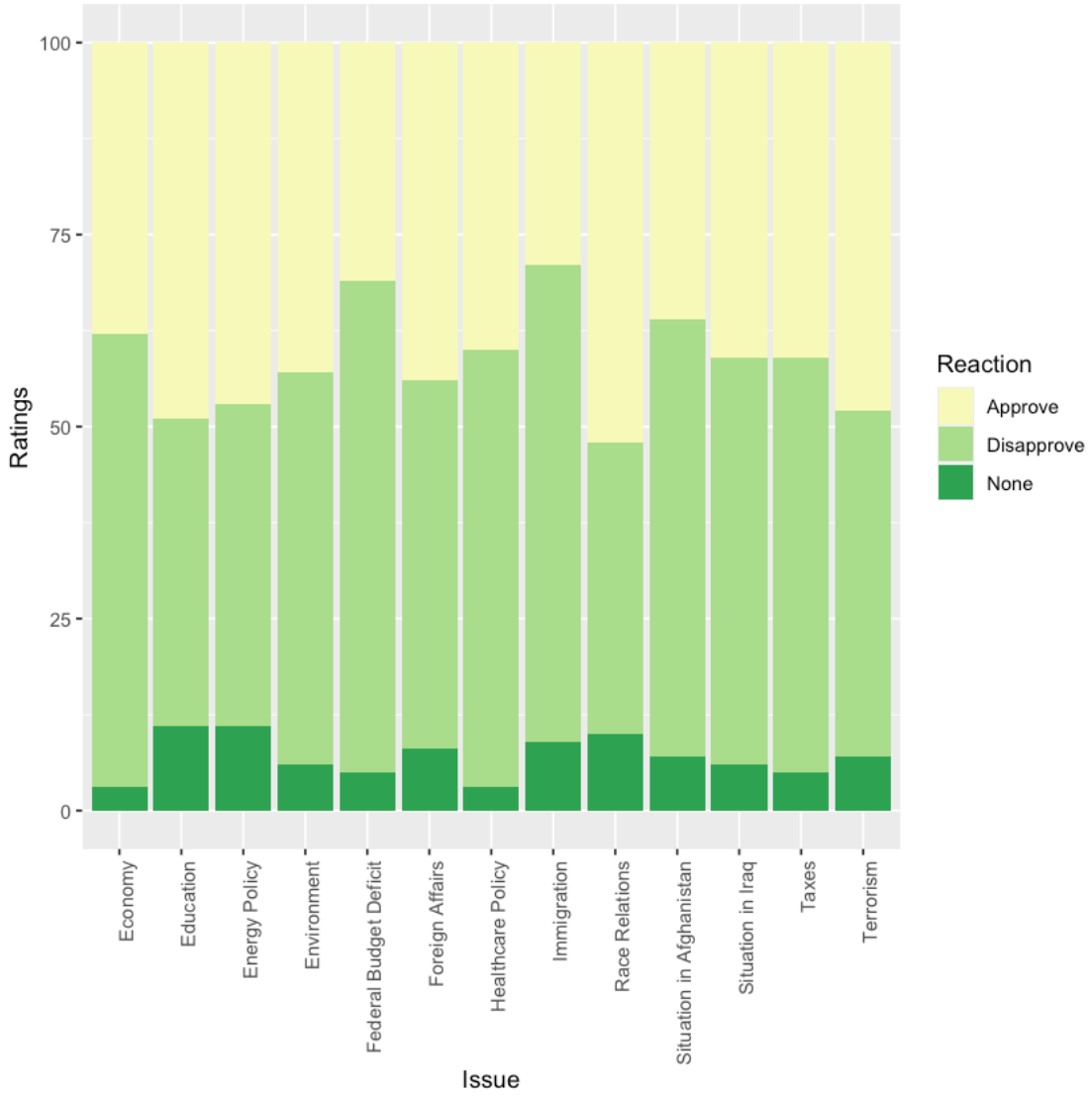
For this, I will plot each issue with their respective Approval, Disapproval and Neutral counts. This will generate a 100% stacked bar chart for each issue, so that the reactions are rightfully captured.

[4]:
```
obama_approval_df_long = obama_approval_df %>% tidyr::
↪gather('Reaction','Ratings', Approve, Disapprove, None)
```

[9]:
```

```

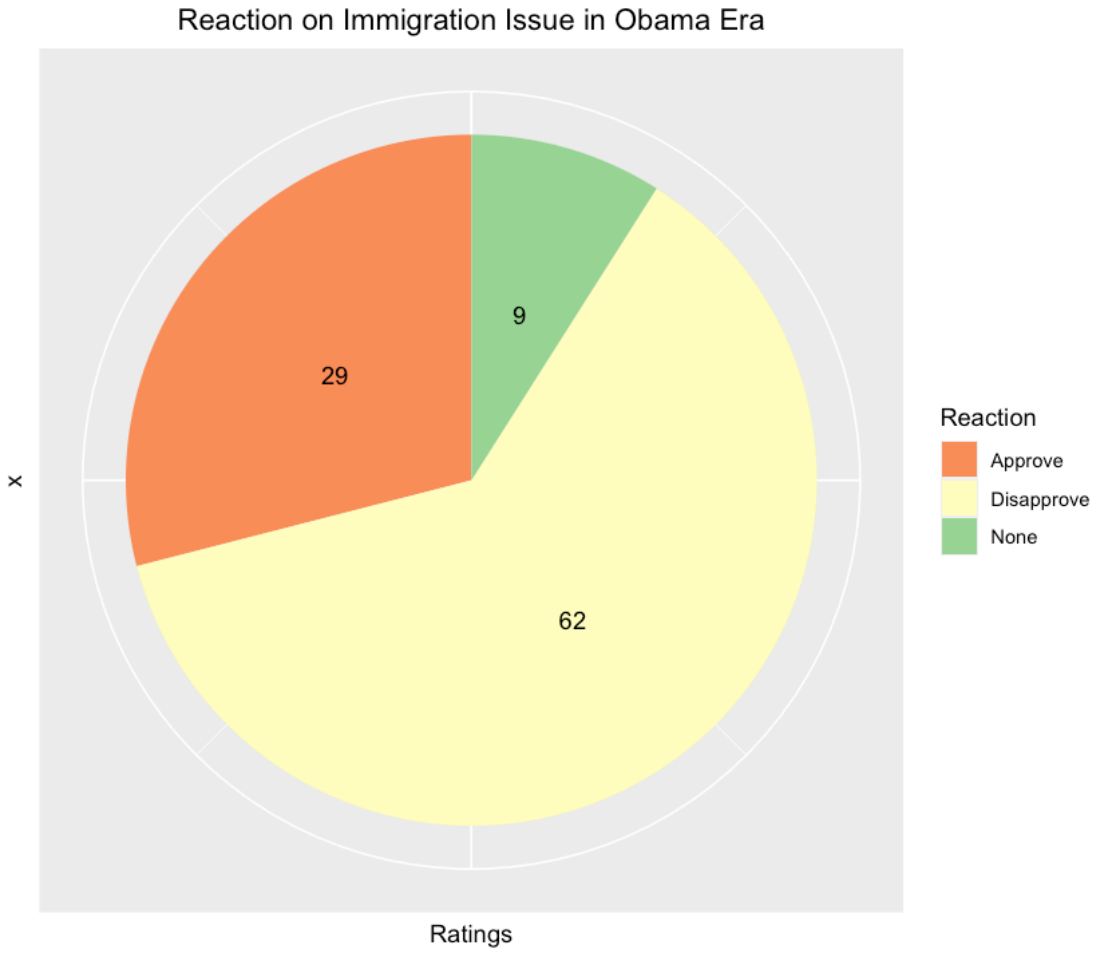
```
# Plot stacked
ggplot2::ggplot(data = obama_approval_df_long, ggplot2::aes(x = Issue, y =␣
↪Ratings, fill = Reaction)) +
    ggplot2:: geom_bar(stat='identity') +
    ggplot2::theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
    ggplot2::scale_fill_brewer(palette = 15)
```



2 Pie Chart

For pie chart demonstration, I would like to pick the Immigration issue and plot the different ratings in a pie.

[20]:
```
# For this purpose, I would need the long data set. Because we need the stacked␣
 ↪chart before creating pie chart from it
# Since pie chart is not easy to digest, I would NOT use the same color family␣
 ↪for the different sections
obama_approval_df_long %>%
    dplyr::filter(Issue=='Immigration') %>%
    ggplot2::ggplot(ggplot2::aes(x="", y=Ratings, fill=Reaction))+
        ggplot2::geom_bar(width = 1, stat = 'identity') +
        ggplot2::coord_polar('y', start=0) +
        ggplot2::geom_text(aes(label = Ratings), position =␣
 ↪position_stack(vjust = 0.5)) +
        ggplot2::ggtitle(label = 'Reaction on Immigration Issue in Obama Era') +
        ggplot2::scale_fill_brewer(palette='Spectral') +
        ggplot2::theme(axis.line = element_blank(),
          axis.text = element_blank(),
          axis.ticks = element_blank(),
          plot.title = element_text(hjust = 0.5))
```

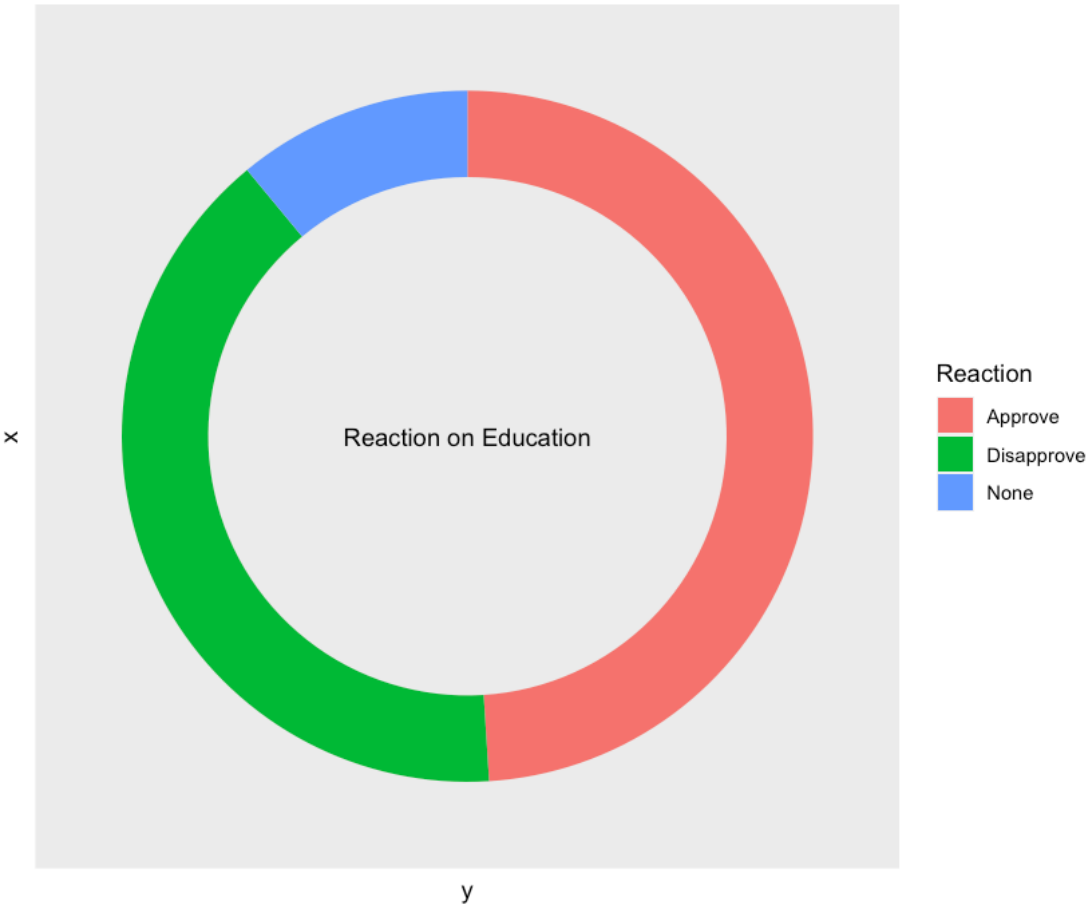


3 Donut Chart

For donut chart demonstration, I would like to pick the Education issue and plot the different ratings in the shape of a ring/donut.

[26]:
```
obama_approval_df_long %>%
    dplyr::filter(Issue=='Education') %>%
    dplyr::mutate(ymax=cumsum(Ratings),
                  ymin=c(0,ymax[1:length(ymax)-1])) %>%
    ggplot2::ggplot(ggplot2::aes(fill=Reaction, ymax=ymax, ymin=ymin, xmax=4,␣
↪xmin=3)) +
        ggplot2::geom_rect() +
```

```
        ggplot2::coord_polar(theta='y') +
        ggplot2::xlim(c(0, 4)) +
        ggplot2::theme(panel.grid=element_blank()) +
        ggplot2::theme(axis.text=element_blank()) +
        ggplot2::theme(axis.ticks=element_blank()) +
        ggplot2::annotate('text', x = 0, y = 0, label = 'Reaction on␣
↪Education') +
        ggplot2::labs(title='')
```



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