

West Bengal Assembly Election Outcomes

Onkar Singh

2021-05-10

```
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 4.0.3
```

```
## -- Attaching packages ----- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.3    v purrr  0.3.4
## v tibble  3.1.0    v dplyr  1.0.5
## v tidyr   1.1.2    v stringr 1.4.0
## v readr   1.3.1    v forcats 0.5.0
```

```
## Warning: package 'ggplot2' was built under R version 4.0.3
```

```
## Warning: package 'tibble' was built under R version 4.0.4
```

```
## Warning: package 'tidyr' was built under R version 4.0.3
```

```
## Warning: package 'dplyr' was built under R version 4.0.4
```

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

```
library(readxl)
library(scales)
```

```
##
```

```
## Attaching package: 'scales'
```

```
## The following object is masked from 'package:purrr':
```

```
##
```

```
##     discard
```

```
## The following object is masked from 'package:readr':
```

```
##
```

```
##     col_factor
```

```
theme_set(theme_light(base_size = 16))
library(ggrepel)
```

```
## Warning: package 'ggrepel' was built under R version 4.0.3
```

```
library(esquisse)
```

```
## Warning: package 'esquisse' was built under R version 4.0.5
```

```
library(modeldata)
```

```
## Warning: package 'modeldata' was built under R version 4.0.3
```

Reading data

```
wb <- read_csv("TCPD_AE_West_Bengal_2021-5-10.csv") %>%
  janitor::clean_names()
```

```
## Parsed with column specification:
## cols(
##   .default = col_double(),
##   Election_Type = col_character(),
##   State_Name = col_character(),
##   Candidate = col_character(),
##   Sex = col_character(),
##   Party = col_character(),
##   Candidate_Type = col_logical(),
##   Constituency_Name = col_character(),
##   Constituency_Type = col_character(),
##   Sub_Region = col_character(),
##   Deposit_Lost = col_character(),
##   pid = col_character(),
##   Party_Type_TCPD = col_logical(),
##   Party_ID = col_logical(),
##   last_poll = col_logical(),
##   Last_Party = col_character(),
##   Last_Party_ID = col_logical(),
##   Last_Constituency_Name = col_character(),
##   Same_Constituency = col_logical(),
##   Same_Party = col_logical(),
##   Turncoat = col_logical()
##   # ... with 3 more columns
## )
```

```
## See spec(...) for full column specifications.
```

```
# data("presidential")
# data("mpg")
# data("drinks")
# esquisser(viewer = "browser")
#
# esquisse::esquisser(presidential)
```

```
wb %>% count(party, sort = T)
```

```
## # A tibble: 60 x 2
##   party          n
##   <chr>        <int>
## 1 IND          611
## 2 NOTA         292
## 3 BJP          291
## 4 AITC         288
## 5 SUCI         188
## 6 BSP          162
## 7 CPM          138
## 8 INC           91
## 9 Bahujan Mukti Party 45
## 10 Amra Bangalee    40
## # ... with 50 more rows
```

```
wb %>%
```

```
  filter(party != "NOTA") %>%
  count(party, name = "number_of_seats_contested" , sort = T)
```

```
## # A tibble: 59 x 2
##   party          number_of_seats_contested
##   <chr>                <int>
## 1 IND          611
## 2 BJP          291
## 3 AITC          288
## 4 SUCI          188
## 5 BSP           162
## 6 CPM           138
## 7 INC            91
## 8 Bahujan Mukti Party 45
## 9 Amra Bangalee    40
## 10 RSSCMJP        32
## # ... with 49 more rows
```

A total of 59 political parties took part in West Bengal assembly election 2021. Top 10 Parties with number of seats contested

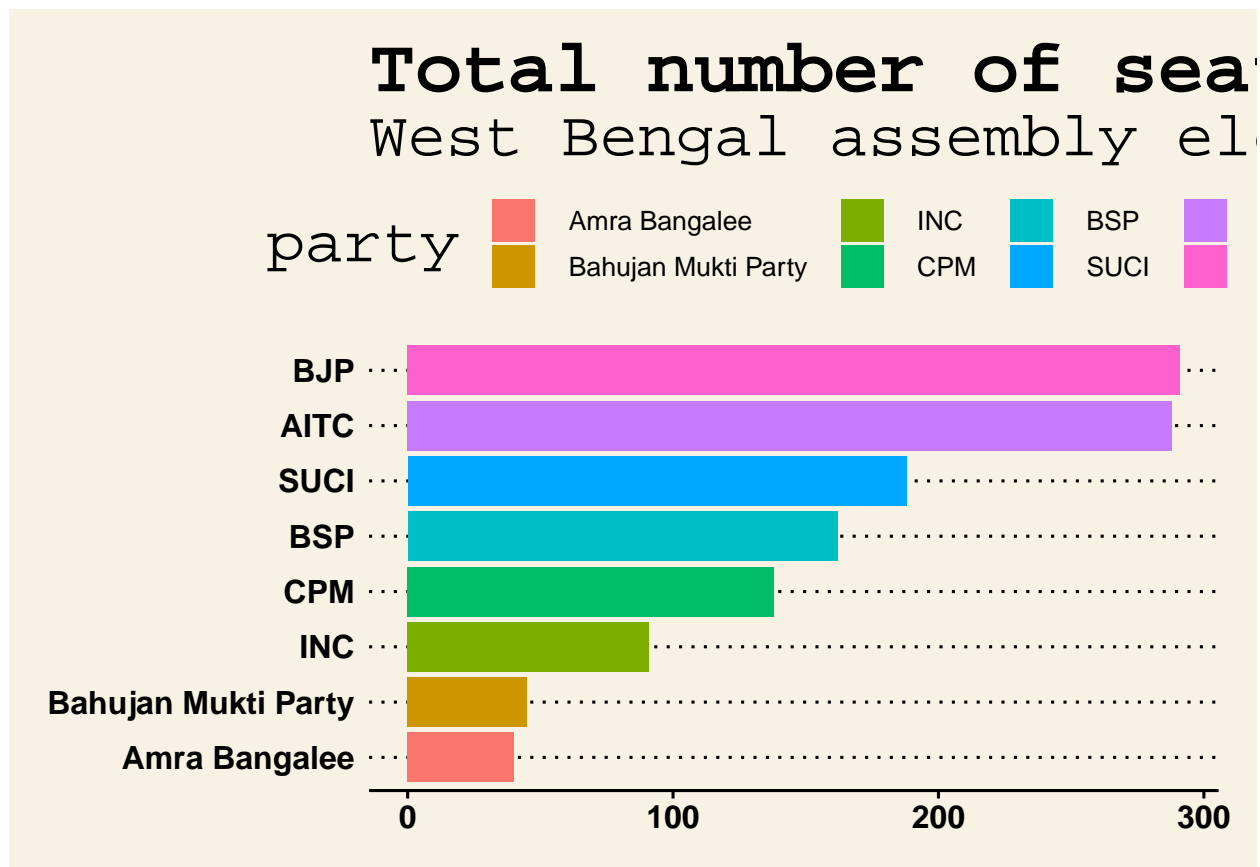
```
wb <- wb %>%
  filter(party != "NOTA")
```

```
wb%>%
```

```

filter(party != "IND") %>%
count(party, name = "number_of_seats_contested" , sort = T) %>%
head(8) %>%
mutate(party = fct_reorder(party, number_of_seats_contested)) %>%
ggplot(aes(y = party, x = number_of_seats_contested, fill = party))+
geom_col() +
labs(title = "Total number of seats contested by top 20 political parties",
      subtitle = "West Bengal assembly election, April-May 2021",
      x = "Total number of seats contested",
      y = "Political parties"
    ) +
theme(legend.position = "none") +
ggthemes::theme_wsj()

```



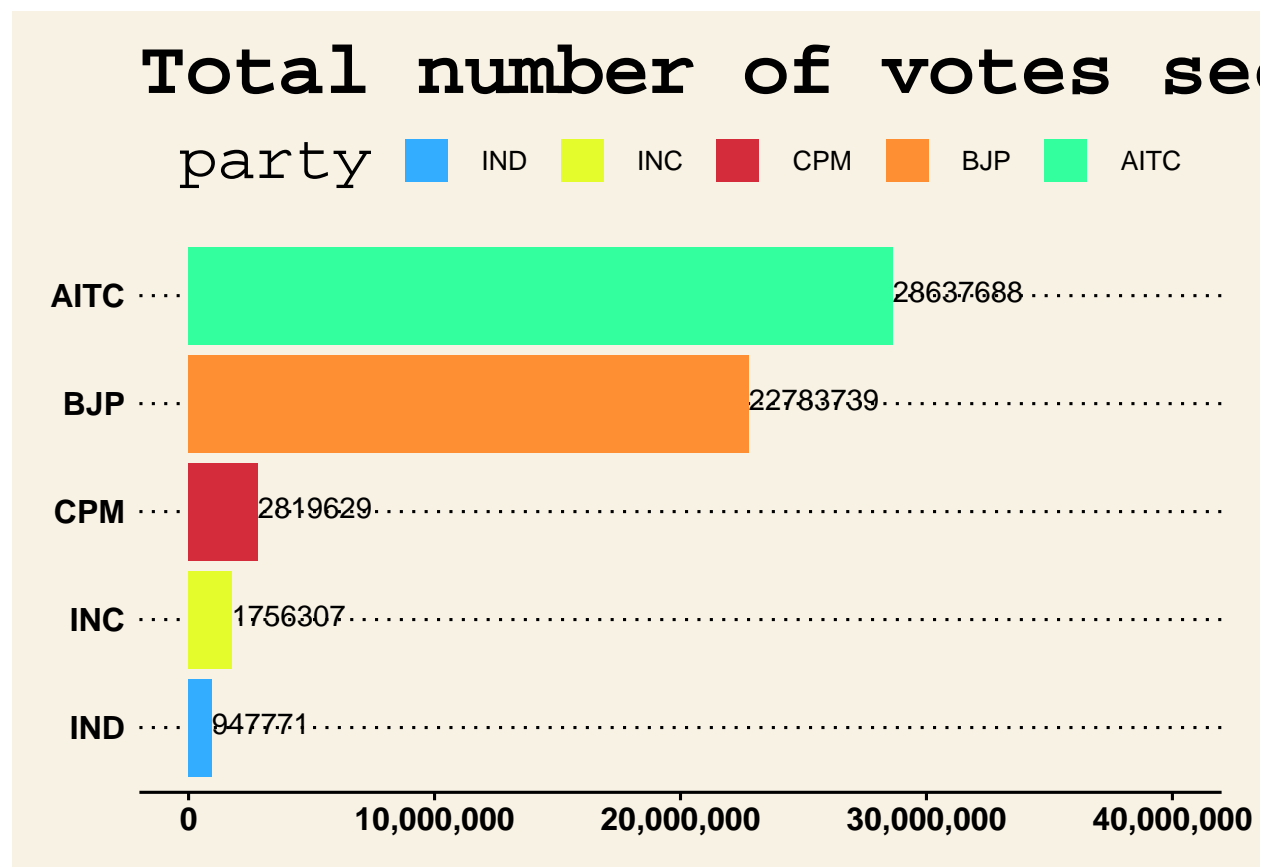
Total number of Votes secured by each political party

```

wb_total_percent <- wb %>%
  group_by(party) %>%
  summarize(total_votes = sum(votes)) %>%
  mutate(percent_votes = total_votes/sum(total_votes))

```

```
wb_total_percent%>%
  arrange(desc(total_votes)) %>%
  head(5) %>%
  mutate(party = fct_reorder(party, total_votes)) %>%
  ggplot(aes(total_votes, party, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", CPM = "#D52C3C", INC = "#FFD500")) +
  scale_x_continuous(labels = scales::comma) +
  geom_text(aes(label = (total_votes), hjust = 0.001, vjust = 0.3)) +
  coord_cartesian(xlim = c(0, 40000000)) +
  ggthemes::theme_wsj() +
  labs(title = "Total number of votes secured",
       x = "Total number of votes",
       y = "Political parties")
```

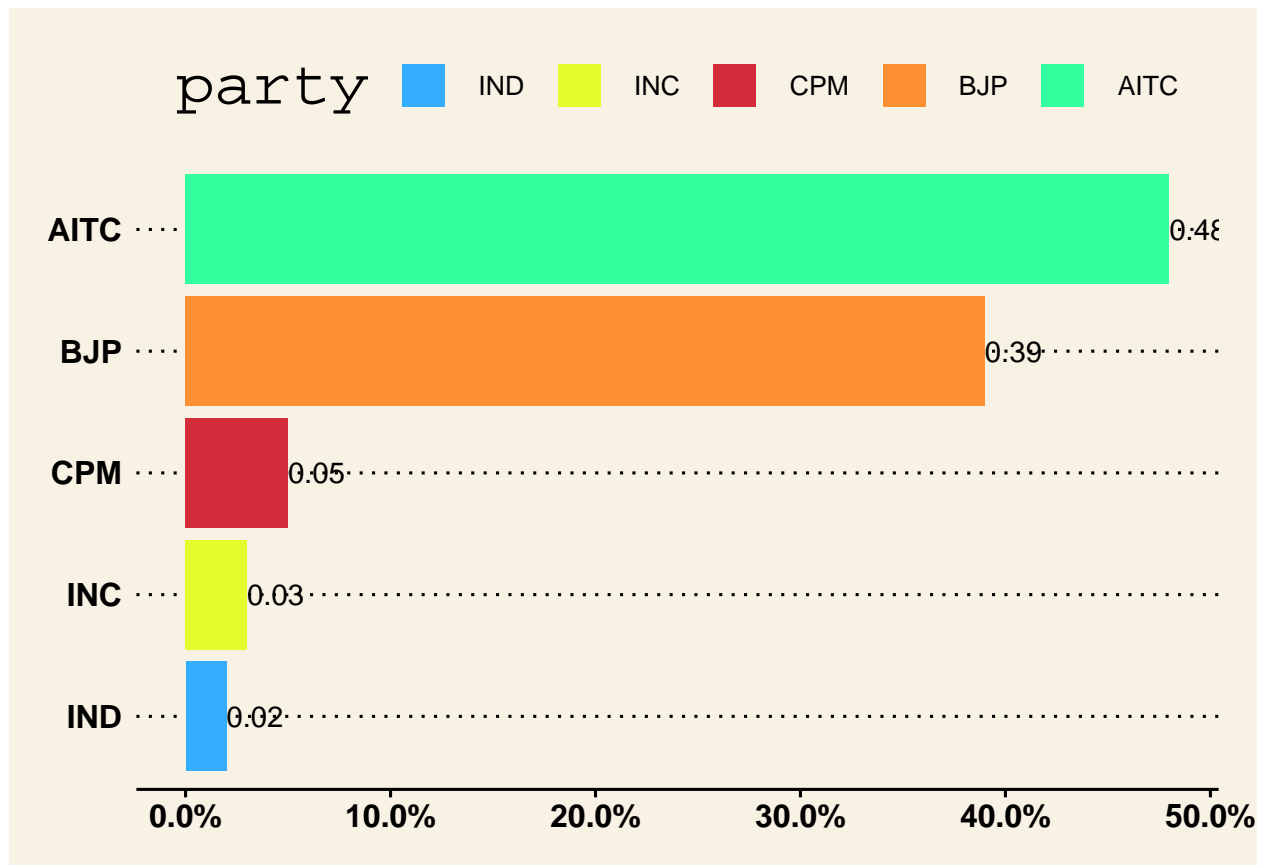


Total percentage of Votes secured by each political party

```
wb_total_percent <- wb_total_percent%>%
  arrange(desc(percent_votes)) %>%
  head(10) %>%
  mutate(percent_votes = round(percent_votes, 2))

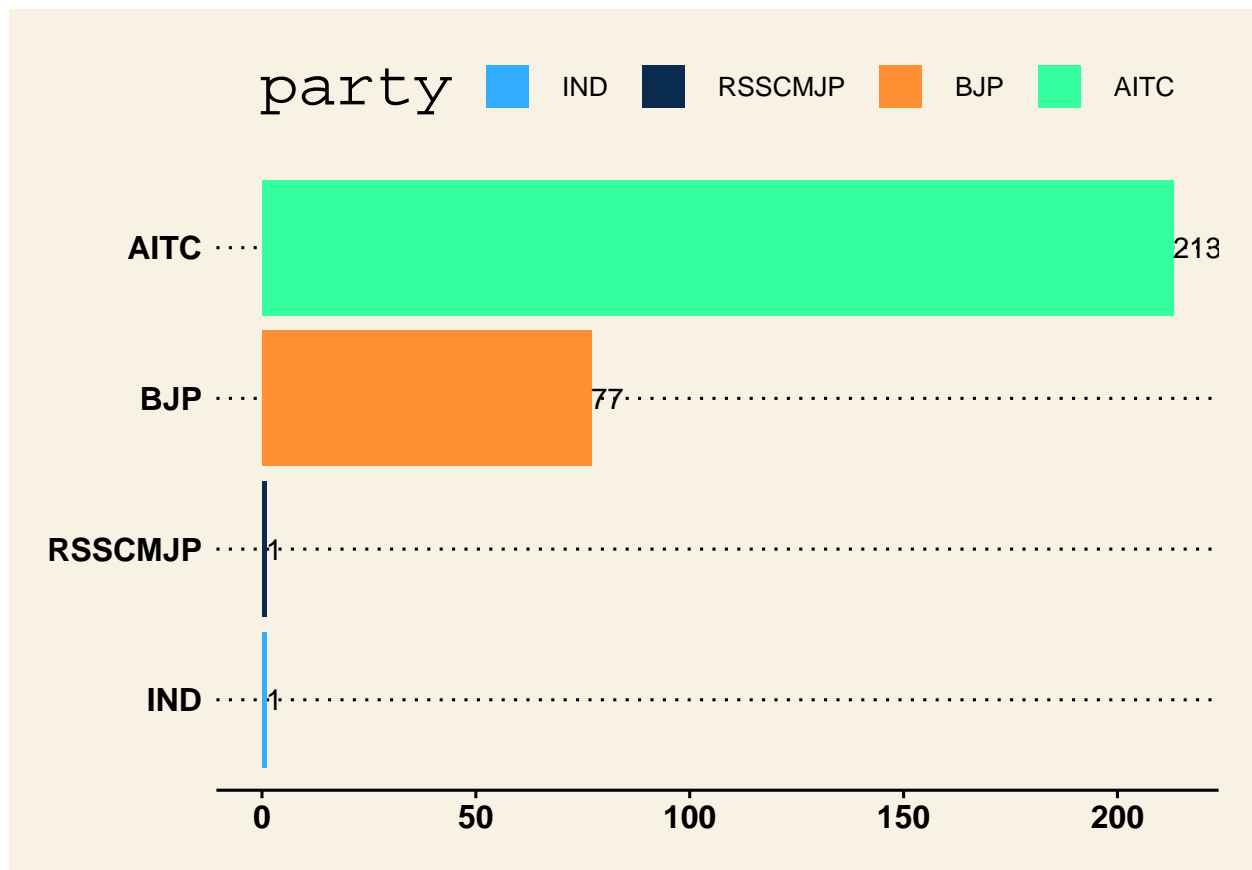
wb_total_percent %>%
  head(5) %>%
  mutate(party = fct_reorder(party, percent_votes)) %>%
```

```
ggplot(aes(percent_votes, party, fill = party)) +
  geom_col() +
  scale_x_continuous(labels = scales::percent) +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", CPM = "#D52C3C", INC = "#FFD700")) +
  geom_text(aes(label = percent_votes), hjust = 0.001) +
  ggthemes::theme_wsj()
```



Total number of seats secured by each political party

```
wb %>%
  filter(position == 1) %>%
  count(party, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E", INC = "#FFD700")) +
  geom_text(aes(label = n), hjust = 0.001) +
  ggthemes::theme_wsj()
```

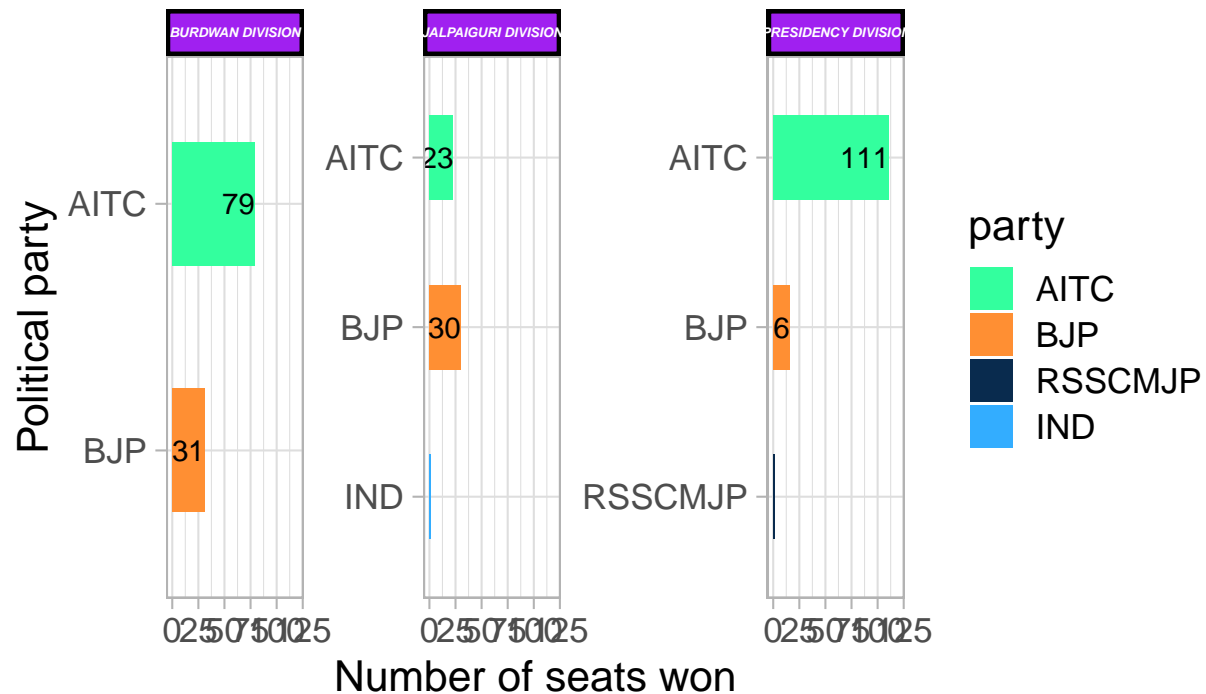


Total number of seats secured by each political party by region

```
wb %>%
  filter(position == 1) %>%
  count(party, sub_region, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col(width = 0.5) +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E"
  geom_text(aes(label = n), color = "black", hjust = 1, vjust = 0.5) +

  facet_wrap(~sub_region, scales = "free_y") +
  theme(strip.text = element_text(
    size = 5, color = "white", face = "bold.italic"
  ),
    strip.background = element_rect(
    color="black", fill="purple", size=1.5, linetype="solid"
  )) +
  coord_cartesian(xlim = c(0, 120)) +
  labs(title = "Number of seats won by parties in each region",
    subtitle = "2021 assembly election",
    x = "Number of seats won",
    y = "Political party") +
  guides(fill = guide_legend(reverse=TRUE))
```

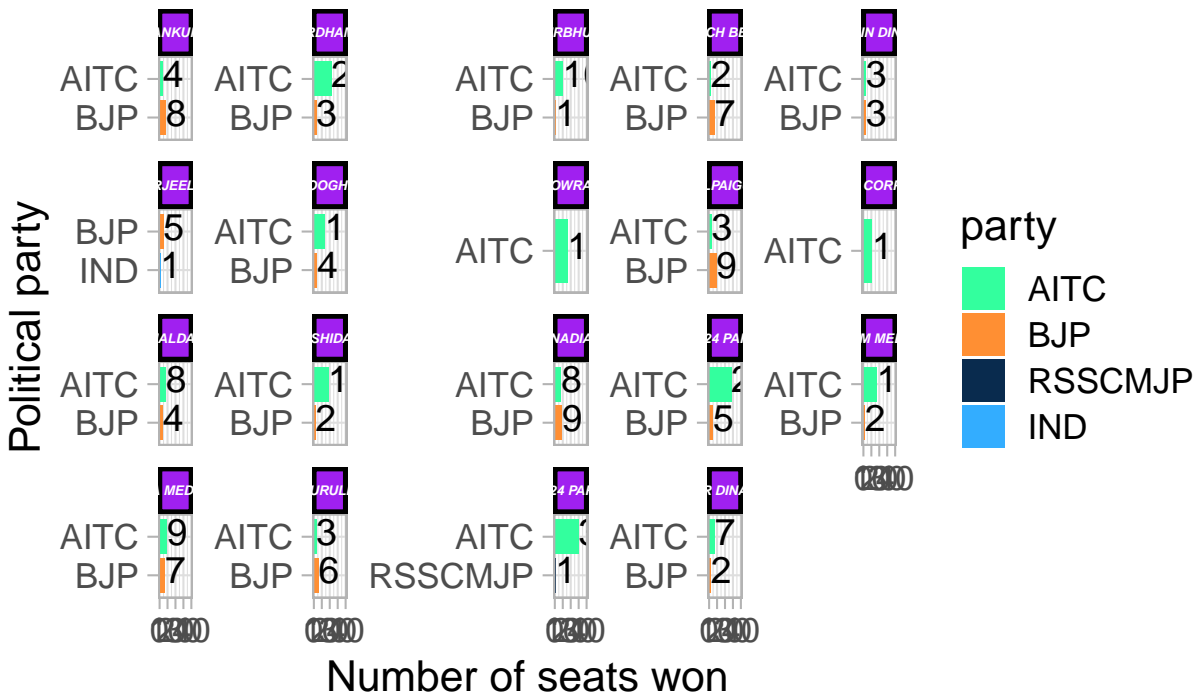
Number of seats won by parties in each region 2021 assembly election



Total number of seats secured by each political party by district

```
wb %>%
  filter(position == 1) %>%
  count(party, district_name, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E",
  geom_text(aes(label = n), hjust = 0.001, vjust = 0.3, size = 5) +
  facet_wrap(~district_name, scales = "free_y") +
  theme(strip.text = element_text(
    size = 5, color = "white", face = "bold.italic"
  ),
    strip.background = element_rect(
    color="black", fill="purple", size=1.5, linetype="solid"
  )) +
  coord_cartesian(xlim = c(0, 40)) +
  labs(title = "Number of seats won by parties in each district",
    subtitle = "2021 assembly election",
    x = "Number of seats won",
    y = "Political party") +
  guides(fill = guide_legend(reverse=TRUE))
```


Number of seats won by parties in each district 2021 assembly election



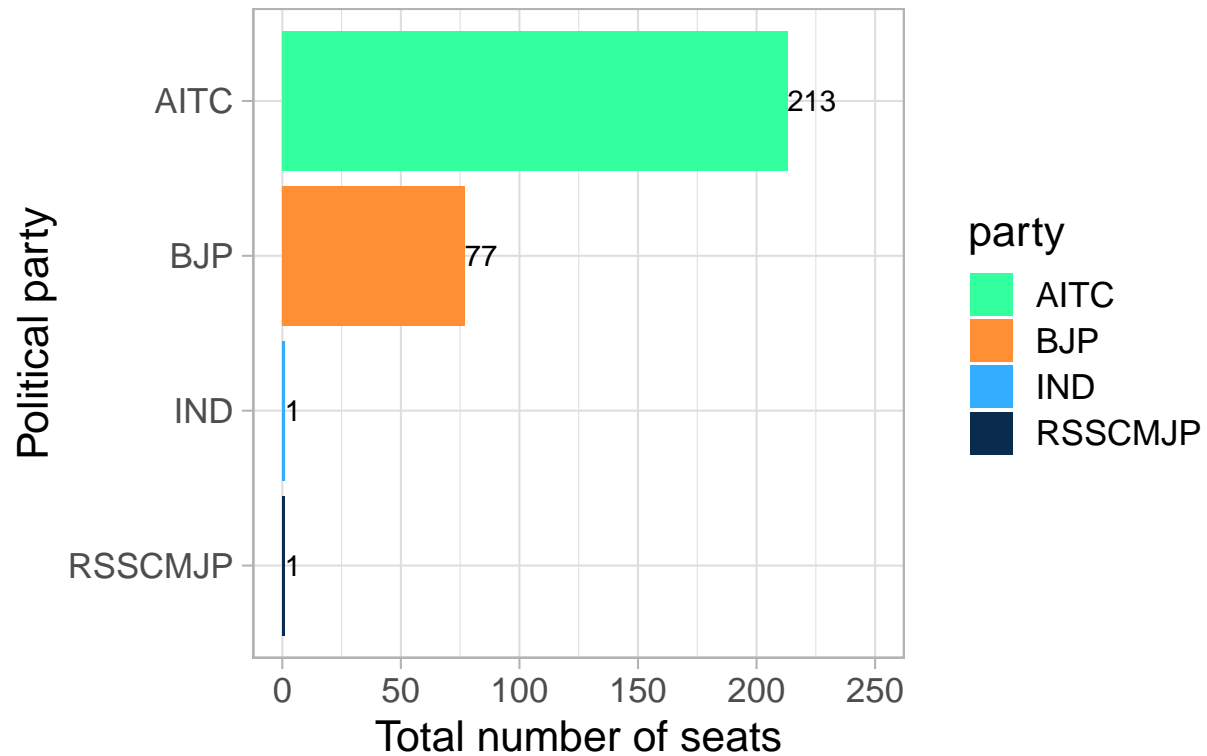
checkout the stuff about freeing scales

Has the voters rewarded the turncoats

```
wb %>%
  filter(position == 1) %>%
  mutate(party = factor(party, levels = c("AITC", "BJP", "RSSCMJP", "IND"))) %>%
  count(party, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col() +
  scale_fill_discrete(breaks=c("AITC", "BJP", "RSSCMJP", "IND"))+
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B41"))
  geom_text(aes(label = n), hjust = 0.001) +
  coord_cartesian(xlim = c(0,250)) +
  labs( title = "Total number of seats won in Assembly",
        x = "Total number of seats",
        y = "Political party") +
  guides(fill = guide_legend(reverse=TRUE))
```

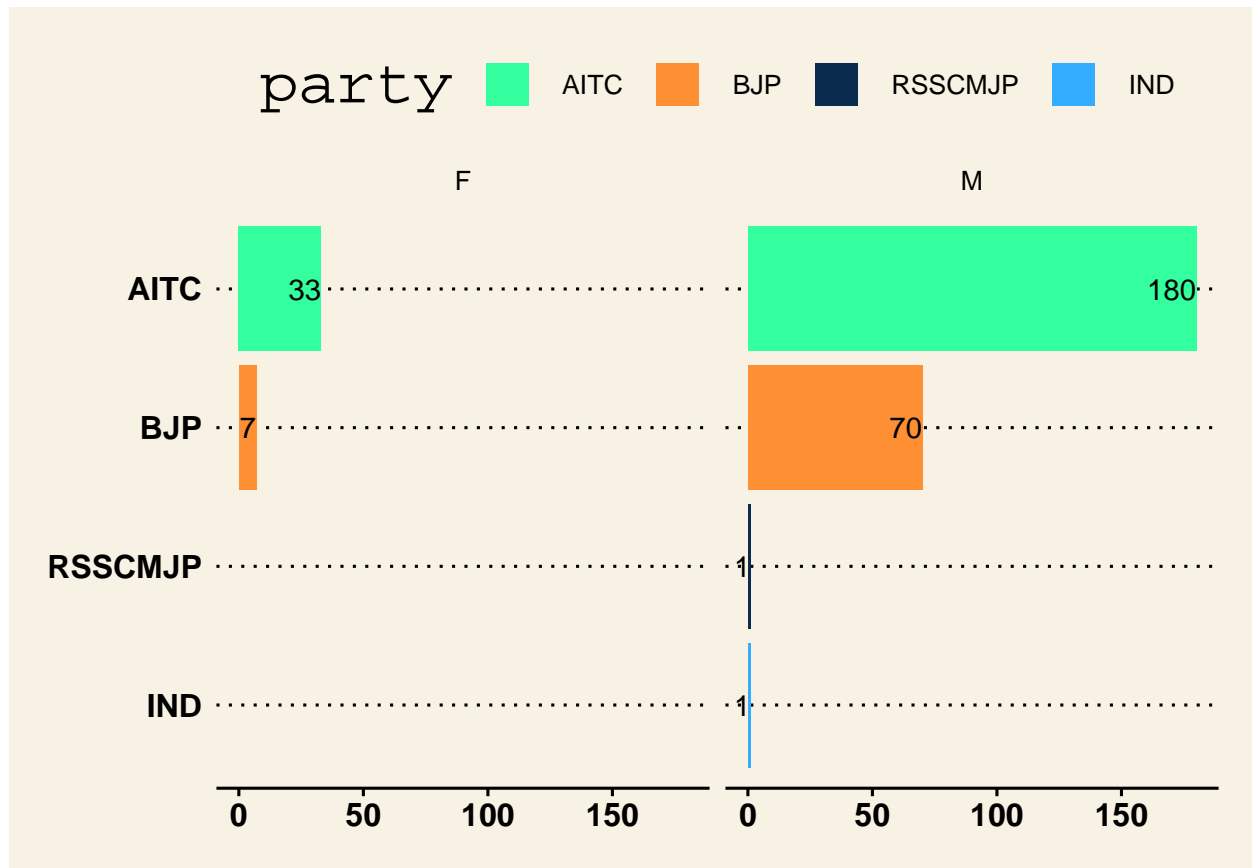
Scale for 'fill' is already present. Adding another scale for 'fill', which
will replace the existing scale.

Total number of seats won in Assembly



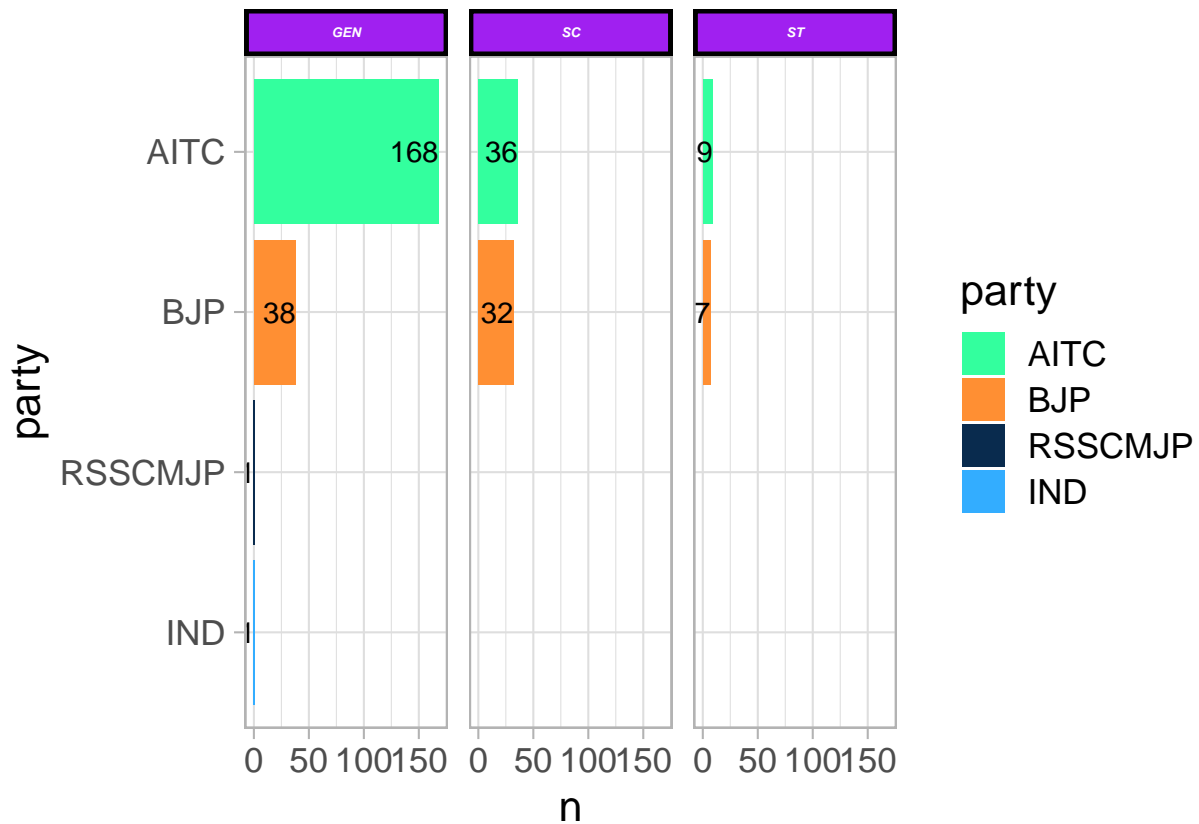
Gender split of candidates Winner candidates by party

```
wb %>%
  filter(position == 1) %>%
  count(party, sex, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col() +
  geom_text(aes(label = n), color = "black", hjust = 1) +
  facet_wrap(~sex) +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E"),
    guides(fill = guide_legend(reverse=TRUE)) +
  ggthemes::theme_ws()
```



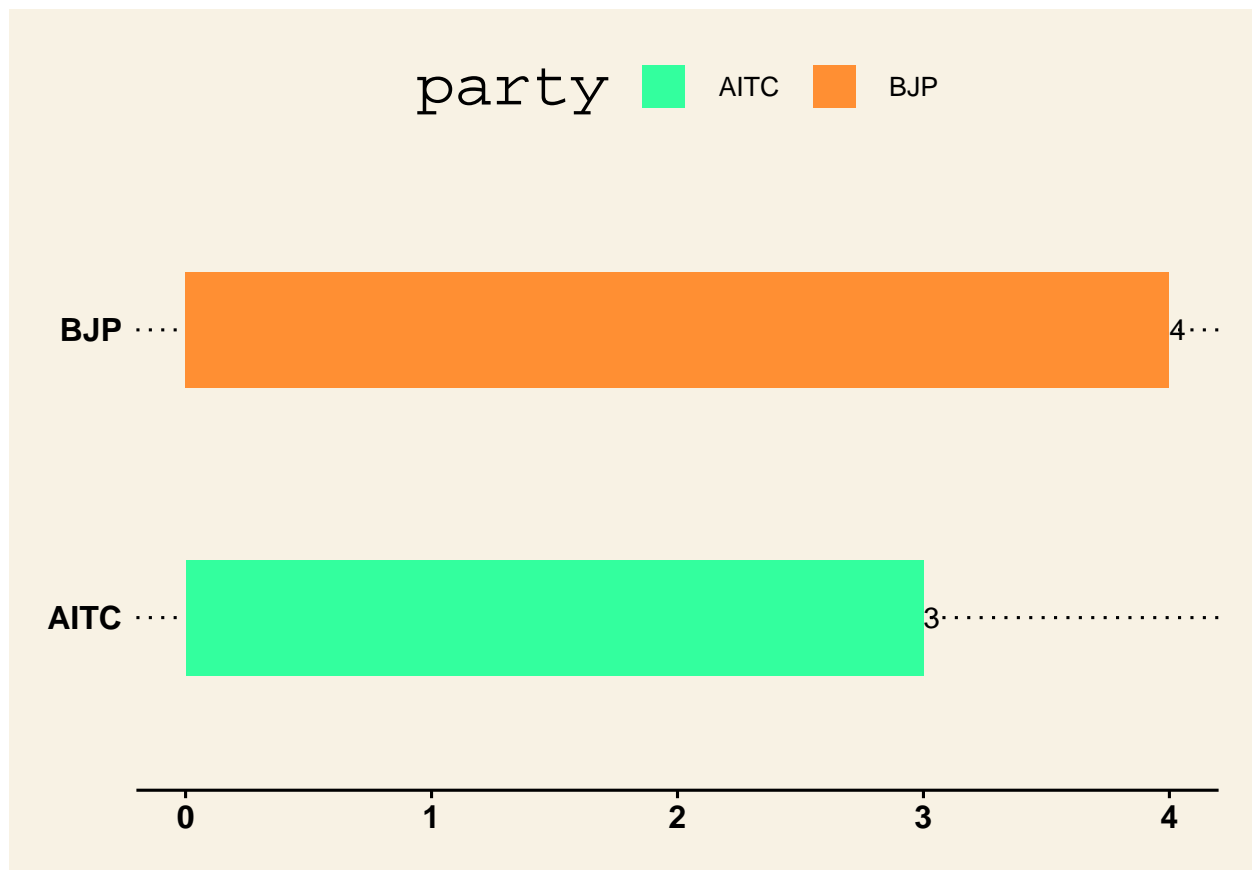
Winner by constituency type

```
wb %>%
  filter(position == 1) %>%
  count(party, constituency_type, sort = T) %>%
  mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E",
                                RSSCMJP = "#092B4E", IND = "#33ADFF", BJP = "#FF8F33", AITC = "#33FF9E" )) +
  geom_text(aes(label = n), color = "black", hjust = 1) +
  facet_grid(~constituency_type ) +
  guides(fill = guide_legend(reverse=TRUE)) +
  theme(strip.text = element_text(
    size = 5, color = "white", face = "bold.italic"
  ),
        strip.background = element_rect(
          color="black", fill="purple", size=1.5, linetype="solid"
        ))
```



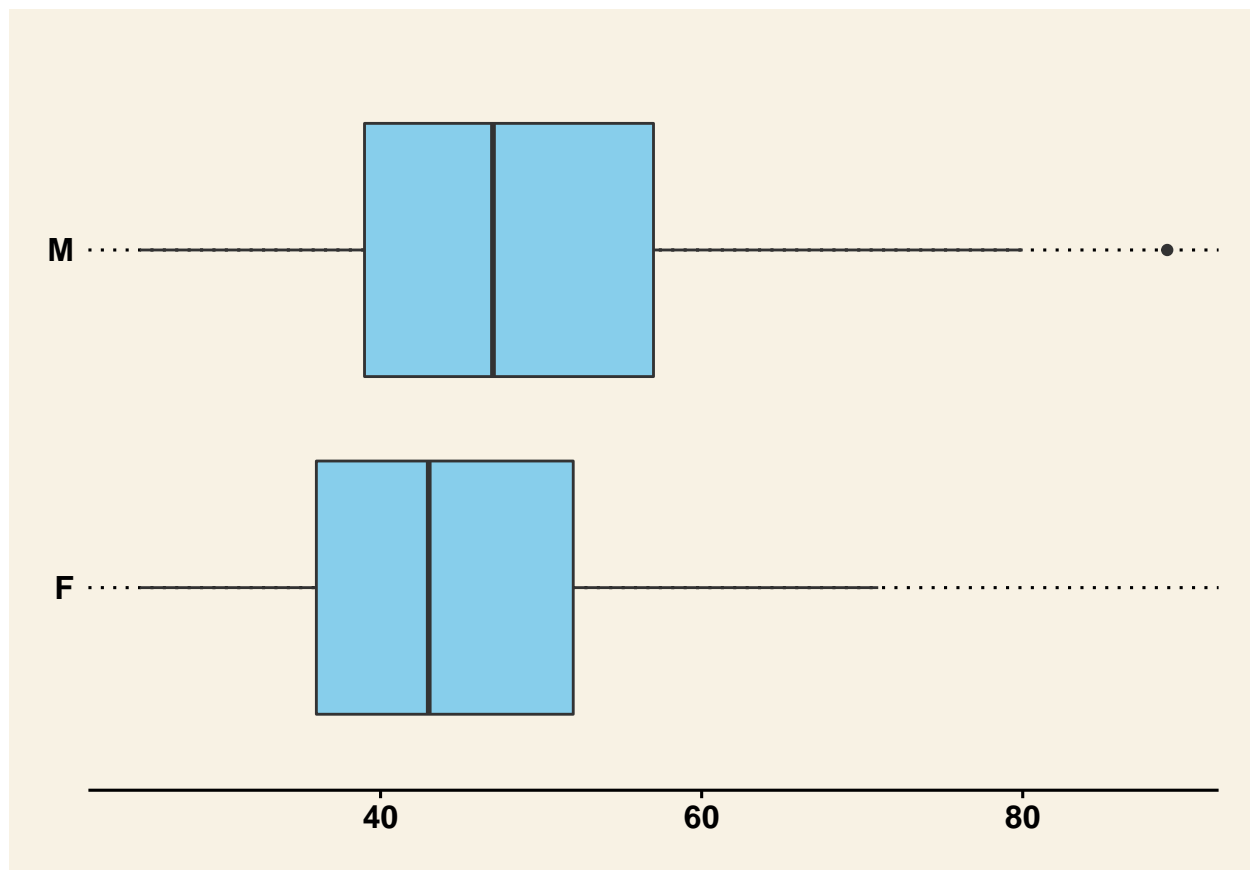
Winner by margin of 1000 or less

```
wb %>%
  filter(position == 1) %>%
  filter(margin <= 1000) %>%
  filter(party %in% c("BJP", "AITC")) %>%
  count(party, sort = T) %>%
  # mutate(party = fct_reorder(party, n)) %>%
  ggplot(aes(n, party, fill = party)) +
  geom_col(width = 0.4) +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33"
  ))+
  geom_text(aes(label = n), color = "black", hjust = 0.001) +
  ggthemes::theme_ws()
```



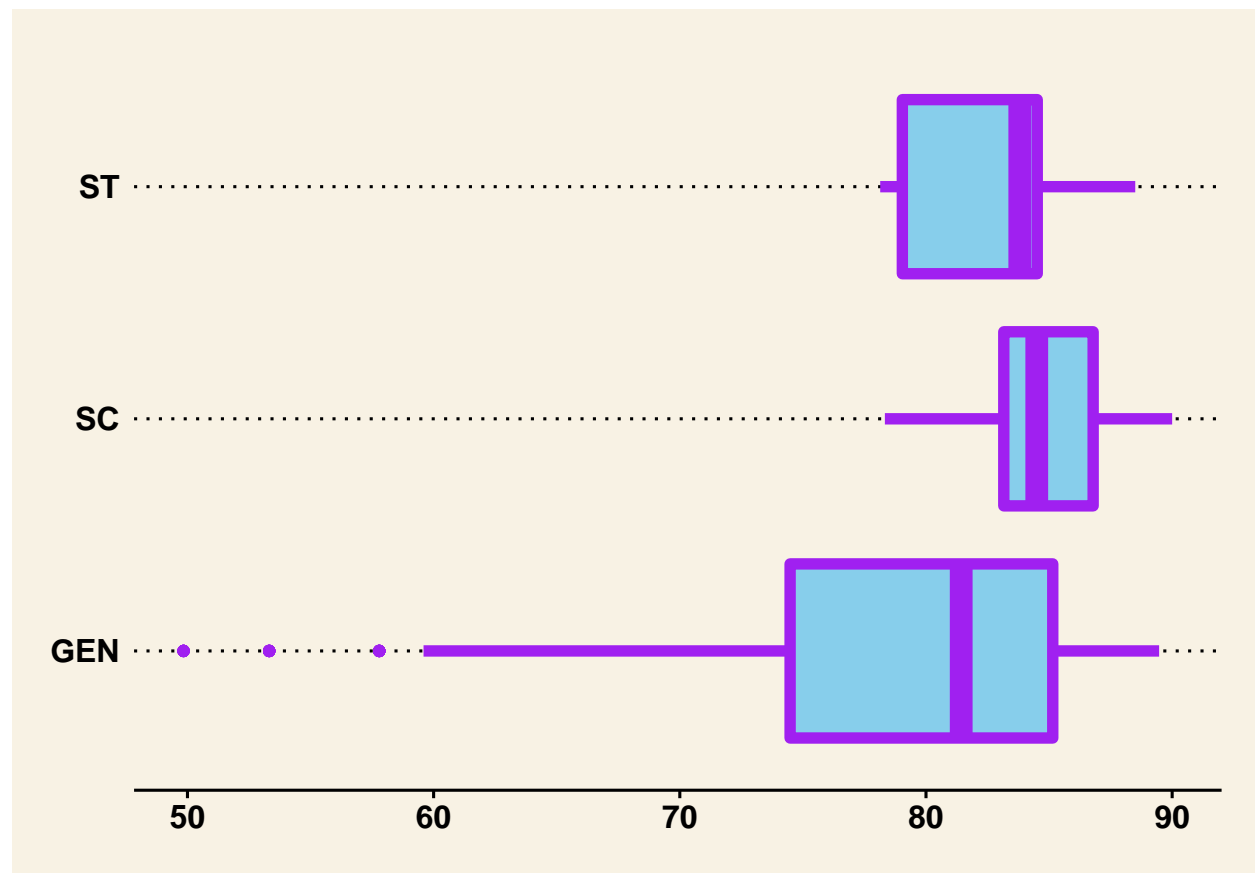
Distribution of Candidates Age by Sex

```
wb %>%  
  ggplot(aes(age, sex  
    )) +  
  # geom_histogram()  
  geom_boxplot(fill = "skyblue") +  
  ggthemes::theme_wsj()
```



Distribution of Voting percentage by constituency type

```
wb %>%  
  ggplot(aes(x = turnout_percentage, y = constituency_type)) +  
  geom_boxplot( size = 2, color = "purple", fill = "sky blue"  
  ) +  
  ggthemes::theme_wsj()
```

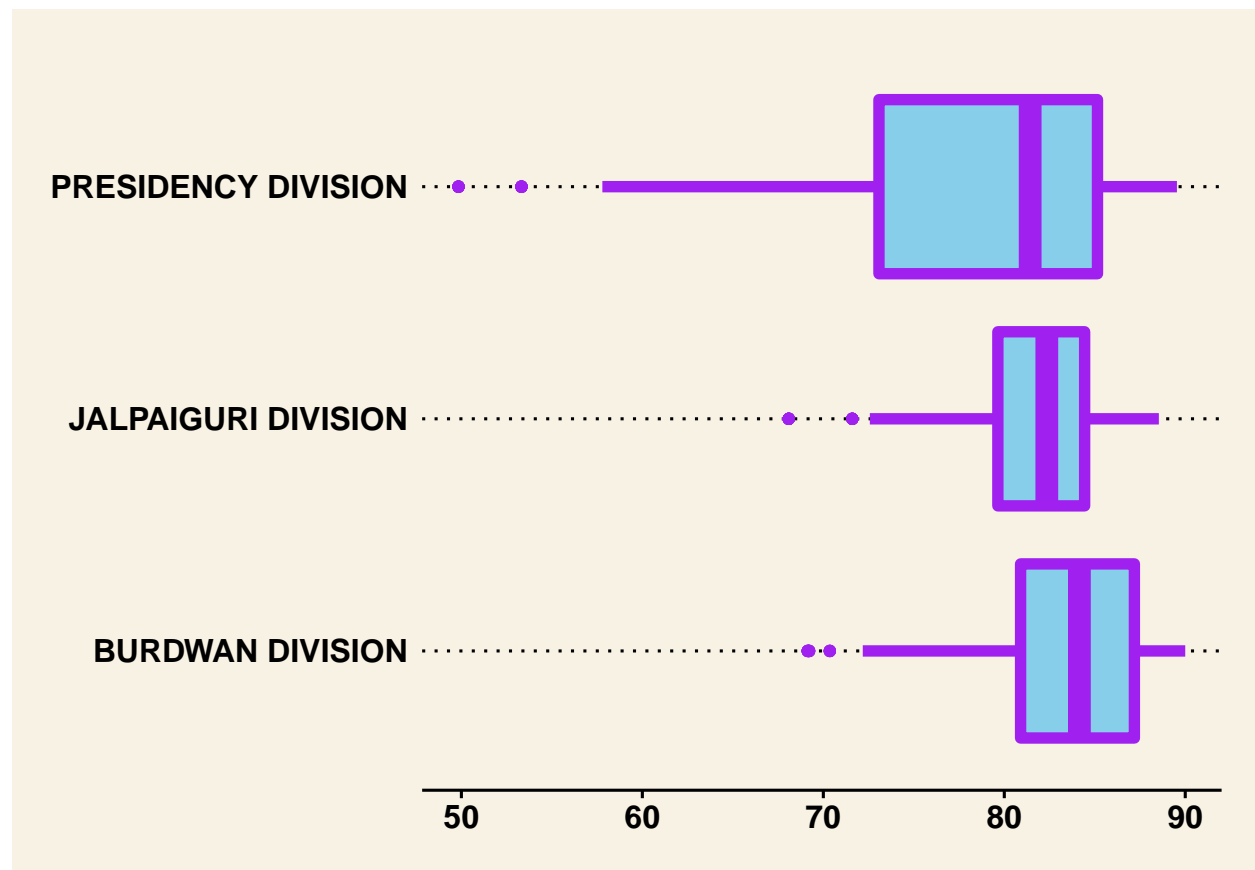


```
# geom_histogram()
```

Distribution of Voting percentage by Sub Region

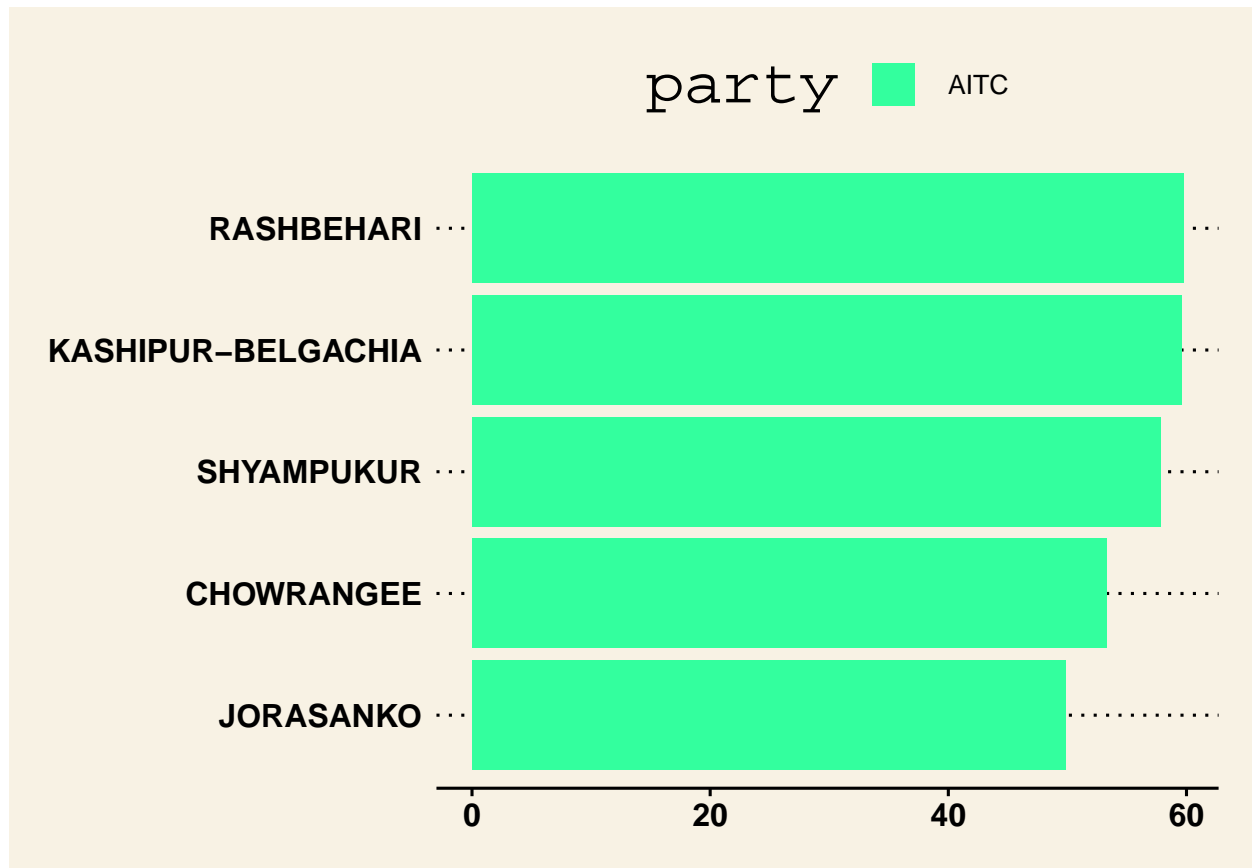
```
wb %>%
  ggplot(aes(x = turnout_percentage, y = sub_region)) +
  geom_boxplot( size = 2, color = "purple", fill = "sky blue"

) +
  ggthemes::theme_wsj()
```



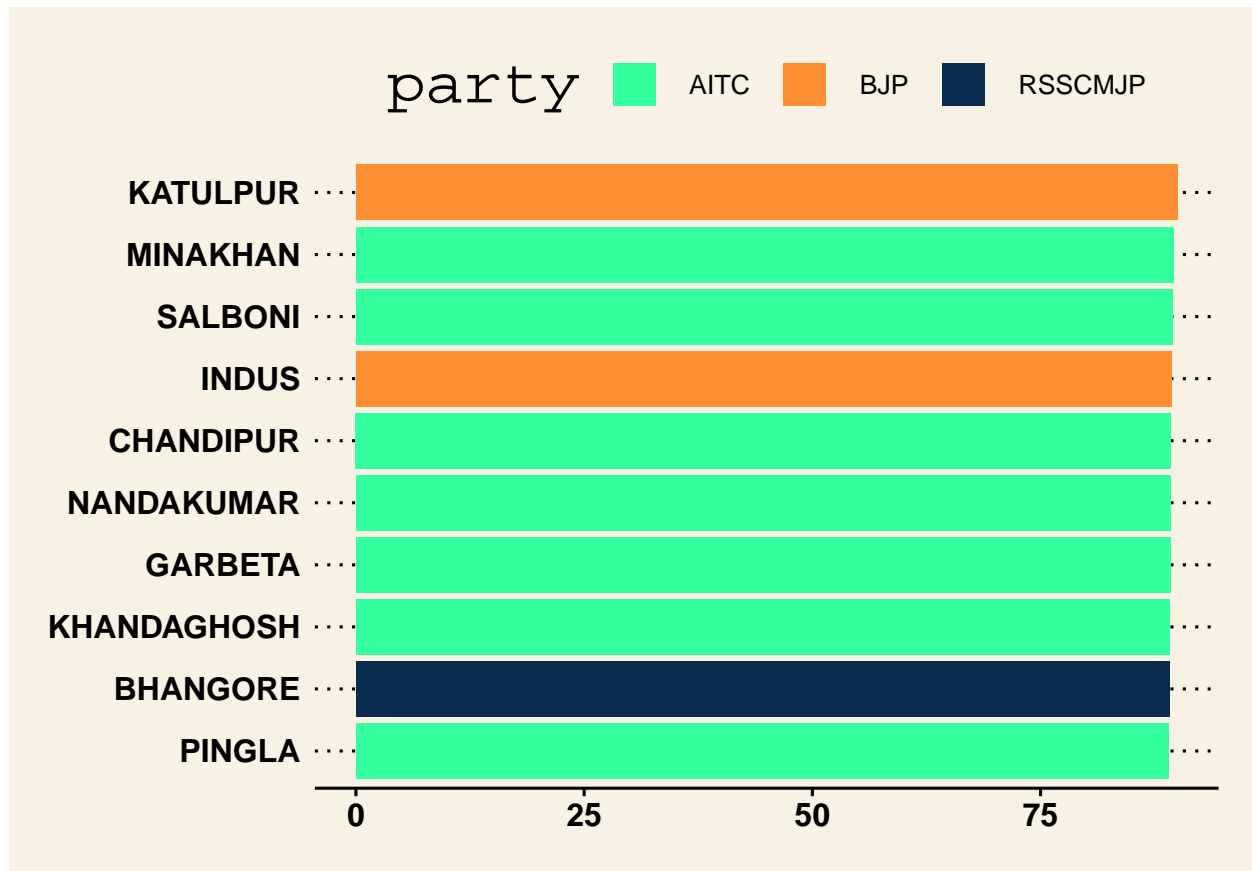
Constituency with lower voter turnout

```
wb %>%
  filter(position == 1) %>%
  filter(turnout_percentage <= 60) %>%
  mutate(constituency_name = fct_reorder(constituency_name, turnout_percentage)) %>%
  ggplot(aes(y = constituency_name, x = turnout_percentage, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E")) +
  ggthemes::theme_wsj()
```

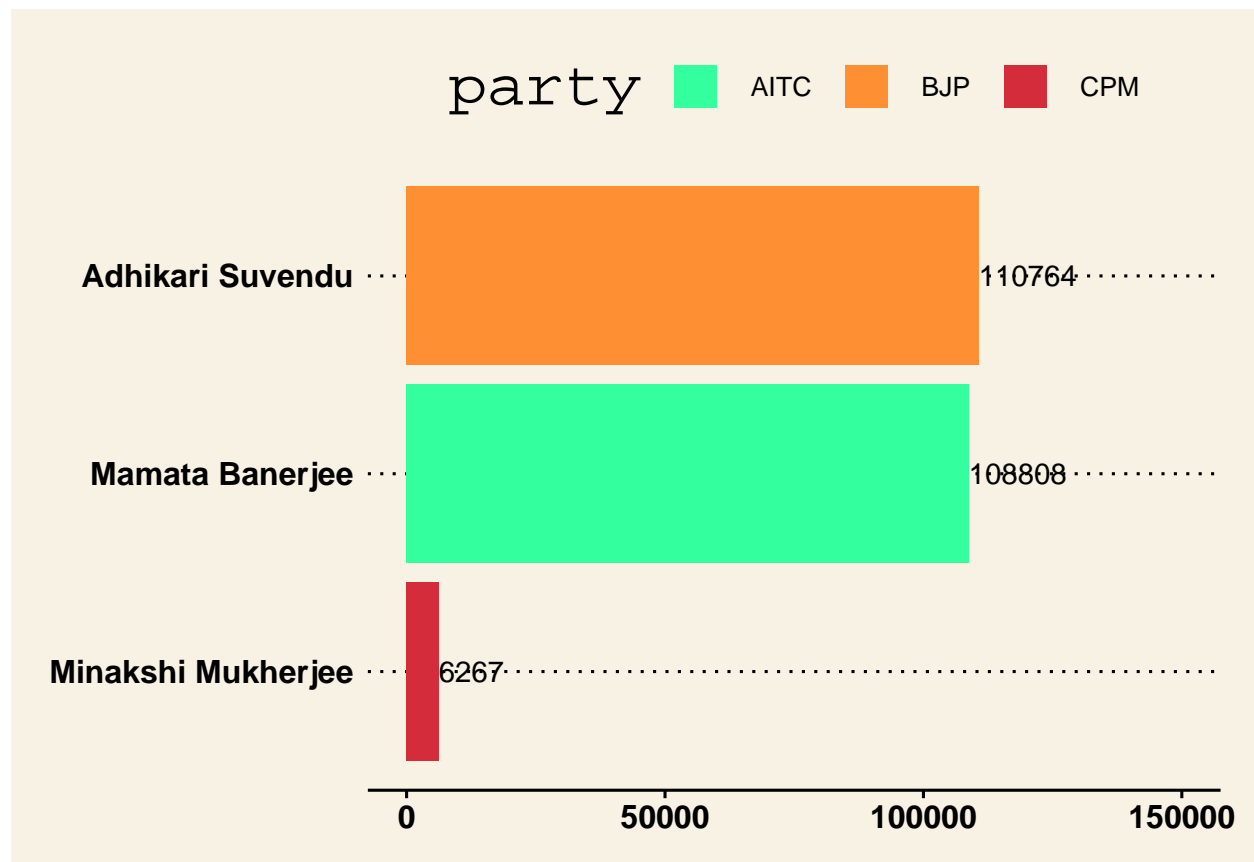
Constituency with higher voter turnout

```
wb %>%
  filter(position == 1) %>%
  filter(turnout_percentage >= 85) %>%
  arrange(desc(turnout_percentage)) %>%
  head(10) %>%
  mutate(constituency_name = fct_reorder(constituency_name, turnout_percentage)) %>%
  ggplot(aes(turnout_percentage, constituency_name, fill = party)) +
  geom_col() +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", IND = "#33ADFF", RSSCMJP = "#092B4E"))
  ggthemes::theme_wsj()
```



The CM's Constiency

```
wb %>%
  filter(constituency_name == "NANDIGRAM") %>%
  head(3) %>%
  mutate(candidate = str_to_title(candidate)) %>%
  mutate(candidate = fct_reorder(candidate, votes)) %>%
  ggplot(aes(votes, candidate, fill = party)) +
  geom_col() +
  geom_text(aes(label = votes), color = "black", hjust = 0.001) +
  coord_cartesian(xlim = c(0, 150000)) +
  scale_fill_manual(values = c( AITC = "#33FF9E", BJP = "#FF8F33", CPM = "#D52C3C")) +
  ggthemes::theme_ws()
```



References

APA style

Authors guidelines |

ADR