Prediction Model

Voting Prediction Model

Loading required libraries

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.3      v purrr   0.3.4
## v tibble  3.1.2      v dplyr   1.0.6
## v tidyr   1.1.3      v stringr 1.4.0
## v readr   1.4.0      v forcats 0.5.1
```

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

```
library(caret)
```

```
## Loading required package: lattice
```

```
##
## Attaching package: 'caret'
```

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

Loading 2014 and 2019 Loksabha Data

```
lok_2019 <- read.csv("D:/Janta ka mood Intern/Model/loksabha_2019.csv")
lok_2014 <- read.csv("D:/Janta ka mood Intern/Model/loksabha_2014 new.csv")

glimpse(lok_2019)
```

```
## Rows: 609
## Columns: 11
## $ Constituency   <chr> "ARARIA", "ARARIA", "ARARIA", "ARARIA", "ARARIA", "ARAR~
## $ Candidate      <chr> "Pradeep Kumar Singh Â Â Winner", "Abdul Wahid Khan", ~
## $ Party          <chr> "BJP", "IND", "IND", "IND", "IND", "IND", "BSP", "IND",~
## $ Criminal.Cases <int> 3, 1, 1, 0, 0, 0, 0, 0, 6, 1, 2, 2, 1, 0, 0, 0, 1, 0, 0~
## $ Education      <chr> "10th Pass", "10th Pass", "Literate", "10th Pass", "Pos~
## $ Age            <int> 52, 69, 31, 33, 46, 36, 46, 66, 50, 28, 54, 60, 66, 66,~
## $ Total.Assets   <chr> "Rs Â 50,10,577", "Rs Â 15,45,000", "Rs Â 6,02,510", "Rs Â ~
## $ Liabilities    <chr> "Rs Â 11,59,200", "Rs Â 1,19,028", "Rs Â 0", "Rs Â 0", "Rs Â ~
## $ Winner         <int> 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0~
## $ Surname        <chr> "Singh", "", "", "", "", "", "", "", "", "", "", "", "S~
## $ Caste          <chr> "", "", "", "", "", "", "", "", "", "", "", "", "Rajput~
```

```
glimpse(lok_2014)
```

```
## Rows: 610
## Columns: 11
## $ Constituency   <chr> "ARARIA", "ARARIA", "ARARIA", "ARARIA", "ARARIA", "ARAR~
## $ Candidate      <chr> "Taslim Uddin Â Â Winner", "Abdul Rahman", "Bidya Nand~
## $ Party          <chr> "RJD", "BSP", "Bahujan Mukti Party", "AAP", "Janta Dal ~
## $ Criminal.Cases <int> 4, 0, 0, 0, 1, 2, 4, 0, 0, 1, 0, 0, 1, 4, 0, 0, 3, 2, 0~
## $ Education      <chr> "Literate", "Literate", "12th Pass", "Graduate Professi~
## $ Age            <int> 72, 29, 61, 48, 35, 34, 48, 46, 63, 32, 37, 38, 51, 49,~
## $ Total.Assets   <chr> "Rs Â 4,23,68,468", "Rs Â 8,13,848", "Rs Â 8,56,973", "Rs Â ~
## $ Liabilities    <chr> "Rs Â 10,26,919", "Rs Â 0", "Rs Â 7,000", "Rs Â 50,25,161",~
## $ Winner         <int> 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ Surname        <chr> "", "", "Paswan", "", "", "", "", "", "", "", "", "", "~
## $ Caste          <chr> "Muslim", "Muslim", "", "", "", "", "", "", "", "", "",~
```

Selecting Feature Columns

```
loksabha_2019 <- lok_2019 %>% select(Constituency,Party,Criminal.Cases,Education,Age,Winner,Tota
l.Assets,Liabilities)
loksabha_2014 <- lok_2014 %>% select(Constituency,Party,Criminal.Cases,Education,Age,Winner,Tota
l.Assets,Liabilities)
```

Data Labeling

```
education_level <- c( "10th Pass","Literate","Post Graduate","8th Pass", "12th Pass","Graduate",
"Others","Graduate Professional","Doctorate","5th Pass","Not Given","Illiterate","")
education_label <- c(1:13)

loksabha_2019$Education <- as.integer(factor(loksabha_2019$Education,levels = education_level, l
abels = education_label))
loksabha_2014$Education <- as.integer(factor(loksabha_2014$Education,levels = education_level,la
bels = education_label))


constituency_level <- unique(loksabha_2019$Constituency)
loksabha_2019$Constituency <- as.integer(factor(loksabha_2019$Constituency,levels = constituency
_level,labels = c(1:40)))
loksabha_2014$Constituency <- as.integer(factor(loksabha_2014$Constituency,levels = constituency
_level,labels = c(1:40)))

x <- unique(loksabha_2019$Party)
y <- unique(loksabha_2014$Party)
z <- c(x,y)
part_level <- unique(z)
party_label <- c(1:length(part_level))

print(part_level)
```

```
##  [1] "BJP"
##  [2] "IND"
##  [3] "BSP"
##  [4] "RJD"
##  [5] "Bihar Lok Nirman Dal"
##  [6] "Bahujan Mukti Party"
##  [7] "Pragatishil Samajwadi Party (Lohia)"
##  [8] "Akhil Bharatiya Jan Sangh"
##  [9] "Bhartiya Kranti Vir Party"
## [10] "Shoshit Samaj Dal"
## [11] "CPI(ML)(L)"
## [12] "Peoples Party of India (Democratic)"
## [13] "Akhil Hind Forward Bloc (Krantikari)"
## [14] "Swaraj Party (Loktantrik)"
## [15] "Hindustani Awam Morcha (Secular)"
## [16] "JD(U)"
## [17] "Bhartiya Dalit Party"
## [18] "Bharatiya Momin Front"
## [19] "JMM"
## [20] "Bhartiya Lokmat Rashtrwadi Party"
## [21] "CPI"
## [22] "SUCI(C)"
## [23] "AAP"
## [24] "Jantantrik Vikas Party"
## [25] "Rashtriya Dal United"
## [26] "Voters Party International"
## [27] "Suheldev Bhartiya Samaj Party"
## [28] "Mithilanchal Mukti Morcha"
## [29] "Moolniwasi Samaj Party"
## [30] "NCP"
## [31] "Bharatiya Rashtriya Morcha"
## [32] "Public Mission Party"
## [33] "Aam Janta Party Rashtriya"
## [34] "Moulik Adhikar Party"
## [35] "Ambedkarite Party of India"
## [36] "Bharat Bhrashtachar Mitao Party"
## [37] "Janta Dal Rashtravadi"
## [38] "SHS"
## [39] "Jai Prakash Janata Dal"
## [40] "LJP"
## [41] "Sathi Aur Aapka Faisala Party"
## [42] "Bajjikanchal Vikas Party"
## [43] "Rajnaitik Vikalp Party"
## [44] "Rashtriya Samta Party (Secular)"
## [45] "Bharatiya Bahujan Congress"
## [46] "Lok Jan Vikas Morcha"
## [47] "Rashtriya mahan Gantantra Party"
## [48] "Hindusthan Nirman Dal"
## [49] "Rashtriya Lok Samta Party"
## [50] "Bhartiya Mitra Party"
## [51] "Samajwadi Janata Dal Democratic"
## [52] "RPI(A)"
## [53] "Aam Adhikar Morcha"
```

```
##  [54] "Aadarsh Mithila Party"
##  [55] "AIFB"
##  [56] "SP"
##  [57] "Rashtra Sewa Dal"
##  [58] "Ambedkar National Congress"
##  [59] "Asli Deshi Party"
##  [60] "Rashtriya Jansambhavna Party"
##  [61] "INC"
##  [62] "Vikassheel Insaan Party"
##  [63] "Garib Janshakti Party"
##  [64] "Proutist Sarva Samaj"
##  [65] "Janhit Kisan Party"
##  [66] "All India Majlis-E-Ittehadul Muslimeen"
##  [67] "AITC"
##  [68] "Rashtravadi Janata Party"
##  [69] "Jan Adhikar Party (Loktantrik)"
##  [70] "Baliraja Party"
##  [71] "Akhil Bhartiya Mithila Party"
##  [72] "Purvanchal Janta Party (Secular)"
##  [73] "Jago Hindustan Party"
##  [74] "Maanavvaadi Janta Party"
##  [75] "Bharatiya Jan Kranti Dal (Democratic)"
##  [76] "Bhartiya New Sanskar Krantikari Party"
##  [77] "Rashtriya Hind Sena"
##  [78] "Jan Adhikar Party"
##  [79] "Sankhyanupati Bhagidari Party"
##  [80] "Revolutionary Socialist Party of India(Marxis"
##  [81] "Rashtriya Rashtrawadi Party"
##  [82] "Janata Party"
##  [83] "Aap Aur Hum Party"
##  [84] "Bharat Nirman Party"
##  [85] "Yuva Krantikari Party"
##  [86] "National Jagaran Party"
##  [87] "Samagra Utthan Party"
##  [88] "Purvanchal Mahapanchayat"
##  [89] "Bahujan Nyay Dal"
##  [90] "RPI"
##  [91] "Bharat Prabhat Party"
##  [92] "Rashtriya Ulama Council"
##  [93] "Loktantrik Jan Swaraj Party"
##  [94] "Rashtriya Janvikas Party (Democratic)"
##  [95] "Rashtrawadi Chetna Party"
##  [96] "Bharatiya Aam Awam Party"
##  [97] "Apna Kisan Party"
##  [98] "Vanchit Samaj Party"
##  [99] "Rashtriya Sarvjan Vikas Party"
## [100] "Janvadi Party(Socialist)"
## [101] "Akhil Bhartiya Apna Dal"
## [102] "Wazib Adhikar Party"
## [103] "Bhartiya Insan Party"
## [104] "Bahujan Azad Party"
## [105] "Kisan Party of India"
## [106] "Proutist Bloc, India"
## [107] "Bharatiya Samta Samaj Party"
```

```
## [108] "Swatantra Samaj Party"
## [109] "Sanyukt Vikas Party"
## [110] "Rashtriya Sahyog Party"
## [111] "Hind Samrajya Party"
## [112] "Jammu & Kashmir National Panthers Party"
## [113] "Jai Hind Party"
## [114] "Lok Sewa Dal"
## [115] "CPI(M)"
## [116] "Janta Raj Vikas Party"
## [117] "Lok Chetna Dal"
## [118] "Rashtriya Pragati Party"
## [119] "Sapaks Party"
## [120] "Janata Congress"
## [121] "Bhartiya Panchyat Party"
## [122] "Bharat Vikas Morcha"
## [123] "Lok Dal"
## [124] "CPI(ML)L"
## [125] "Samajwadi Janata Party (Rashtriya)"
## [126] "JAP(L)"
## [127] "Samajwadi Forward Bloc"
## [128] "Hindustan Vikas Dal"
## [129] "National Loktantrik Party"
## [130] "Bhartiya Ekta Manch Party"
## [131] "National Tiger Party"
## [132] "Pragatisheel Manav Samaj Party"
## [133] "Rashtriya Ahinsa Manch"
## [134] "Rashtriya Jan-Jagram Morcha"
## [135] "Rashtriya Bahujan Congress Party"
## [136] "Bharatiya Ekta Dal"
## [137] "Krantikari Vikas Dal"
## [138] "VANCHITSAMAJ INSAAF PARTY"
## [139] "Rashtriya Naujawan Dal"
## [140] "Sarvajan Kalyan Loktantrik Party"
## [141] "Loktantrik Janata Party (Secular)"
## [142] "IUML"
## [143] "Peace Party"
## [144] "Jai Maha Bharath Party"
## [145] "Rashtriya Krantikari Samajwadi Party"
## [146] "Ati Picchara party"
## [147] "Bharatiya Inqalab Party"
## [148] "Jharkhand Disom Party"
## [149] "Bhartiya Jantantrik Janata Dal"
## [150] "JKNPP"
## [151] "Kalinga Sena"
## [152] "Bihar Janta Party"
## [153] "National Lokmat Party"
## [154] "GGP"
## [155] "Naya Daur Party"
## [156] "Mahamukti Dal"
## [157] "Lokpriya Samaj Party"
```

```
loksabha_2019$Party <- strtoi(factor(loksabha_2019$Party,levels = part_level,labels = party_labe
l))
loksabha_2014$Party <- strtoi(factor(loksabha_2014$Party,levels = part_level,labels = party_labe
l))
```

Data Cleaning

```
loksabha_2014$Total.Assets[is.na(loksabha_2014$Total.Assets)]  <- "0"
loksabha_2019$Total.Assets[is.na(loksabha_2019$Total.Assets)]  <- "0"
loksabha_2014$Liabilities[is.na(loksabha_2014$Liabilities)]  <- "0"
loksabha_2019$Liabilities[is.na(loksabha_2019$Liabilities)]  <- "0"




loksabha_2019$Total.Assets <- strtoi(gsub("[RsÂ,]","",loksabha_2019$Total.Assets))
loksabha_2019$Liabilities <- strtoi(gsub("[RsÂ,]","",loksabha_2019$Liabilities))
loksabha_2014$Total.Assets <- strtoi(gsub("[RsÂ,]","",loksabha_2014$Total.Assets))
loksabha_2014$Liabilities <- strtoi(gsub("[RsÂ,]","",loksabha_2014$Liabilities))

str(loksabha_2019)
```

```
## 'data.frame':    609 obs. of  8 variables:
##  $ Constituency : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ Party        : int  1 2 2 2 2 2 3 2 4 2 ...
##  $ Criminal.Cases: int  3 1 1 0 0 0 0 0 6 1 ...
##  $ Education    : int  1 1 2 1 3 4 3 5 6 7 ...
##  $ Age          : int  52 69 31 33 46 36 46 66 50 28 ...
##  $ Winner       : int  1 0 0 0 0 0 0 0 0 0 ...
##  $ Total.Assets : int  5010577 1545000 602510 1110500 572000 1240800 6916000 50000 76618366
12421636 ...
##  $ Liabilities  : int  1159200 119028 0 0 0 0 1000000 0 8566199 300000 ...
```

```
str(loksabha_2014)
```

```
## 'data.frame':    610 obs. of  8 variables:
##  $ Constituency : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ Party        : int  4 3 6 23 37 2 1 122 123 124 ...
##  $ Criminal.Cases: int  4 0 0 0 1 2 4 0 0 1 ...
##  $ Education    : int  2 2 5 8 5 1 1 1 5 2 ...
##  $ Age          : int  72 29 61 48 35 34 48 46 63 32 ...
##  $ Winner       : int  1 0 0 0 0 0 0 0 0 0 ...
##  $ Total.Assets : int  42368468 813848 856973 14088067 15000 202412 4291479 1475000 10000 14
175 ...
##  $ Liabilities  : int  1026919 0 7000 5025161 63733 50000 802182 50000 0 0 ...
```

Preparing Data for Training and Normalizing

```
loksabha_2014$Winner <- as.factor(loksabha_2014$Winner)
loksabha_2019$Winner <- as.factor(lok_2019$Winner)

str(loksabha_2014)
```

```
## 'data.frame':    610 obs. of  8 variables:
##  $ Constituency : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ Party        : int  4 3 6 23 37 2 1 122 123 124 ...
##  $ Criminal.Cases: int  4 0 0 0 1 2 4 0 0 1 ...
##  $ Education    : int  2 2 5 8 5 1 1 1 5 2 ...
##  $ Age          : int  72 29 61 48 35 34 48 46 63 32 ...
##  $ Winner       : Factor w/ 2 levels "0","1": 2 1 1 1 1 1 1 1 1 1 ...
##  $ Total.Assets : int  42368468 813848 856973 14088067 15000 202412 4291479 1475000 10000 14
175 ...
##  $ Liabilities  : int  1026919 0 7000 5025161 63733 50000 802182 50000 0 0 ...
```

```
str(loksabha_2019)
```

```
## 'data.frame':    609 obs. of  8 variables:
##  $ Constituency : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ Party        : int  1 2 2 2 2 2 3 2 4 2 ...
##  $ Criminal.Cases: int  3 1 1 0 0 0 0 0 6 1 ...
##  $ Education    : int  1 1 2 1 3 4 3 5 6 7 ...
##  $ Age          : int  52 69 31 33 46 36 46 66 50 28 ...
##  $ Winner       : Factor w/ 2 levels "0","1": 2 1 1 1 1 1 1 1 1 1 ...
##  $ Total.Assets : int  5010577 1545000 602510 1110500 572000 1240800 6916000 50000 76618366
12421636 ...
##  $ Liabilities  : int  1159200 119028 0 0 0 0 1000000 0 8566199 300000 ...
```

```
dim(loksabha_2014)
```

```
## [1] 610    8
```

```
dim(loksabha_2019)
```

```
## [1] 609    8
```

```
loksabha_2014 <- na.omit(loksabha_2014)
loksabha_2019 <- na.omit(loksabha_2019)

train_y <- loksabha_2014$Winner
train_x <- subset(loksabha_2014,select=-Winner)



test_y <- loksabha_2019$Winner
test_x <- subset(loksabha_2019,select=-Winner)

q <- preProcess(train_x[3:7],method=c("center", "scale"))
train_x[3:7] <- predict(q,train_x[3:7])
head(train_x)
```

```
##   Constituency Party Criminal.Cases  Education        Age Total.Assets
## 1            1     4     1.51344387 -1.1270267  1.9774464    0.1553505
## 2            1     3    -0.38559578 -1.1270267 -1.3294045   -0.2296146
## 3            1     6    -0.38559578  0.1367144  1.1315078   -0.2292151
## 4            1    23    -0.38559578  1.4004556  0.1317622   -0.1066412
## 5            1    37     0.08916413  0.1367144 -0.8679834   -0.2370152
## 6            1     2     0.56392405 -1.5482738 -0.9448869   -0.2352790
##   Liabilities
## 1 -0.04827611
## 2 -0.09043718
## 3 -0.09014979
## 4  0.11587524
## 5 -0.08782056
## 6 -0.08838438
```

```
q <- preProcess(test_x[3:7],method=c("center", "scale"))
test_x[3:7] <- predict(q,test_x[3:7])
head(test_x)
```

```
##   Constituency Party Criminal.Cases  Education         Age Total.Assets
## 1            1     1      1.0575241 -1.4958207  0.46379046   -0.2004068
## 2            1     2      0.1018825 -1.4958207  1.85327047   -0.2346979
## 3            1     2      0.1018825 -1.0776269 -1.25262603   -0.2440236
## 4            1     2     -0.3759384 -1.4958207 -1.08915779   -0.2389972
## 5            1     2     -0.3759384 -0.6594330 -0.02661425   -0.2443255
## 6            1     2     -0.3759384 -0.2412391 -0.84395543   -0.2377079
##   Liabilities
## 1 -0.05641842
## 2 -0.12314226
## 3 -0.13077754
## 4 -0.13077754
## 5 -0.13077754
## 6 -0.13077754
```

```
train_x[is.na(train_x)==TRUE]
```

```
## numeric(0)
```

```
test_x[is.na(test_x)==TRUE]
```

```
## numeric(0)
```

```
train_y[is.na(train_y)==TRUE]
```

```
## factor(0)
## Levels: 0 1
```

```
test_y[is.na(test_y)==TRUE]
```

```
## factor(0)
## Levels: 0 1
```

Counting Actual Sits

```
Actual_sits <- loksabha_2019 %>% filter(Winner==1) %>% select(Party)
Actual_sits <- Actual_sits %>% group_by(Party) %>% mutate(count=n())
Actual_sits <- unique(Actual_sits)
Actual_sits$Party <- factor(Actual_sits$Party,levels = party_label,labels = part_level)
Actual_sits
```

```
## # A tibble: 4 x 2
## # Groups:   Party [4]
##   Party count
##   <fct> <int>
## 1 BJP      17
## 2 JD(U)    16
## 3 LJP       6
## 4 INC       1
```

KNN Model Implementaion

```
library(caTools)
library(class)
classifier_knn <- knn(train = train_x, test = test_x, cl = train_y, k = 2)
classifier_knn
```

```
##    [1] 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 1 0 0
##   [38] 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
##   [75] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
##  [112] 1 0 0 0 0 0 1 0 0 0 0 1 0 1 0 0 0 0 0 0 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0
##  [149] 0 0 0 0 1 1 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 1 0 0 0 0 0 0 0 0
##  [186] 0 0 0 0 0 0 1 0 0 0 1 1 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 1 0
##  [223] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0
##  [260] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
##  [297] 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
##  [334] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
##  [371] 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
##  [408] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
##  [445] 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
##  [482] 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
##  [519] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
##  [556] 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0
##  [593] 0 1 0 0 0 0 0 0 0 0 1 1 0
## Levels: 0 1
```

Counting Predicted Sits

```
knn_pred_sits <- mutate(test_x,classifier_knn)
knn_pred_sits <- knn_pred_sits %>% filter(classifier_knn==1) %>% select(Party)
knn_pred_sits <- knn_pred_sits %>% group_by(Party) %>% mutate(count=n())
knn_pred_sits <- unique(knn_pred_sits)
knn_pred_sits$Party <- factor(knn_pred_sits$Party,levels = party_label,labels = part_level)
knn_pred_sits
```

```
## # A tibble: 28 x 2
## # Groups:   Party [28]
##    Party                     count
##    <fct>                     <int>
##  1 Bihar Lok Nirman Dal          1
##  2 BJP                           7
##  3 BSP                           1
##  4 RJD                           1
##  5 IND                           4
##  6 Jai Prakash Janata Dal        2
##  7 LJP                           3
##  8 Sathi Aur Aapka Faisala Party 1
##  9 Bajjikanchal Vikas Party      2
## 10 Bharatiya Bahujan Congress    2
## # ... with 18 more rows
```

```
# Confusion Matrix

confusionMatrix(table(test_y, classifier_knn))
```

```
## Confusion Matrix and Statistics
##
##         classifier_knn
## test_y    0    1
##      0 523   42
##      1  29   11
##
##                 Accuracy : 0.8826
##                   95% CI : (0.8543, 0.9072)
##      No Information Rate : 0.9124
##      P-Value [Acc > NIR] : 0.9947
##
##                    Kappa : 0.1743
##
##   Mcnemar's Test P-Value : 0.1544
##
##              Sensitivity : 0.9475
##              Specificity : 0.2075
##           Pos Pred Value : 0.9257
##           Neg Pred Value : 0.2750
##               Prevalence : 0.9124
##           Detection Rate : 0.8645
##     Detection Prevalence : 0.9339
##        Balanced Accuracy : 0.5775
##
##         'Positive' Class : 0
##
```