Import Lib and Data

In [1]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import numpy as np
```

Import Dataset

In [2]:
```
data=pd.read_csv('election_results_2024.csv')
```

In [4]:
```
data
```

Out[4]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
0	AJMER	13	BHAGIRATH CHOUDHARY	Bharatiya Janata Party	RAMCHANDRA CHOUDHARY	Indian National Congress	329991	Result Declared
1	ALWAR	8	BHUPENDER YADAV	Bharatiya Janata Party	LALIT YADAV	Indian National Congress	48282	Result Declared
2	AMBALA	1	VARUN CHAUDHRY	Indian National Congress	BANTO KATARIA	Bharatiya Janata Party	49036	Result Declared
3	ANANTNAG-RAJOURI	3	MIAN ALTAF AHMAD	Jammu & Kashmir National Conference	MEHBOOBA MUFTI	Jammu & Kashmir Peoples Democratic Party	281794	Result Declared
4	ARAKKONAM	7	S JAGATHRATCHAKAN	Dravida Munnetra Kazhagam	L VIJAYAN	All India Anna Dravida Munnetra Kazhagam	306559	Result Declared
...	...	...	...	...	...	...	...	...
538	Wardha	8	AMAR SHARADRAO KALE	Nationalist Congress Party – Sharadchandra Pawar	RAMDAS CHANDRABHAN TADAS	Bharatiya Janata Party	81648	Result Declared
539	Wayanad	4	RAHUL GANDHI	Indian National Congress	ANNIE RAJA	Communist Party of India	364422	Result Declared
540	West Delhi	6	KAMALJEET SEHRAWAT	Bharatiya Janata Party	MAHABAL MISHRA	Aam Aadmi Party	199013	Result Declared
541	Yavatmal-Washim	14	SANJAY UTTAMRAO DESHMUKH	Shiv Sena (Uddhav Balasaheb Thackrey)	RAJSHRITAI HEMANT PATIL (MAHALLE)	Shiv Sena	94473	Result Declared
542	Zahirabad	5	SURESH KUMAR SHETKAR	Indian National Congress	B. B. PATIL	Bharatiya Janata Party	46188	Result Declared

543 rows × 8 columns

In [7]:
```
data.describe()
```

Out[7]:

	Const. No.
count	543.000000
mean	18.178637
std	16.427840
min	1.000000
25%	6.000000
50%	14.000000
75%	25.000000
max	80.000000

In [ ]:

In [6]:
```
data.head(100)
```

Out[6]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
0	AJMER	13	BHAGIRATH CHOUDHARY	Bharatiya Janata Party	RAMCHANDRA CHOUDHARY	Indian National Congress	329991	Result Declared
1	ALWAR	8	BHUPENDER YADAV	Bharatiya Janata Party	LALIT YADAV	Indian National Congress	48282	Result Declared
2	AMBALA	1	VARUN CHAUDHRY	Indian National Congress	BANTO KATARIA	Bharatiya Janata Party	49036	Result Declared
3	ANANTNAG-RAJOURI	3	MIAN ALTAF AHMAD	Jammu & Kashmir National Conference	MEHBOOBA MUFTI	Jammu & Kashmir Peoples Democratic Party	281794	Result Declared
4	ARAKKONAM	7	S JAGATHRATCHAKAN	Dravida Munnetra Kazhagam	L VIJAYAN	All India Anna Dravida Munnetra Kazhagam	306559	Result Declared
...	...	...	...	...	...	...	...	...
95	Bhadrak	7	AVIMANYU SETHI	Bharatiya Janata Party	MANJULATA MANDAL	Biju Janata Dal	91544	Result Declared
96	Bhagalpur	26	AJAY KUMAR MANDAL	Janata Dal (United)	AJEET SHARMA	Indian National Congress	104868	Result Declared
97	Bhandara Gondiya	11	DR. PRASHANT YADAORAO PADOLE	Indian National Congress	SUNIL BABURAO MENDHE	Bharatiya Janata Party	37380	Result Declared
98	Bharuch	22	MANSUKHBHAI DHANJIBHAI VASAVA	Bharatiya Janata Party	CHAITARBHAI DAMJIBHAI VASAVA	Aam Aadmi Party	85696	Result Declared
99	Bhavnagar	15	NIMUBEN JAYANTIBHAI BAMBHANIYA (NIMUBEN BAMBHA...	Bharatiya Janata Party	UMESHBHAI NARANBHAI MAKWANA	Aam Aadmi Party	455289	Result Declared

100 rows × 8 columns

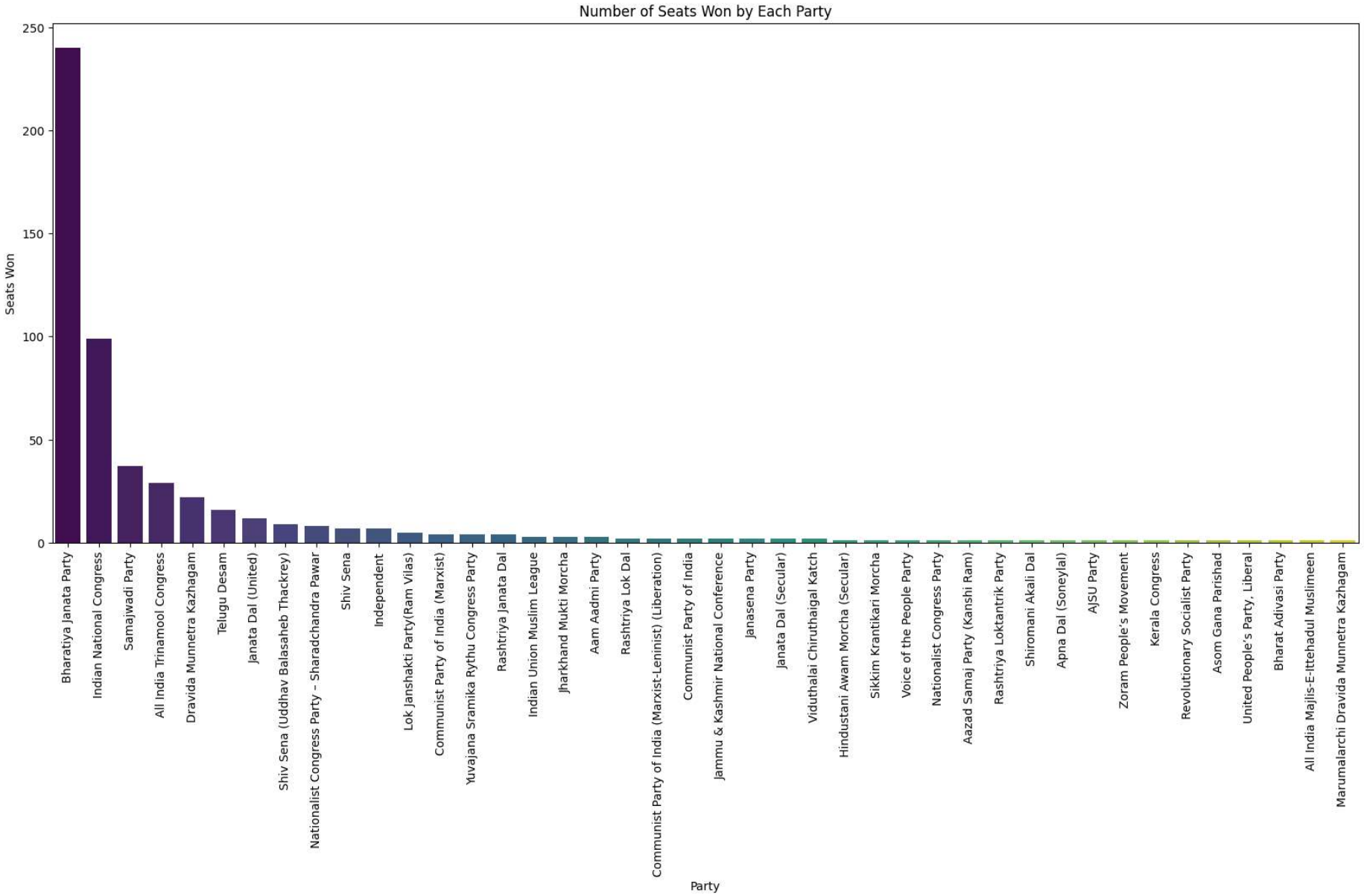
Party with highest and lowest margin of victory

In [7]:
```
party_votes = data.groupby('Leading Party')['Margin'].sum().sort_values(ascending=False)
data['Margin'] = pd.to_numeric(data['Margin'], errors='coerce')
```

In [8]:
```
# Party with highest and lowest margin of victory
highest_margin = data.loc[data['Margin'].idxmax()]
lowest_margin = data.loc[data['Margin'].idxmin()]
```

Plot number of plot won by the each party

In [9]:
```
leading_party_highest_votes = party_votes.idxmax()
leading_party_lowest_votes = party_votes.idxmin()
# Number of seats won by each party
seats_won = data['Leading Party'].value_counts()
# Plot number of seats won by each party
plt.figure(figsize=(20, 8))
sns.barplot(x=seats_won.index, y=seats_won.values, palette='viridis')
plt.title('Number of Seats Won by Each Party')
plt.xlabel('Party')
plt.ylabel('Seats Won')
plt.xticks(rotation=90)
plt.show()
```



Get the vote for Narendra Modi, Rahul Gandhi and Amit shah

In [21]:
```
rahul_entries = data[data['Leading Candidate'] == 'RAHUL GANDHI']
modi_entries = data[data['Leading Candidate'] == 'NARENDRA MODI']
amit_entries = data[data['Leading Candidate'] == 'AMIT SHAH']

# Get the votes for Rahul Gandhi, Narendra Modi, and Amit Shah
rahul_votes = rahul_entries['Margin'].values
modi_votes = modi_entries['Margin'].values[0] if not modi_entries.empty else 0
amit_votes = amit_entries['Margin'].values[0] if not amit_entries.empty else 0
```

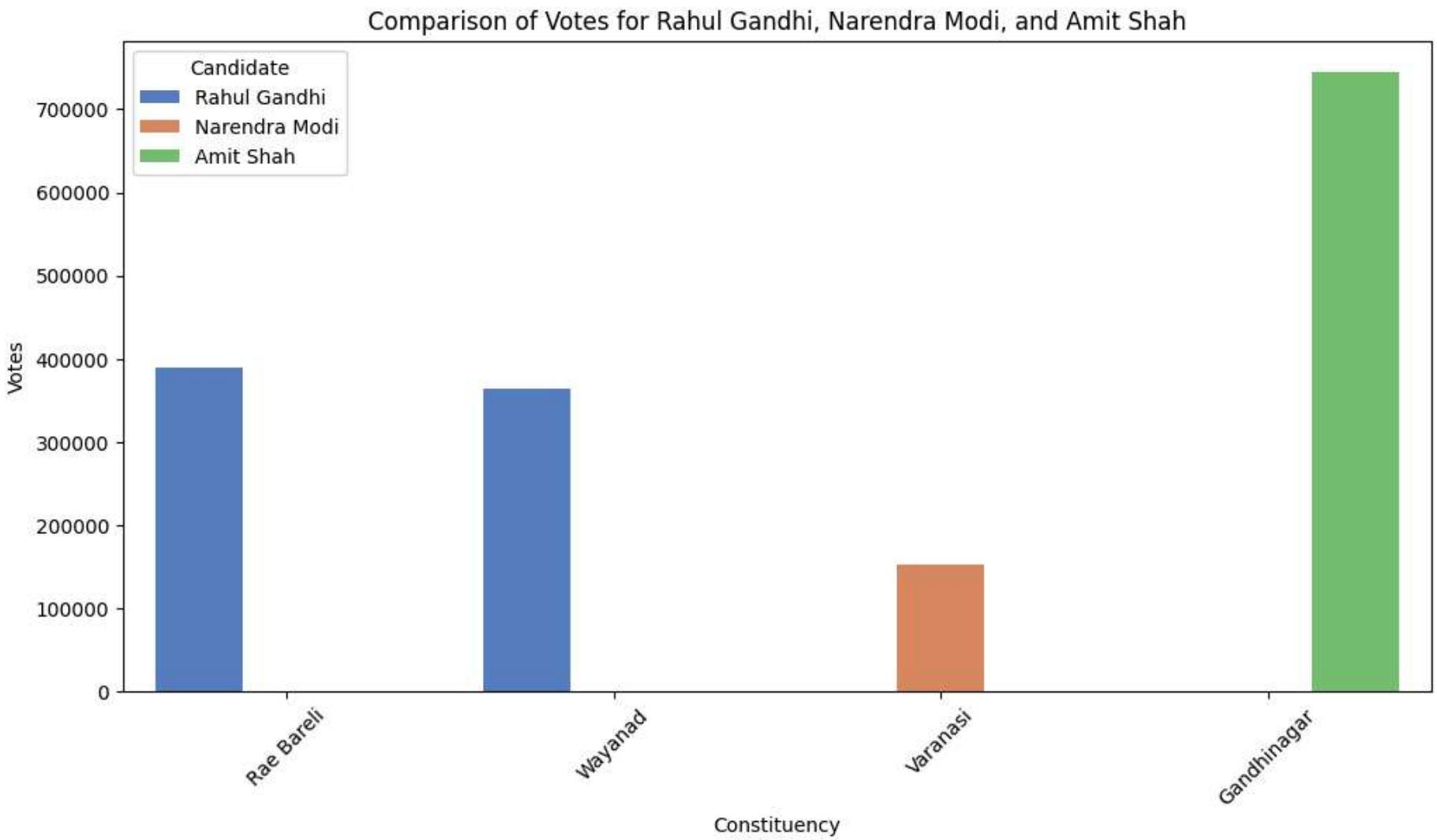
In [23]:
```
# Get the original constituency names for Rahul Gandhi
rahul_constituencies = list(rahul_entries['Constituency'])

# Get the original constituency name for Narendra Modi
modi_constituency = modi_entries['Constituency'].values[0] if not modi_entries.empty else "Modi Constituency"

# Get the original constituency name for Amit Shah
amit_constituency = amit_entries['Constituency'].values[0] if not amit_entries.empty else "Amit Shah Constituency"

# Combine the data
data_to_plot = pd.DataFrame({
    'Candidate': ['Rahul Gandhi'] * len(rahul_votes) + ['Narendra Modi', 'Amit Shah'],
    'Constituency': rahul_constituencies + [modi_constituency, amit_constituency],
    'Votes': list(rahul_votes) + [modi_votes, amit_votes]
})

# Plot the comparison
plt.figure(figsize=(12, 6))
sns.barplot(data=data_to_plot, x='Constituency', y='Votes', hue='Candidate', palette='muted')
plt.title('Comparison of Votes for Rahul Gandhi, Narendra Modi, and Amit Shah')
plt.xlabel('Constituency')
plt.ylabel('Votes')
plt.xticks(rotation=45)
plt.show()
```



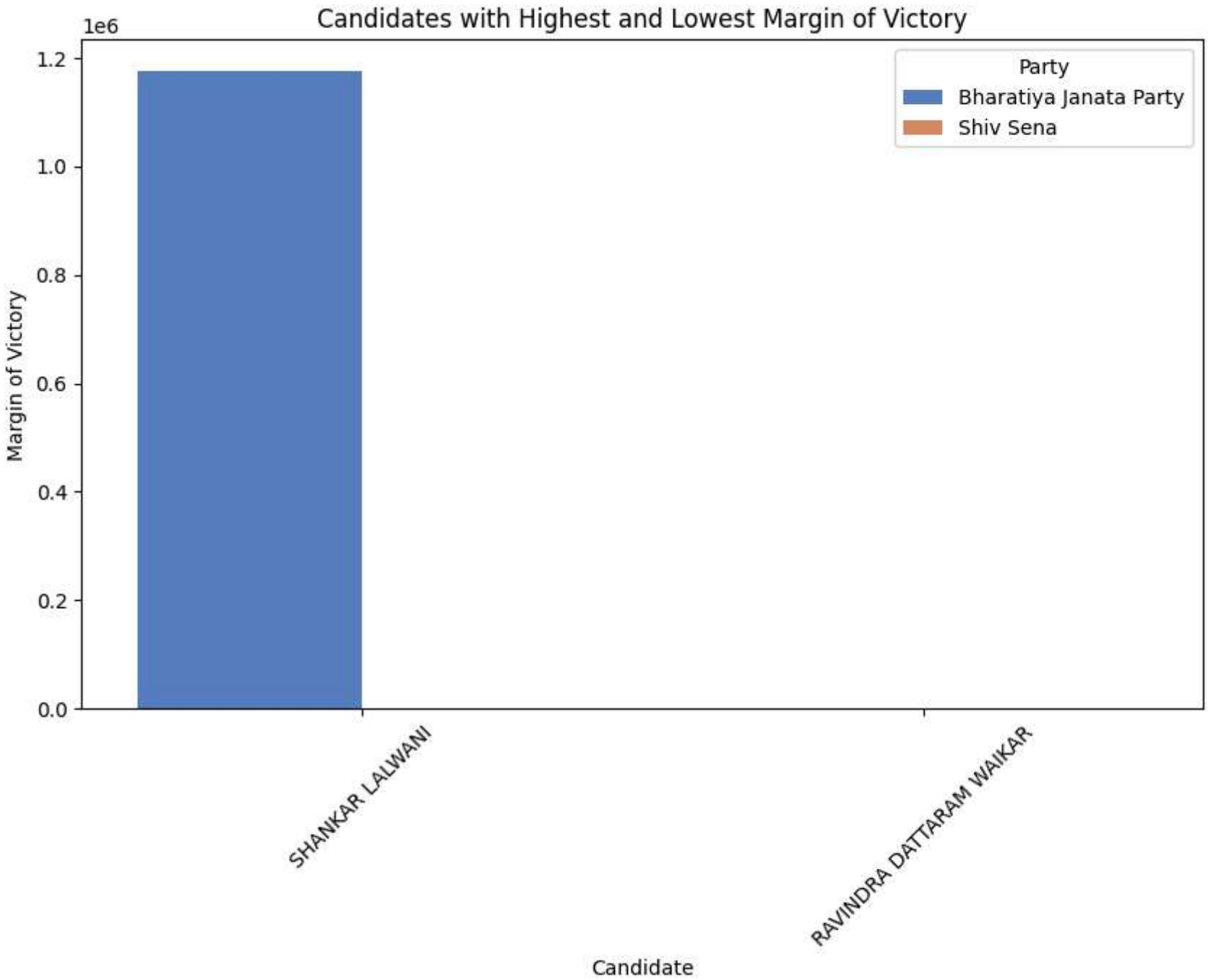
Highest and Lowest Candidate victory

In [24]:
```
highest_margin_entry = data.loc[data['Margin'].idxmax()]
lowest_margin_entry = data.loc[data['Margin'].idxmin()]

# Combine the data
```

```python
data_to_plot = pd.DataFrame({
    'Candidate': [highest_margin_entry['Leading Candidate'], lowest_margin_entry['Leading Candidate']],
    'Party': [highest_margin_entry['Leading Party'], lowest_margin_entry['Leading Party']],
    'Margin': [highest_margin_entry['Margin'], lowest_margin_entry['Margin']]
})

# Plot the comparison
plt.figure(figsize=(10, 6))
sns.barplot(data=data_to_plot, x='Candidate', y='Margin', hue='Party', palette='muted')
plt.title('Candidates with Highest and Lowest Margin of Victory')
plt.xlabel('Candidate')
plt.ylabel('Margin of Victory')
plt.xticks(rotation=45)
plt.show()
```


Candidates with Highest and Lowest Margin of Victory
1e6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Margin of Victory
Party
Bharatiya Janata Party
Shiv Sena
SHANKAR LALWANI
RAVINDRA DATTARAM WAIKAR
Candidate

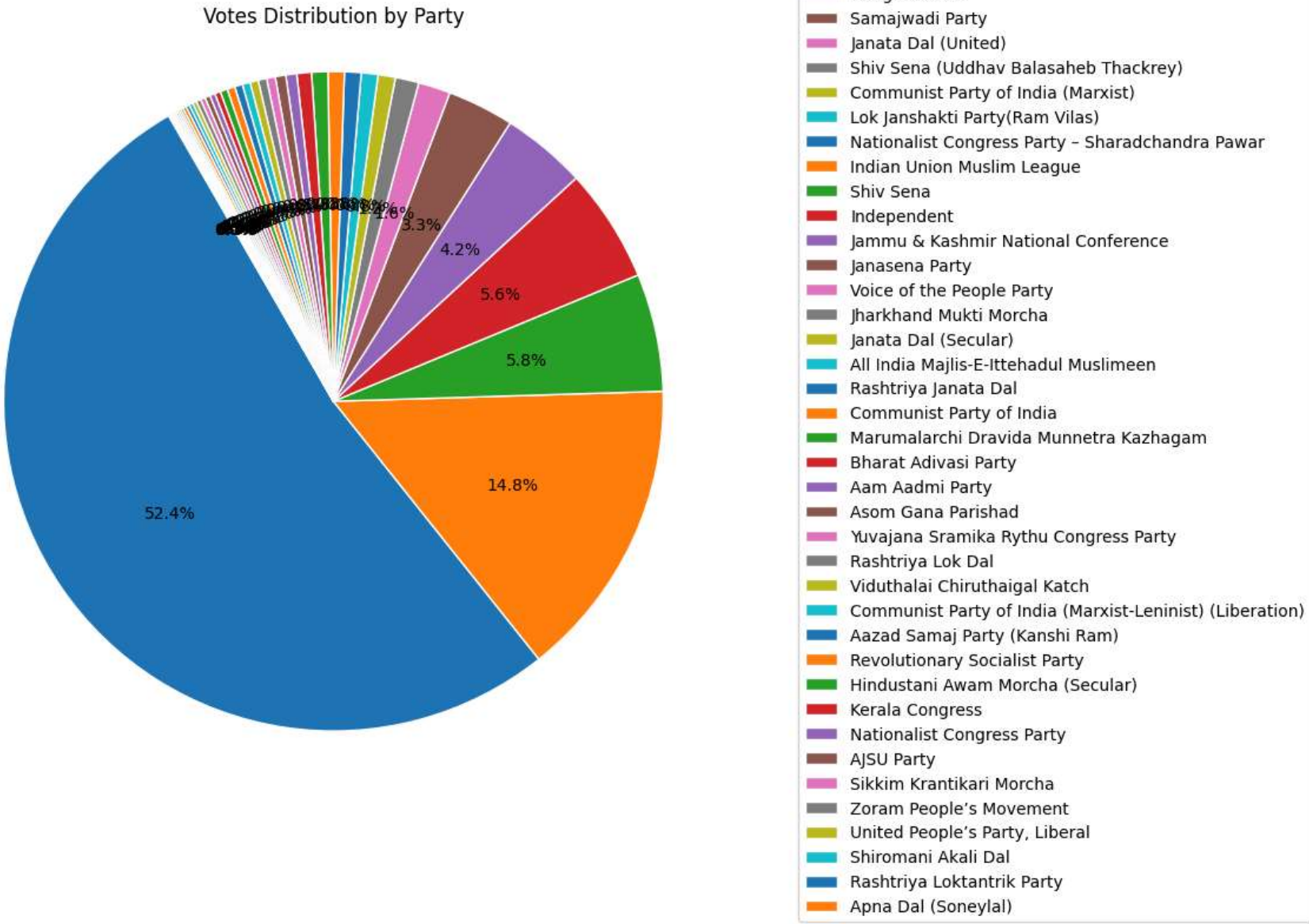
Votes distribution by party

In [28]:
```
party_votes = data.groupby('Leading Party')['Margin'].sum().sort_values(ascending=False)

# Plot pie chart
plt.figure(figsize=(10, 8))
wedges, texts, autotexts = plt.pie(party_votes, labels=None, autopct='%1.1f%%', startangle=120, wedgeprops=dict(edgecolor='w')
plt.title('Votes Distribution by Party', pad=10)
plt.axis('equal')

plt.legend(labels=party_votes.index, loc='center left', bbox_to_anchor=(1, 0.5), fontsize='medium')


plt.show()
```


Votes Distribution by Party
52.4%
14.8%
5.8%
5.6%
4.2%
3.3%
Bharatiya Janata Party
Indian National Congress
Dravida Munnetra Kazhagam
All India Trinamool Congress
Telugu Desam
Samajwadi Party
Janata Dal (United)
Shiv Sena (Uddhav Balasaheb Thackrey)
Communist Party of India (Marxist)
Lok Janshakti Party(Ram Vilas)
Nationalist Congress Party – Sharadchandra Pawar
Indian Union Muslim League
Shiv Sena
Independent
Jammu & Kashmir National Conference
Janasena Party
Voice of the People Party
Jharkhand Mukti Morcha
Janata Dal (Secular)
All India Majlis-E-Ittehadul Muslimeen
Rashtriya Janata Dal
Communist Party of India
Marumalarchi Dravida Munnetra Kazhagam
Bharat Adivasi Party
Aam Aadmi Party
Asom Gana Parishad
Yuvajana Sramika Rythu Congress Party
Rashtriya Lok Dal
Viduthalai Chiruthaigal Katch
Communist Party of India (Marxist-Leninist) (Liberation)
Aazad Samaj Party (Kanshi Ram)
Revolutionary Socialist Party
Hindustani Awam Morcha (Secular)
Kerala Congress
Nationalist Congress Party
AJSU Party
Sikkim Krantikari Morcha
Zoram People’s Movement
United People’s Party, Liberal
Shiromani Akali Dal
Rashtriya Loktantrik Party
Apna Dal (Soneylal)

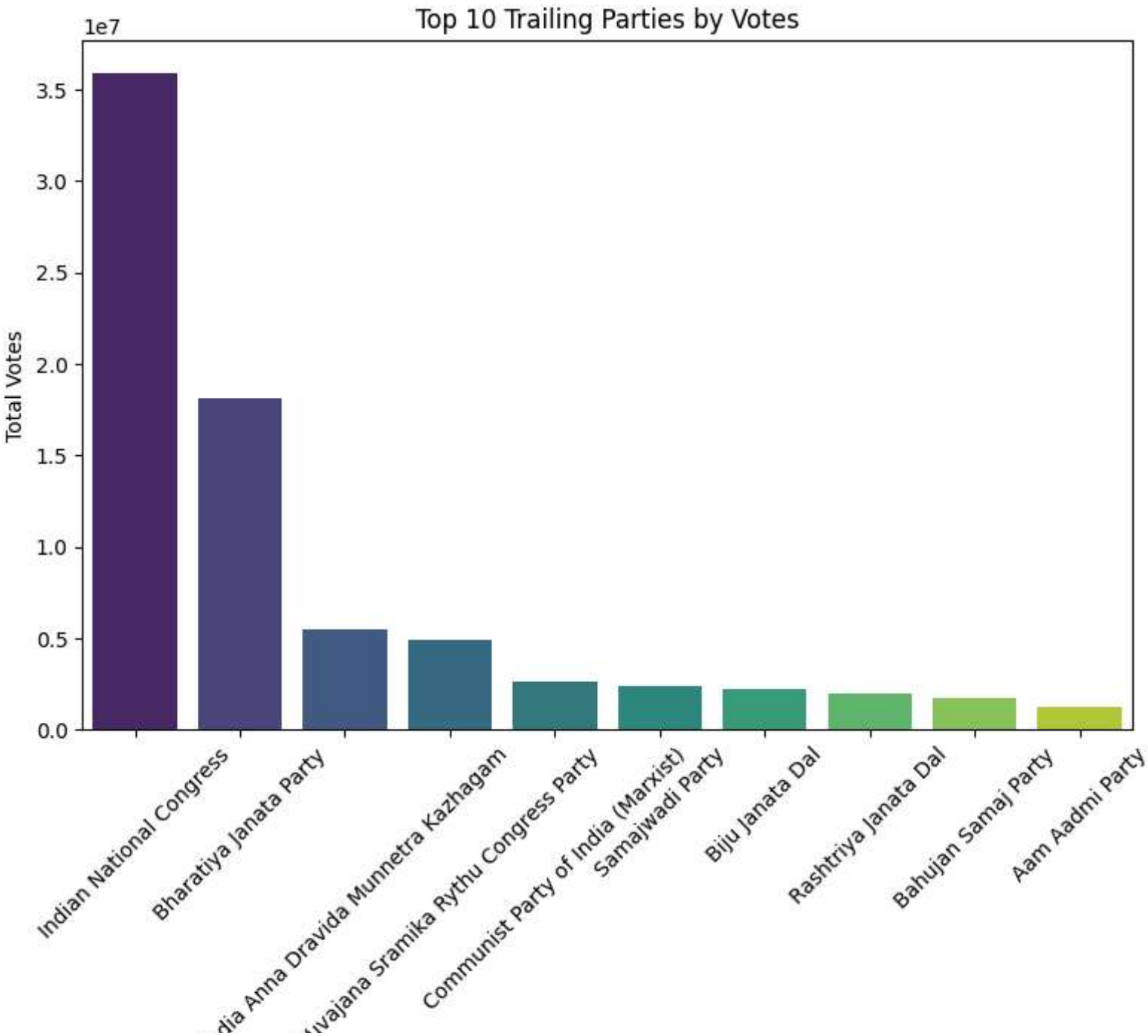
Top 10 Trailling party by VOTE

In [29]:
```
trailing_party_votes = data.groupby('Trailing Party')['Margin'].sum().sort_values(ascending=False)
trailing_party_seats = data['Trailing Party'].value_counts()
```

In [30]:
```
plt.figure(figsize=(20, 6))

# Plot votes distribution by trailing party
plt.subplot(1, 2, 1)
sns.barplot(x=trailing_party_votes.index[:10], y=trailing_party_votes.values[:10], palette='viridis')
plt.title('Top 10 Trailing Parties by Votes')
plt.xlabel('Party')
plt.ylabel('Total Votes')
plt.xticks(rotation=45)
```

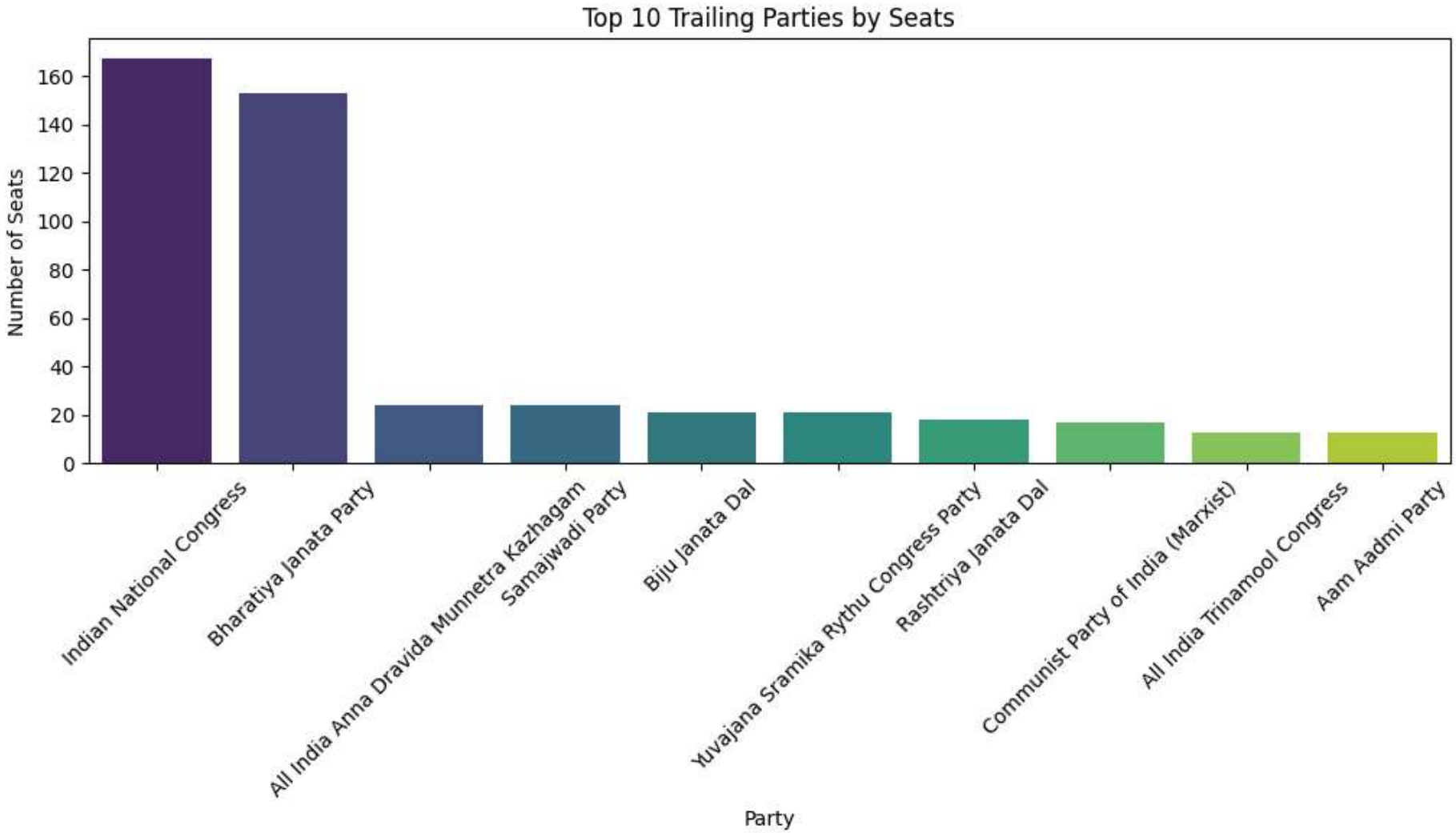
Out[30]:
```
(array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9]),
 [Text(0, 0, 'Indian National Congress'),
  Text(1, 0, 'Bharatiya Janata Party'),
  Text(2, 0, 'All India Anna Dravida Munnetra Kazhagam'),
  Text(3, 0, 'Yuvajana Sramika Rythu Congress Party'),
  Text(4, 0, 'Communist Party of India (Marxist)'),
  Text(5, 0, 'Samajwadi Party'),
  Text(6, 0, 'Biju Janata Dal'),
  Text(7, 0, 'Rashtriya Janata Dal'),
  Text(8, 0, 'Bahujan Samaj Party'),
  Text(9, 0, 'Aam Aadmi Party')])
```


Top 10 Trailing Parties by Votes
1e7
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Votes
Indian National Congress
Bharatiya Janata Party
dia Anna Dravida Munnetra Kazhagam
ivajana Sramika Rythu Congress Party
Communist Party of India (Marxist)
Samajwadi Party
Biju Janata Dal
Rashtriya Janata Dal
Bahujan Samaj Party
Aam Aadmi Party

Top 10 trailing party by SEAT

In [31]:
```
plt.figure(figsize=(20, 6))
plt.subplot(1, 2, 2)
sns.barplot(x=trailing_party_seats.index[:10], y=trailing_party_seats.values[:10], palette='viridis')
plt.title('Top 10 Trailing Parties by Seats')
plt.xlabel('Party')
plt.ylabel('Number of Seats')
plt.xticks(rotation=45)


plt.tight_layout()
plt.show()
```



In [10]:
```
data.isnull()
```

Out[10]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
0	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...
538	False	False	False	False	False	False	False	False
539	False	False	False	False	False	False	False	False
540	False	False	False	False	False	False	False	False
541	False	False	False	False	False	False	False	False
542	False	False	False	False	False	False	False	False

543 rows × 8 columns

In [11]:
```
data.tail()
```

Out[11]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
538	Wardha	8	AMAR SHARADRAO KALE	Nationalist Congress Party – Sharadchandra Pawar	RAMDAS CHANDRABHAN TADAS	Bharatiya Janata Party	81648	Result Declared
539	Wayanad	4	RAHUL GANDHI	Indian National Congress	ANNIE RAJA	Communist Party of India	364422	Result Declared
540	West Delhi	6	KAMALJEET SEHRAWAT	Bharatiya Janata Party	MAHABAL MISHRA	Aam Aadmi Party	199013	Result Declared
541	Yavatmal-Washim	14	SANJAY UTTAMRAO DESHMUKH	Shiv Sena (Uddhav Balasaheb Thackrey)	RAJSHRITAI HEMANT PATIL (MAHALLE)	Shiv Sena	94473	Result Declared
542	Zahirabad	5	SURESH KUMAR SHETKAR	Indian National Congress	B. B. PATIL	Bharatiya Janata Party	46188	Result Declared

In [14]:
```
data.head()
```

Out[14]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
0	AJMER	13	BHAGIRATH CHOUDHARY	Bharatiya Janata Party	RAMCHANDRA CHOUDHARY	Indian National Congress	329991	Result Declared
1	ALWAR	8	BHUPENDER YADAV	Bharatiya Janata Party	LALIT YADAV	Indian National Congress	48282	Result Declared
2	AMBALA	1	VARUN CHAUDHRY	Indian National Congress	BANTO KATARIA	Bharatiya Janata Party	49036	Result Declared
3	ANANTNAG-RAJOURI	3	MIAN ALTAF AHMAD	Jammu & Kashmir National Conference	MEHBOOBA MUFTI	Jammu & Kashmir Peoples Democratic Party	281794	Result Declared
4	ARAKKONAM	7	S JAGATHRATCHAKAN	Dravida Munnetra Kazhagam	L VIJAYAN	All India Anna Dravida Munnetra Kazhagam	306559	Result Declared

In [15]:
```
data.tail(20)
```

Out[15]:

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
523	Uttara Kannada	12	VISHWESHWAR HEGDE KAGERI	Bharatiya Janata Party	DR. ANJALI NIMBALKAR	Indian National Congress	337428	Result Declared
524	VELLORE	8	DM KATHIR ANAND	Dravida Munnetra Kazhagam	AC SHANMUGAM	Bharatiya Janata Party	215702	Result Declared
525	VIDISHA	18	SHIVRAJ SINGH CHOUHAN	Bharatiya Janata Party	PRATAPBHANU SHARMA	Indian National Congress	821408	Result Declared
526	VILUPPURAM	13	RAVIKUMAR. D	Viduthalai Chiruthaigal Katch	BHAGYARAJ. J	All India Anna Dravida Munnetra Kazhagam	70703	Result Declared
527	VIRUDHUNAGAR	34	MANICKAM TAGORE B	Indian National Congress	VIJAYAPRABHAKARAN V	Desiya Murpokku Dravida Kazhagam	4379	Result Declared
528	Vadakara	3	SHAFI PARAMBIL	Indian National Congress	K K SHAILAJA TEACHER	Communist Party of India (Marxist)	114506	Result Declared
529	Vadodara	20	DR. HEMANG JOSHI	Bharatiya Janata Party	PADHIYAR JASHPALSINH MAHENDRASINH (BAPU)	Indian National Congress	582126	Result Declared
530	Vaishali	16	VEENA DEVI	Lok Janshakti Party(Ram Vilas)	VIJAY KUMAR SHUKLA	Rashtriya Janata Dal	89634	Result Declared
531	Valmiki Nagar	1	SUNIL KUMAR	Janata Dal (United)	DEEPAK YADAV	Rashtriya Janata Dal	98675	Result Declared
532	Valsad	26	DHAVAL LAXMANBHAI PATEL	Bharatiya Janata Party	ANANTKUMAR HASMUKHBHAI PATEL	Indian National Congress	210704	Result Declared
533	Varanasi	77	NARENDRA MODI	Bharatiya Janata Party	AJAY RAI	Indian National Congress	152513	Result Declared
534	Vijayawada	12	KESINENI SIVANATH (CHINNI)	Telugu Desam	KESINENI SRINIVAS (NANI)	Yuvajana Sramika Rythu Congress Party	282085	Result Declared

	Constituency	Const. No.	Leading Candidate	Leading Party	Trailing Candidate	Trailing Party	Margin	Status
535	Visakhapatnam	4	SRIBHARAT MATHUKUMILI	Telugu Desam	JHANSI LAKSHMI. BOTCHA.	Yuvajana Sramika Rythu Congress Party	504247	Result Declared
536	Vizianagaram	3	APPALANAIDU KALISETTI	Telugu Desam	BELLANA CHANDRASEKHAR	Yuvajana Sramika Rythu Congress Party	249351	Result Declared
537	Warangal	15	KADIYAM KAVYA	Indian National Congress	AROORI RAMESH	Bharatiya Janata Party	220339	Result Declared
538	Wardha	8	AMAR SHARADRAO KALE	Nationalist Congress Party – Sharadchandra Pawar	RAMDAS CHANDRABHAN TADAS	Bharatiya Janata Party	81648	Result Declared
539	Wayanad	4	RAHUL GANDHI	Indian National Congress	ANNIE RAJA	Communist Party of India	364422	Result Declared
540	West Delhi	6	KAMALJEET SEHRAWAT	Bharatiya Janata Party	MAHABAL MISHRA	Aam Aadmi Party	199013	Result Declared
541	Yavatmal-Washim	14	SANJAY UTTAMRAO DESHMUKH	Shiv Sena (Uddhav Balasaheb Thackrey)	RAJSHRITAI HEMANT PATIL (MAHALLE)	Shiv Sena	94473	Result Declared
542	Zahirabad	5	SURESH KUMAR SHETKAR	Indian National Congress	B. B. PATIL	Bharatiya Janata Party	46188	Result Declared

In [17]:
```
data.describe()
```

Out[17]:

	Const. No.
count	543.000000
mean	18.178637
std	16.427840
min	1.000000
25%	6.000000
50%	14.000000
75%	25.000000
max	80.000000

In [ ]: