

Design Project 3 - Stage 3

Data Visualization for the trends in the Gujarat Elections over the last 10 Assembly elections

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M.Des, Interaction Design, Batch of 2021-23

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Project Type: Data Visualization

IDC School of Design
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IIT Bombay

Declaration

I declare that this written document represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/ source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.



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Project Approval

The Design Project III titled “Data Visualization for the trends in the Gujarat Elections over the last 10 Assembly elections” by Shweta Ratanpura, Roll Number 216330016 is approved, in partial fulfillment of the Masters Degree in Design at the IDC School of Design, Indian Institute of Technology Bombay.



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Abstract

A higher voter turnout in the Indian Assembly elections in recent years indicates greater participation as well as a growing interest in politics by the people. One of the most widely debated topics of interest in the Indian political space are the Gujarat Elections and BJP party's consecutive wins since 1989 - it has dominated the last 7 Assembly elections.

Information graphics and interactive visualizations have become an integral part of modern journalism today. The nature of election reporting has increasingly become data centric, with a wide number of data parameters to draw upon.

While national news outlets and journalists have extensively covered Gujarat elections each year, there are not many examples of data-driven journalism which covers the past elections and the events leading up to them - in its entirety. This project aims to present rigorous analysis and insightful communication about the various parties and candidates involved in the elections, through a series of data visualizations.

Contents

Project Description	1
Secondary Research	3
Examples of relevant Data Visualizations	3
Reflections from studying Data Visualizations on Indian Elections	13
Data Collection & Ideation	14
Raw Election Data	14
Problems in the Raw Data	15
Preliminary Ideations	17
Gender Representation	17
Party Performance	24
Recurrent Candidates	43
Evaluation	54
Challenges	55
Shortcomings & Future Scope	56
Citations	57

Project Description

Introduction

There has been a general increase in political awareness over the last few years. The results of the 2022 Gujarat State Assembly Elections have been the subject of much debate since this was the BJP's seventh consecutive win with a record breaking result of 156 seats. With this, it has broken Madhavsinh Solanki's record in 1985 who had gathered 149 seats for the Congress. The Gujarat elections are consequential in the Indian political landscape for a number of reasons -

1. Historical significance: Gujarat is the birthplace of Indian Prime Minister Narendra Modi, and the election outcome is seen as a referendum on his popularity and government's performance.
2. Political significance: Gujarat is one of the most politically important states in India and the election outcome can have a major impact on national politics.
3. Regional dynamics: Gujarat has a complex political landscape, with a number of regional parties vying for power, making the election outcome unpredictable

4. Economic importance: Gujarat is one of India's most economically developed states and is home to a number of major industries, making the election outcome significant for business and investment in the region.
5. Social tensions: Gujarat has a history of communal tensions and the election outcome can have a major impact on social harmony in the state.

Thus, this is a case study of interest and it will benefit voters across India to be able to understand and study factors that contributed to the election results.

These elections also generate a fascinating trove of data for understanding political trends and processes - What is the pattern in voter turnout over time across the state? Are women participating more, or less, in the political process? Is the supply of political candidates increasing or decreasing over time? How many times does an aspirant for political office contest an election? Are these patterns correlated with caste, geography, age, gender or income? What strategies have political parties adopted to gain an advantage? What national events have had an effect on the state elections as well?

These factors consist of complex data which, if not presented

well, may be challenging for a general viewer to understand. Information graphics and interactive visualizations help in making such data easy to understand, more accessible and help the viewer to uncover insights and relationships in the data. They are specially useful in identifying long-term trends in data spanning across large time periods.

Data visualizations can make such electoral data more accessible, understandable, and impactful for a wider audience.

Aims / Objectives

The project will focus on creating visual explorations of the various parameters that may have affected the Gujarat election results spanning across the last 32 or even earlier. Some of the parameters that will be studied are - political events, demographics, economy, government performance, candidate popularity, regional dynamics, campaign strategies, etc

Overall, the broad objective would be to create data visualizations to understand trends and factors in Gujarat elections over time.

Scope

The project would aim at developing a consolidated website supported by data visualizations. The project holds value for all citizens of India or anyone interested in Indian politics.

Approach(s) / Method(s):

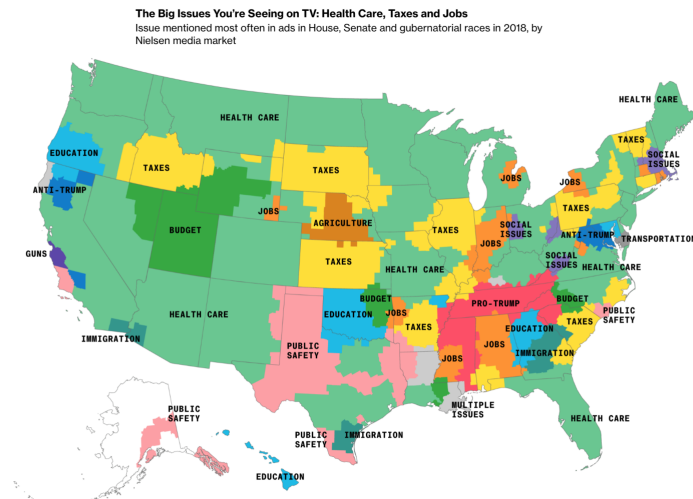
1. Secondary research on papers, articles, TV discussions and survey polls for qualitative data for ground level understanding of other indirect factors influencing the elections. Examples of good data visualizations and tools that have been used to depict similar data
2. Data collection for the election results along with the aforementioned parameters.
3. Connecting data together to form interesting leads, visual ideations for representing the data, iterations, visual design
4. Continuous evaluation for feedback on interactions to improve the visualizations
5. Compilation of the visualizations on a website using existing softwares and platforms.

Secondary Research

Examples of relevant Data Visualizations

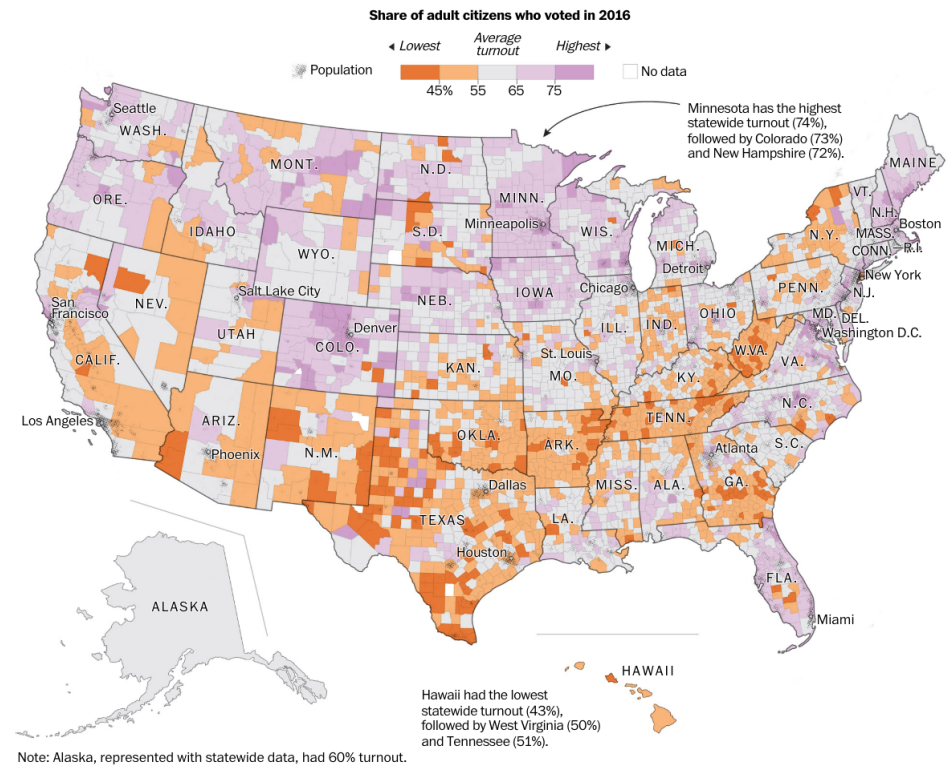
What the 2018 Campaign Looks Like in Your Hometown^[1]

More than three million 2018 election ads were analyzed by Bloomberg News across 210 local television markets to create these insightful maps of television political ad topics across the United States. Our team would love to see the market testing that went into these decisions.



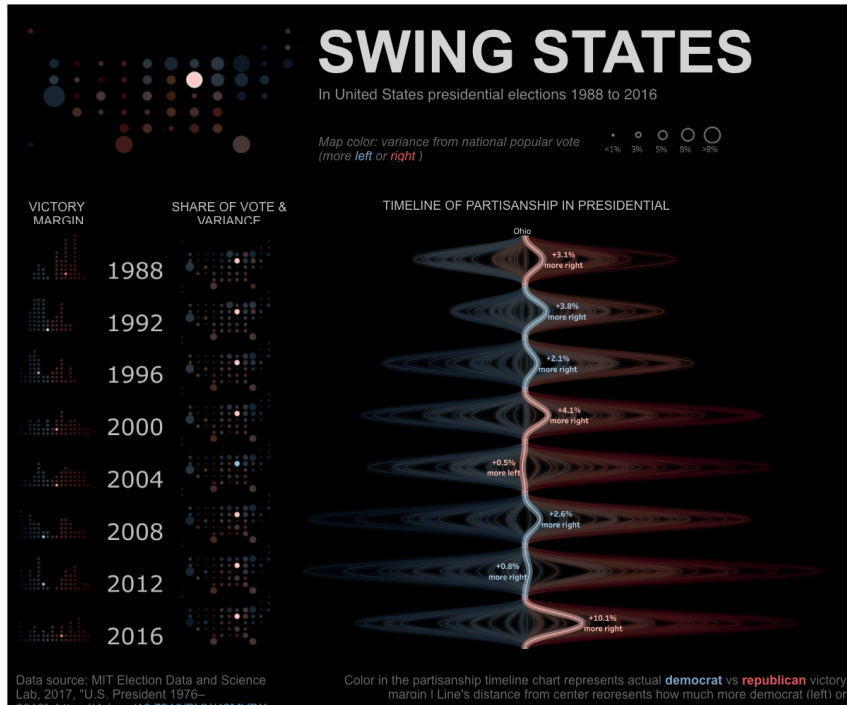
The geography of voting – and not voting^[2]

Record-setting voter turnout was projected for the 2018 midterms, but was that a high bar? Pew Research suggests United States voter turnout often trails other developed nations. This Washington Post visualization shows voter turnout county by county.



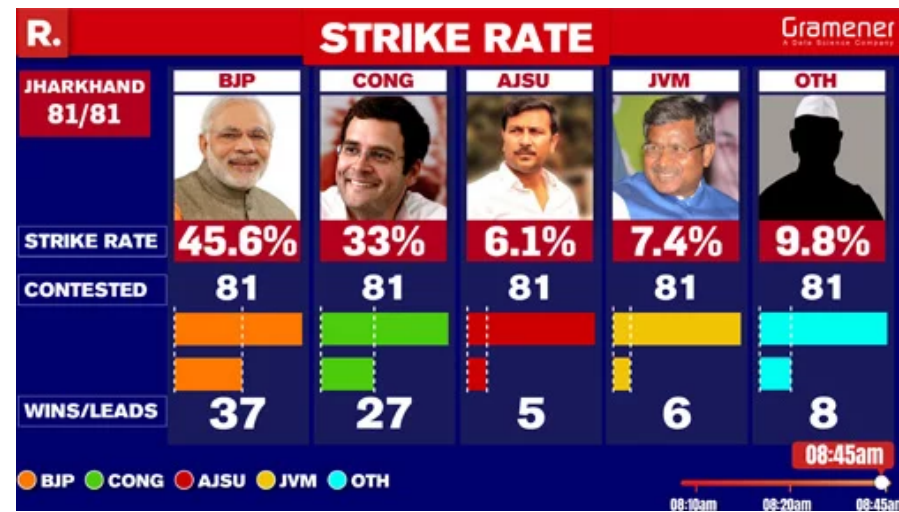
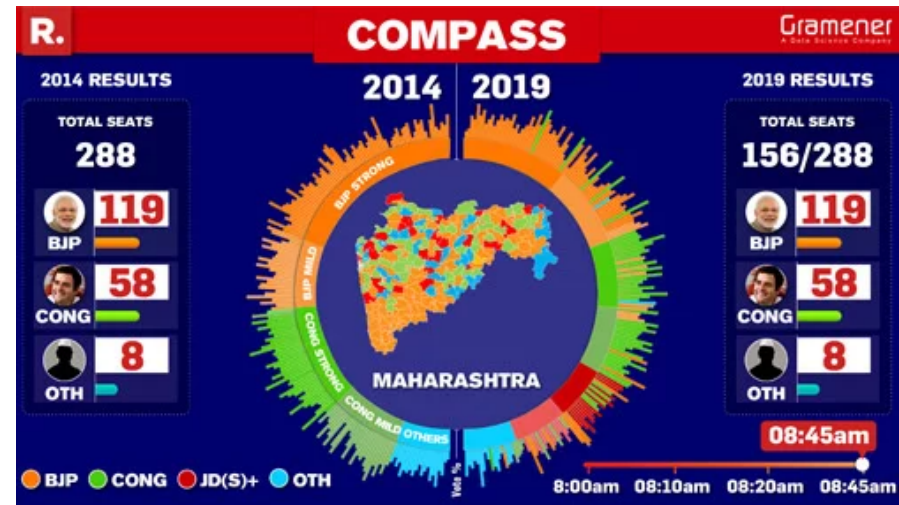
Partisanship & Swing States in U.S. Elections^[3]

Are the traditional swing states as swingy as they're made out to be? A look at the change in partisanship and their proportion of the national vote

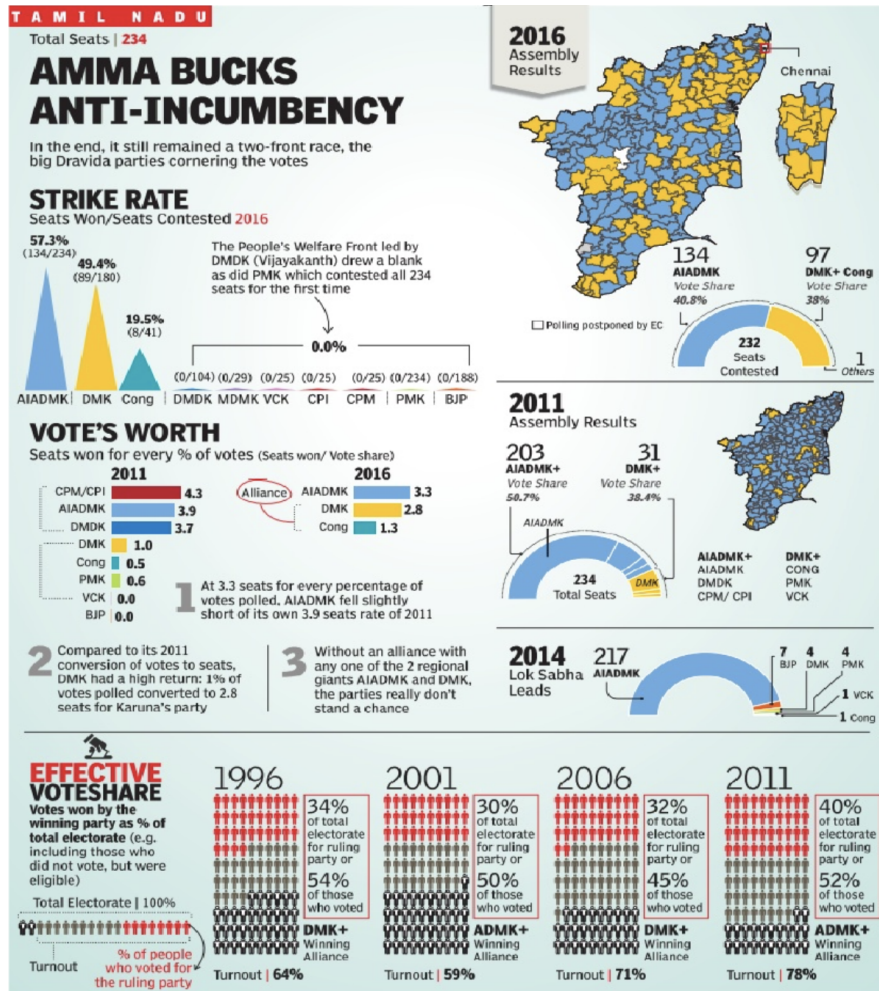


Gujarat Assembly Elections 2017^[4]

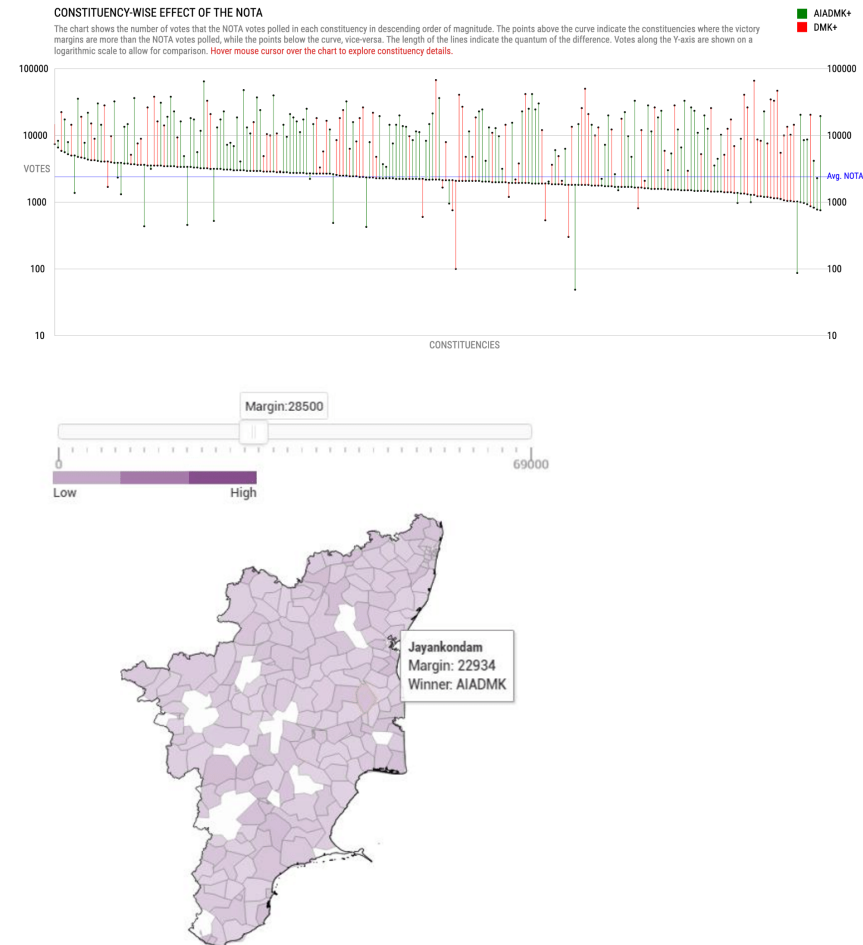
Gramener partnered with Republic TV to deliver election insights with real-time dynamic visualization continued during Assembly Elections 2018, and the General Elections 2019



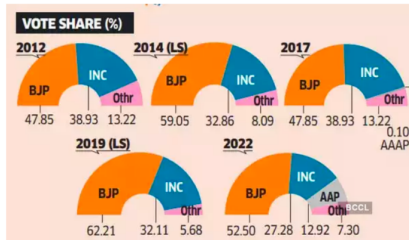
Tamil Nadu Assembly Elections 2016 Coverage by The Times of India



Visualization of Election Data: Using Interaction Design and Visual Discovery for Communicating Complex Insights^[5]

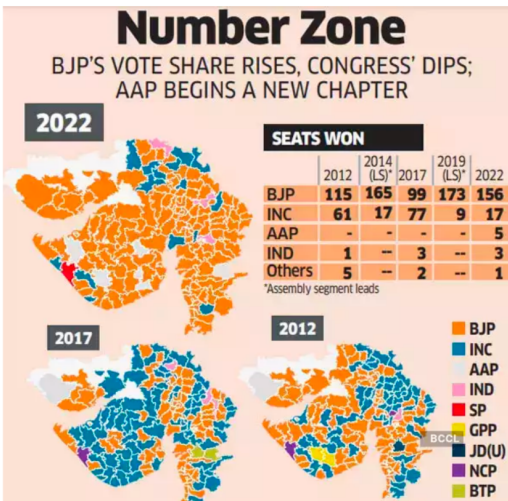
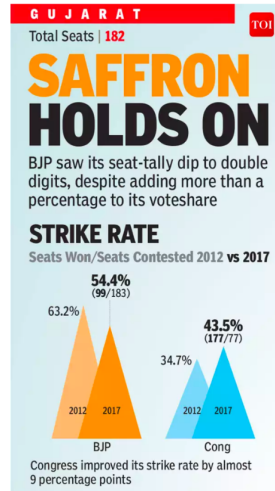


How BJP managed massive victory in Gujarat elections: Six key takeaways^[6]

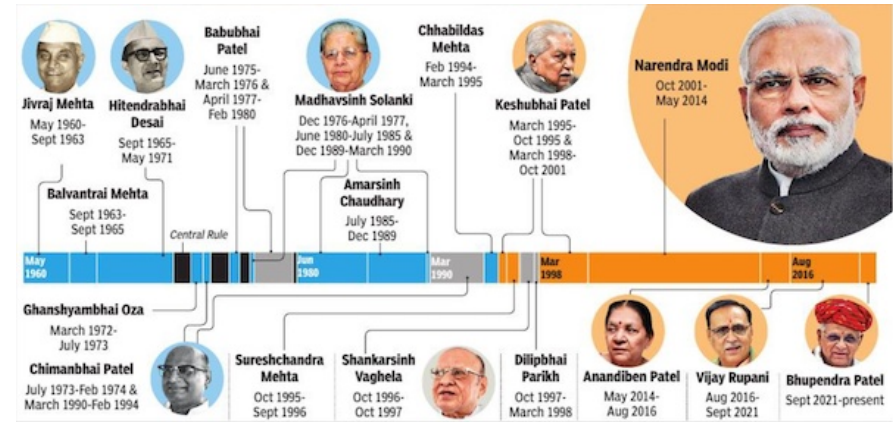


MARGINS
50k-plus victory margin for 51 BJP winners, 11 win by 1L+ votes

No. of Candidates	2012	2017	2022
0s1k votes	4	7	2
1ks2k	6	9	2
2ks5k	26	20	12
5ks10k	28	27	13
10ks20k	44	42	28
20ks50k	57	56	74
50ks1Lakh	16	19	40
1 Lakh +	1	2	11

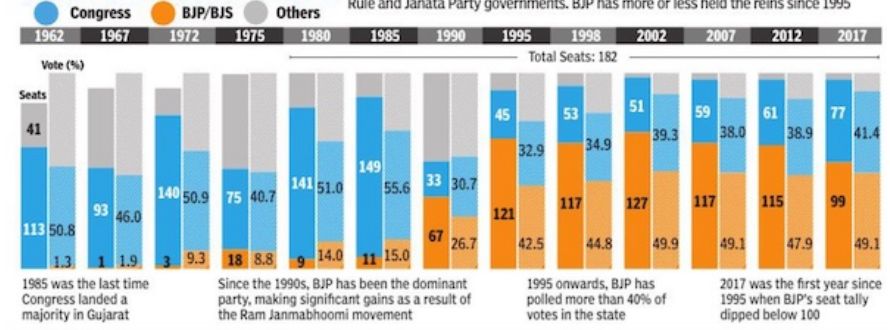


Gujarat A story of Bjp's rise more than Cong's decline^[7]

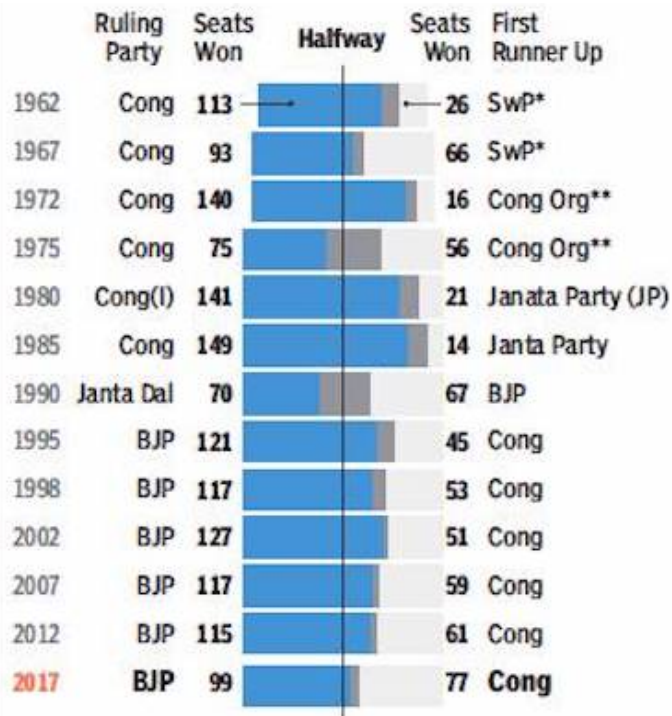


GUJARAT A STORY OF BJP'S RISE MORE THAN CONG'S DECLINE

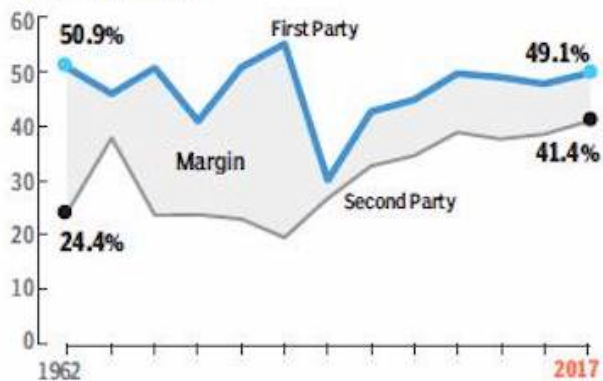
In 1962, BJP's precursor BJS won only 1.3% of the votes in Gujarat to Congress's 50.8%. By 1995, BJP's vote share had crossed 40% and has remained in the high-40s since 2002. Post 2002, neither has the Congress vote share dipped below 38%, going up to 41.4% in 2017. BJP and Congress have run Gujarat for about equal lengths of time. Congress's stint from 1960 to 1990 was interspersed with brief periods of President's Rule and Janata Party governments. BJP has more or less held the reins since 1995



1962-2017: Gujarat Assembly Elections^[8]



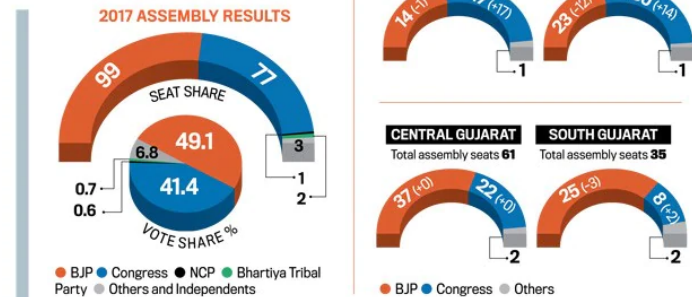
Vote share %



Close shave: BJP's Gujarat win doesn't eliminate troubles ahead of 2019^[9]

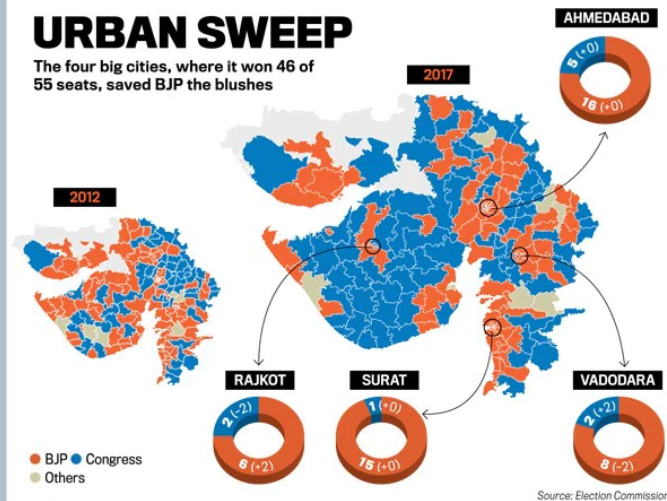
THE BATTLE OF GUJARAT

North Gujarat, where it gained 17 seats, and Saurashtra and Kutch (+14) is where the Congress took the battle to the BJP



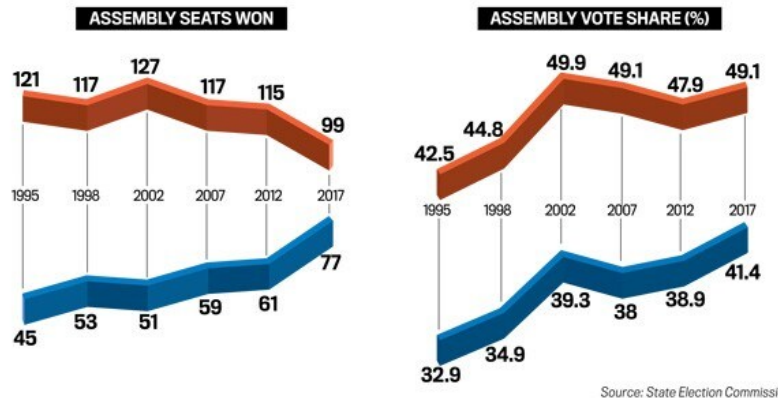
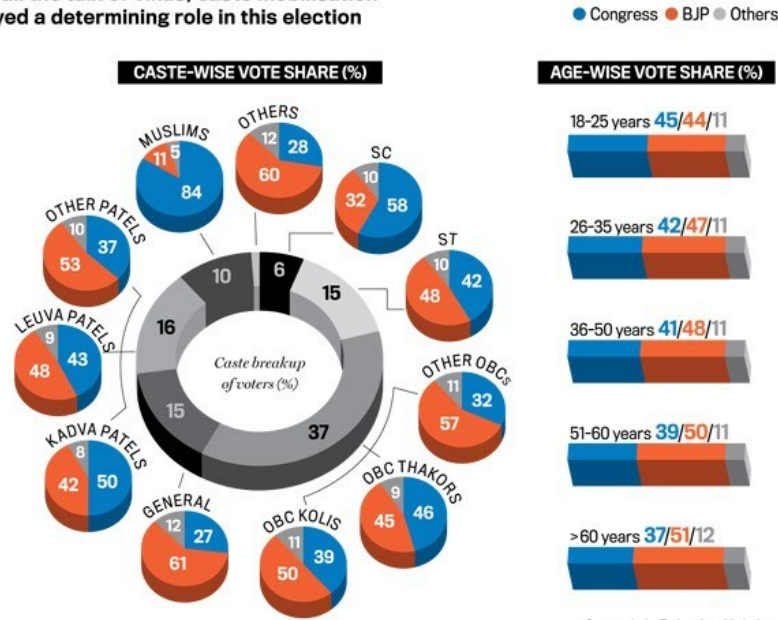
URBAN SWEEP

The four big cities, where it won 46 of 55 seats, saved BJP the blushes

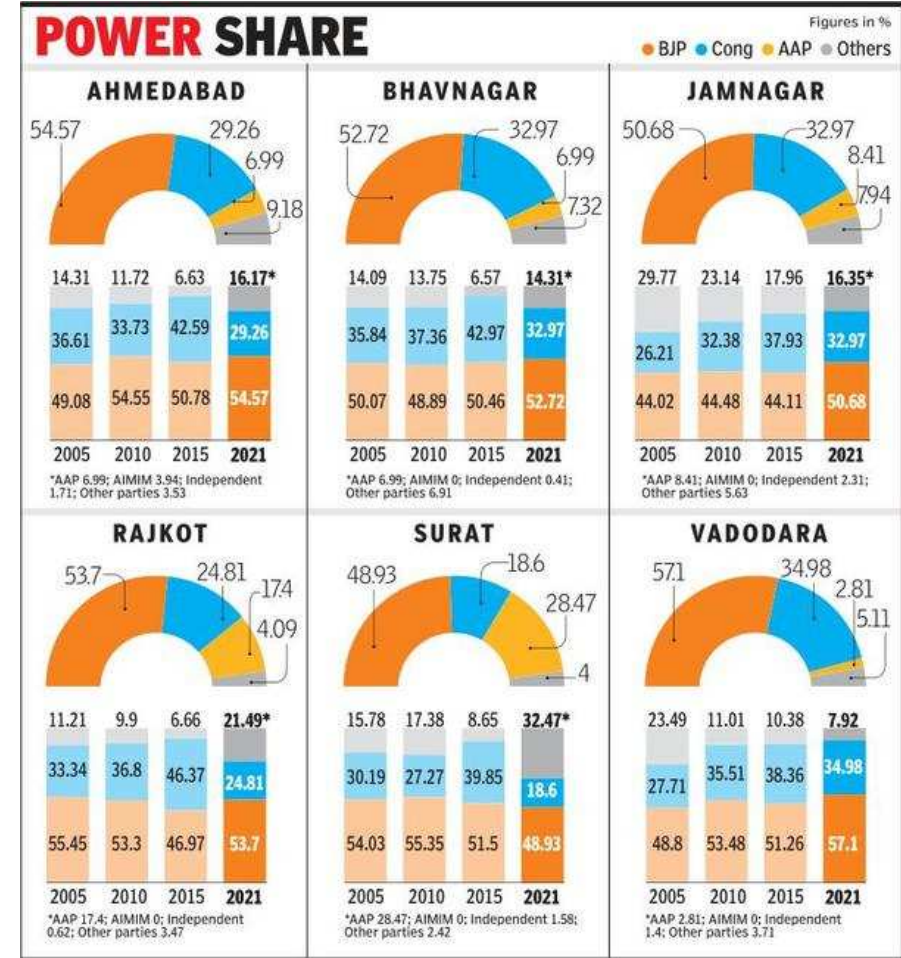


CASTE RULES

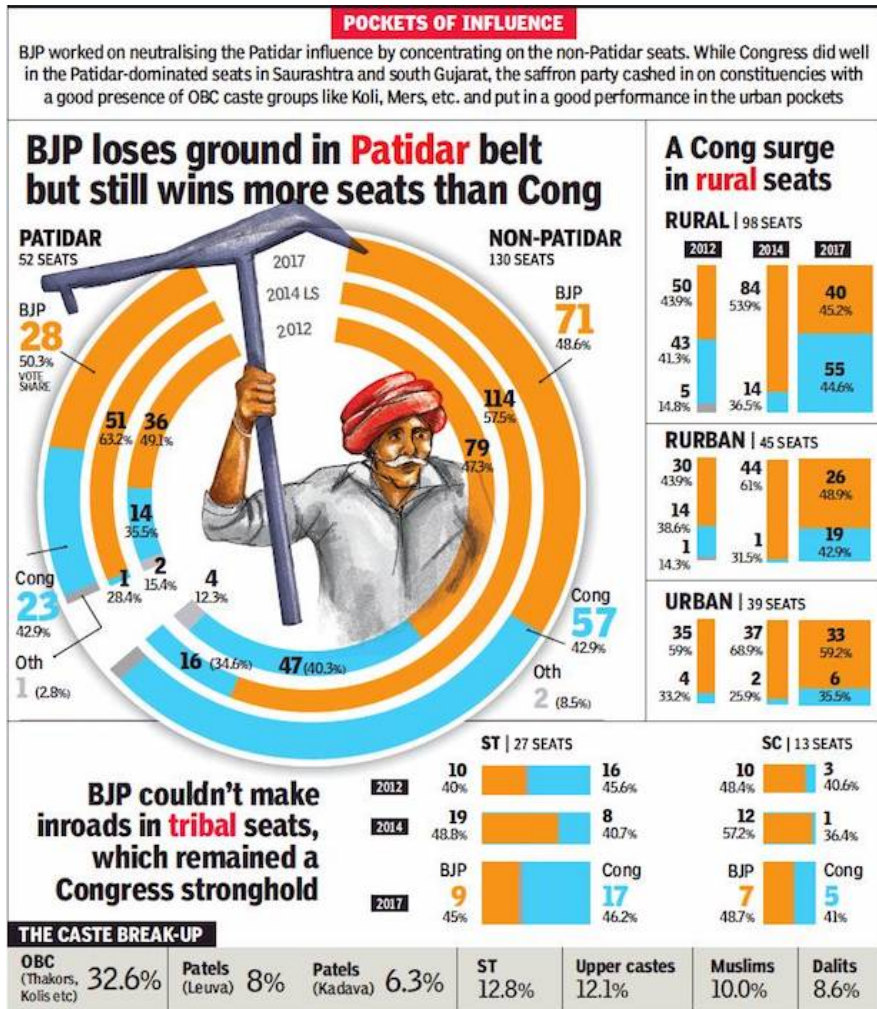
For all the talk of vikas, caste mobilisation played a determining role in this election



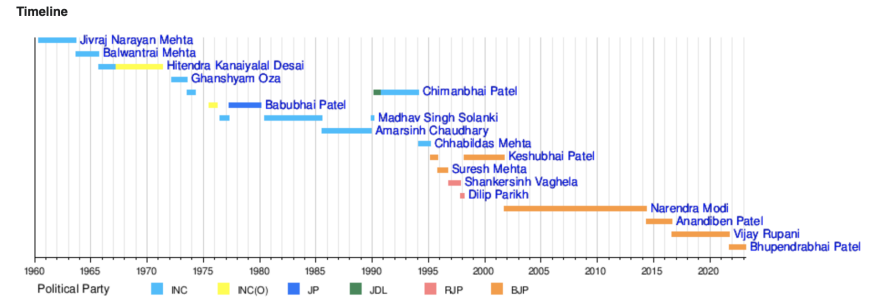
Gujarat municipal polls: AAP bags 13.28% vote share^[10]



The performance of the BJP and Congress in the various regions and among various communities in the elections of 2012, 2014 and 2017^[11]



List of chief ministers of Gujarat ^[12]



Decoding the Gujarat election in 35 charts ^[13]

Main Parties' Vote Share in the Last Three Gujarat Elections (2012-2022)

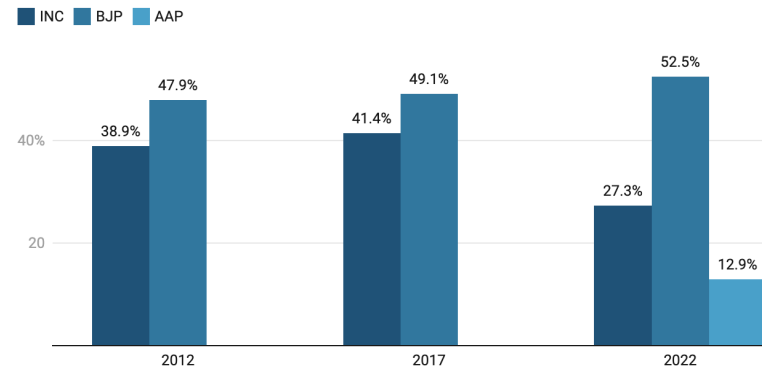
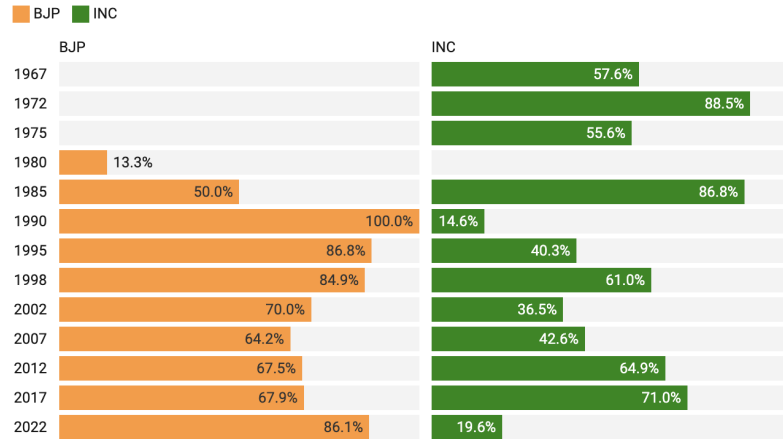


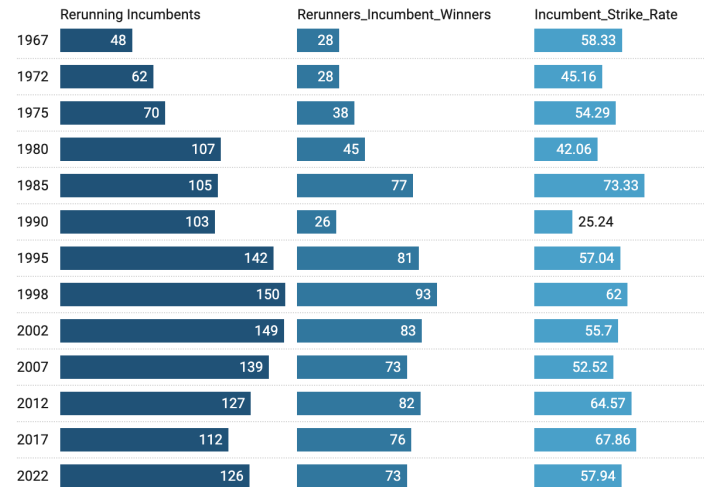
Chart: Trivedi Centre for Political Data · Source: Lok Dhaba · Get the data · Download image · Created with Datawrapper

Incumbents Strike Rate for BJP and INC for Gujarat State Elections 2022



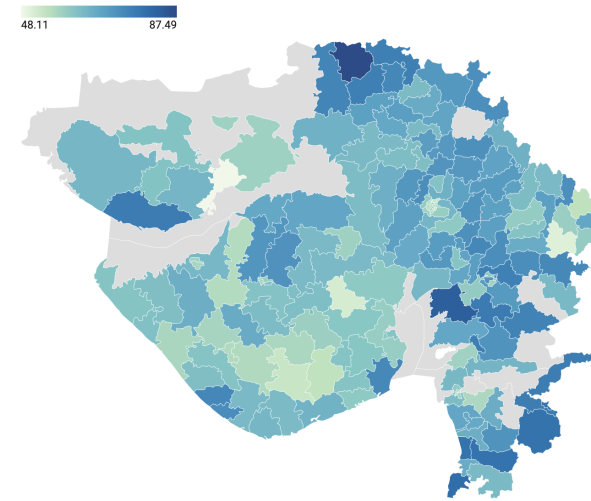
Source: TCPD (Individual Incumbency Dataset) • Created with Datawrapper

Incumbents Performance in Gujarat State Elections 2022



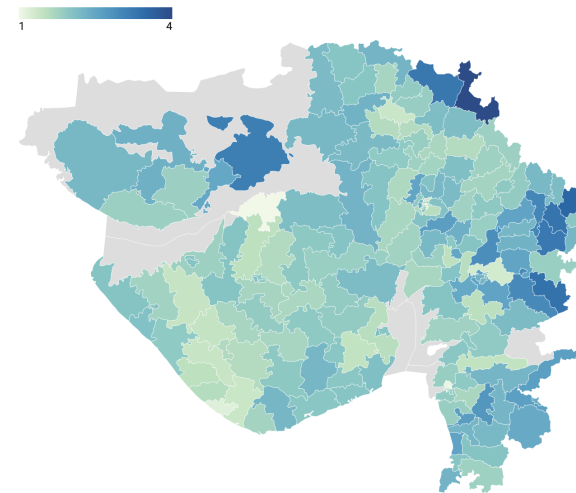
Source: TCPD-IID • Get the data • Created with Datawrapper

Voter-Turnout in 2022 Gujarat State Assembly Elections



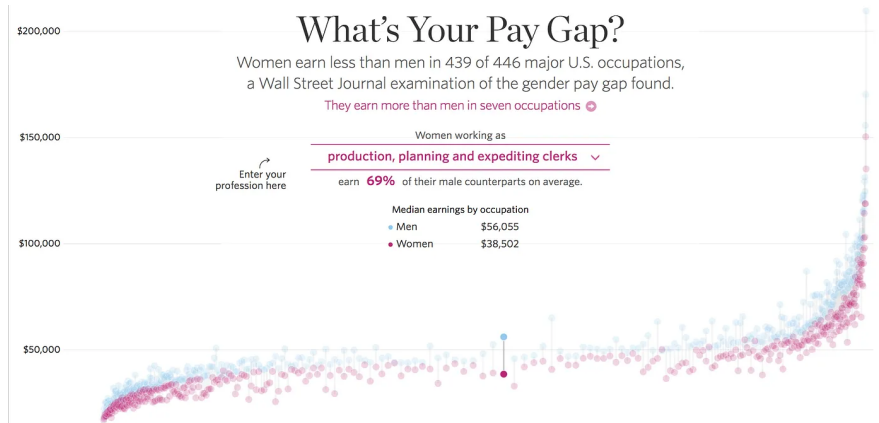
Map: Trivedi Centre for Political Data • Source: Lok Dhaba • Get the data • Created with Datawrapper

NOTA Vote Share in 2022 Gujarat State Assembly Elections

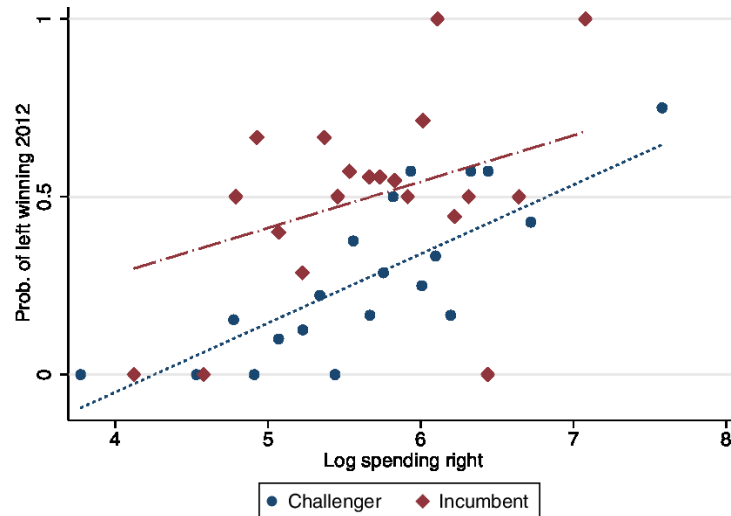


Map: Trivedi Centre for Political Data • Source: Lok Dhaba • Created with Datawrapper

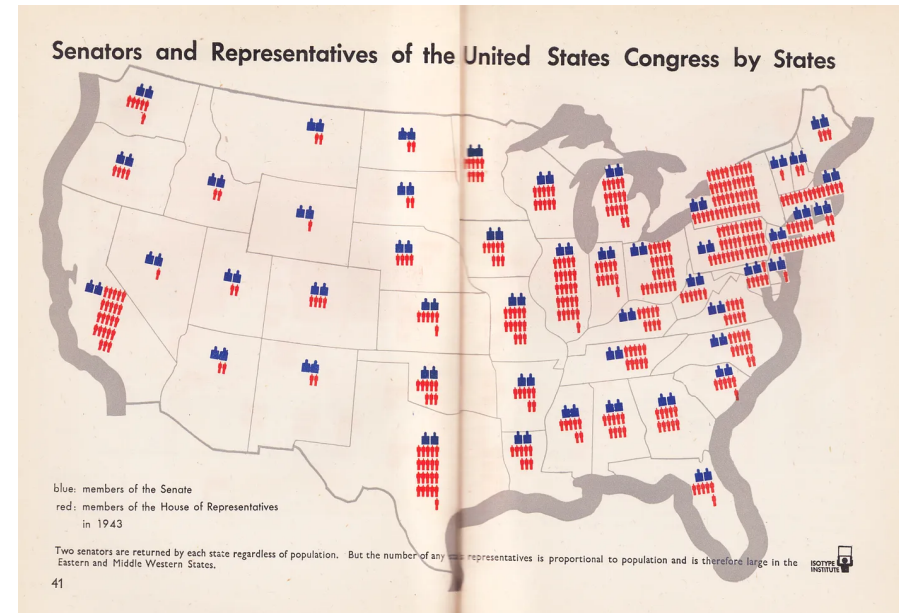
Wall Street Journal: What's Your Pay Gap? ^[14]



Incumbency advantage and shocks in the electorate ^[15]



Exploring Isotype Charts: “Our Two Democracies At Work” Part 3 - Medium ^[16]

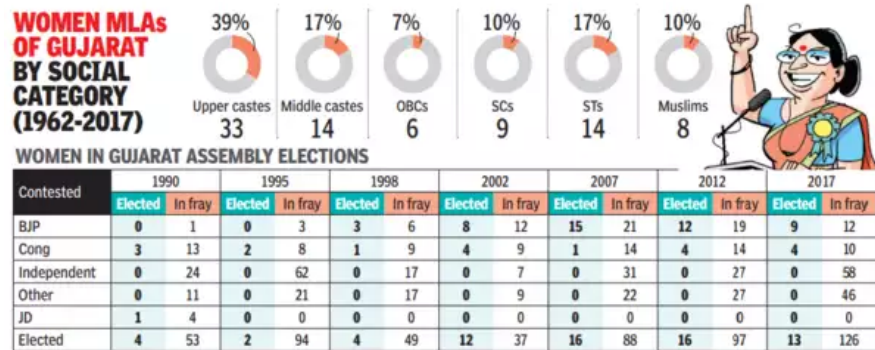


Isotype is a highly refined picture language designed for educating people with as few words as possible. Isotypes often mix qualitative and quantitative data. By simplifying the concepts trying to be communicated (often qualitative) and then elaborating with pictograms (quantitative), Isotypes aggregate both types of information into an easy to understand message.

“Are Vertical Line Charts Ever a Good Idea?” Nightingale Magazine ^[17]



Gujarat polls 2022 | Tickets: Highest number of women get seat on the triangular table ^[18]



Reflections from studying Data Visualizations on Indian Elections

1. **Inadequate representation of regional variations:**

Indian elections exhibit significant regional variations in terms of voting patterns, demographics, and political dynamics. Visualizations that do not adequately capture and represent these regional variations may fail to provide a comprehensive understanding of the electoral landscape. It is crucial to incorporate regional granularity in visualizations to accurately reflect the diversity and complexity of Indian elections.

2. **Limited historical comparisons:** Indian elections span several decades, and historical trends can provide valuable insights into political shifts and voter behavior. But there are few to none visualizations that span across multiple years and cover all past elections, inhibiting the exploration of long-term trends and patterns.

3. **Overemphasis on top-level results:** While overall election results are important, focusing solely on top-level numbers and outcomes may overlook the subtler nuances and dynamics of Indian elections. Visualizations that do not dive deeper into

constituency-level data, vote shares, or candidate profiles may miss out on the intricacies that shape electoral outcomes.

4. **Incomplete demographic representation:** Demographic factors such as age, gender, caste, and religion play significant roles in Indian elections. However, some visualizations may not adequately capture or highlight these demographic dimensions, leading to an incomplete understanding of voter behavior and political dynamics.

Addressing these shortcomings requires a focus on comprehensive data representation, contextual information, interactive features, regional granularity, historical comparisons, demographic dimensions, etc. By addressing these areas, data visualizations on Indian election data can provide a more insightful and comprehensive understanding of the electoral landscape.

Data Collection & Ideation

Raw Election Data

Lok Dhaba - Complete data set for Elections^[1]

Lok Dhaba is a repository of Indian election results - both Vidhan Sabha (state level) and Lok Sabha (national level) - beginning 1962. The data in Lok Dhaba comes originally from the statistical reports published by the Election Commission of India. It is a project by Trivedi Center for Political Data at Ashoka University.

Year	Candidate	Sex	Party	Constituency Name	Position	Poll No	Votes	Age	Candidate...	Valid Votes
1962	MADHAVSINHJI ...	M	SWA	ABDASA	1	0	19699			35387
1962	JUGATRAM DALP...	M	INC	ABDASA	2	0	13894			35387
1962	PRANLAL NANC...	M	NJP	ABDASA	3	0	1794			35387
1962	GULABSHANKER...	M	SWA	BHUJ	1	0	24209			36123
1962	KUNDANLAL JAS...	M	INC	BHUJ	2	0	10306			36123
1962	MOHANLAL LALJI	M	IND	BHUJ	3	0	1608			36123
1962	MAHARAJ KUMA...	M	SWA	MANDVI	1	0	26796			39988
1962	JUMAKHLAL LAK...	M	INC	MANDVI	2	0	13192			39988
1962	MULJI PARSOTTAM	M	SWA	ANJAR	1	0	22317			43473
1962	MAHIPAL MULSH...	M	INC	ANJAR	2	0	14871			43473
1962	PRATAPRAY BAC...	M	JS	ANJAR	3	0	4700			43473
1962	TARAMATI PRAN...	F	NJP	ANJAR	4	0	1585			43473

List of Variables in the Dataset -

- 1) Assembly Number
- 2) Constituency Number
- 3) Year
- 4) Position (Rank of candidate)
- 5) Candidate Name
- 6) Candidate Sex
- 7) Candidate Age
- 8) Party represented
- 9) Number of Votes
- 10) Constituency Name
- 11) Constituency Type (General, SC/ST, etc)
- 12) District Name
- 13) Sub Region
- 14) Number of Candidates contesting the constituency
- 15) Voter Turnout Percentage
- 16) Vote Share Percentage
- 17) Vote Margin
- 18) Vote Margin Percentage
- 19) No. of times candidate has contested
- 20) Last constituency the candidate contested for
- 21) Whether candidate is a Turncoat
- 22) Whether candidate is Incumbent
- 23) My Neta Educational Qualification
- 24) Main Profession of Candidate

Problems in the Raw Data

Inconsistent variables

The same variables are named differently for data across the years (Example: M, male, MALE; or AAP, AAAP, Aam Admi, Aam Aadmi)

VALUE	FREQUENCY
M	17,400
F	809
MALE	157
FEMALE	11
female	2

Since the number of variables are not too many, the data can be cleaned up very easily by using the 'Find and Replace' command

Inconsistent values

Similar to the variables, most values like Candidate names are not consistent through the years. Any program like Excel or

Tableau treats these as unique values and thus any attempt or formula to calculate repeats will be inaccurate.

MOHANSINH CHHOTUBHAI RATHAVA
RATHWA MOHANSINH CHHOTUBHAI
MOHANSINH CHHOTUBHAI RATHAVA
RATHWA MOHANSINH CHHOTUBHAI
RATHVA MOHANSINH CHHOTUBHAI
RATHWA MOHANSINH CHOTUBHAI
MOHANSINH RATHWA

Since the number of variables are many (around 19,000) it is very difficult to clean the data. Most of it has to be done manually for the use cases required.

Shuffling and renaming of constituencies

Over the last 30-40 years, many regions have been renamed, renumbered, split or combined into different constituencies. Thus, tracking changes for particular areas requires manual effort in matching the data

Assembly_No	Constituency_No	Year	Constituency_Name
14	135	2022	SAVLI
13	135	2017	SAVLI
12	135	2012	SAVLI
11	135	2007	PETLAD
10	135	2002	PETLAD
9	135	1998	PETLAD
8	135	1998	PETLAD
7	135	1998	PETLAD
6	135	1995	PETLAD
5	135	1995	PETLAD
4	135	1995	PETLAD
3	135	1972	BARODA CITY
2	135	1972	BARODA CITY
1	135	1962	DEDIAPADA

Assembly_No	Constituency_No	Year	Constituency_Name
12-14	141	2012-2022	VADODARA CITY
4-11	147	1975-2007	BARODA CITY
4-11	151	1975-2008	BARODA RURAL
2-3	135	1967-1972	BARODA CITY
2-4	138	1967-1973	BARODA RURAL
1	123	1962	BARODA NORTH
1	124	1962	BARODA CITY WEST
1	125	1962	BARODA CITY EAST

Preliminary Ideations

Gender Representation

2022 - 14th	AAP	BJP	INC	IND
Female candidates who WON	0	15	1	0
Female candidates	6	17	14	55
Male candidates who WON	5	142	16	3
Male candidates	175	165	165	568

2017 - 13th	AAP	BJP	INC	IND
Female candidates who WON	0	11	4	0
Female candidates	2	14	10	67
Male candidates who WON	0	104	76	3
Male candidates	27	187	186	831

2012 - 12th	AAP	BJP	INC	IND
Female candidates who WON	-	14	4	0
Female candidates	-	22	15	31
Male candidates who WON	-	119	64	1
Male candidates	-	185	187	759

1995 - 8th	AAP	BJP	INC	IND
Female candidates who WON	-	0	2	0
Female candidates	-	4	8	62
Male candidates who WON	-	123	44	16
Male candidates	-	182	176	1601

1990 - 7th	AAP	BJP	INC	IND
Female candidates who WON	-	0	3	0
Female candidates	-	1	15	23
Male candidates who WON	-	67	30	11
Male candidates	-	142	168	957

1985 - 6th	AAP	BJP	INC	IND
Female candidates who WON	-	0	15	0
Female candidates	-	1	20	10
Male candidates who WON	-	11	134	8
Male candidates	-	123	162	505

2007 - 11th	AAP	BJP	INC	IND
Female candidates who WON	-	15	1	0
Female candidates	-	22	14	29
Male candidates who WON	-	101	58	2
Male candidates	-	160	159	451

2002 - 10th	AAP	BJP	INC	IND
Female candidates who WON	-	8	4	0
Female candidates	-	12	9	8
Male candidates who WON	-	121	50	2
Male candidates	-	175	176	360

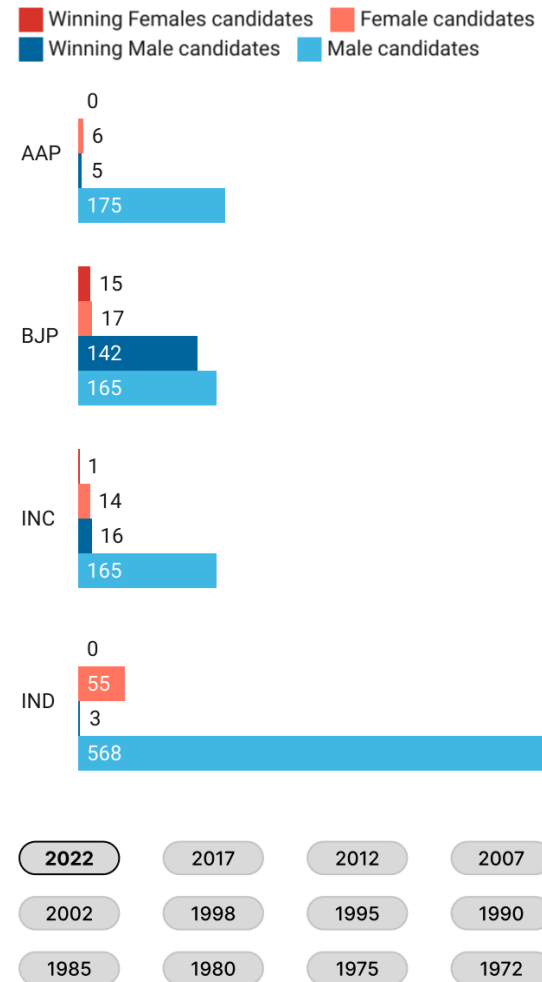
1998 - 9th	AAP	BJP	INC	IND
Female candidates who WON	-	3	1	0
Female candidates	-	6	9	18
Male candidates who WON	-	115	54	4
Male candidates	-	180	174	421

1980 - 5th	AAP	BJP	INC	IND
Female candidates who WON	-	0	5	0
Female candidates	-	1	8	11
Male candidates who WON	-	9	136	10
Male candidates	-	126	208	425

1975 - 4th	AAP	BJP	INC	IND
Female candidates who WON	-	-	1	1
Female candidates	-	-	6	2
Male candidates who WON	-	-	74	14
Male candidates	-	-	175	363

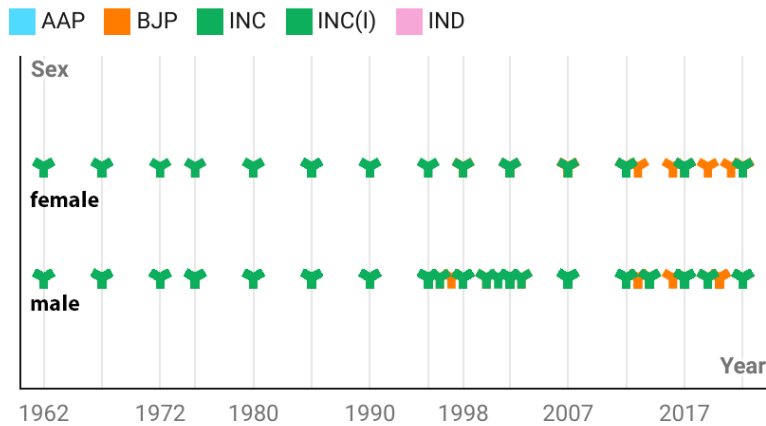
1972 - 3rd	AAP	BJP	INC	IND
Female candidates who WON	-	-	1	0
Female candidates	-	-	1	0
Male candidates who WON	-	-	139	8
Male candidates	-	-	167	337

Interactive Visualisation for Gender Representation across major parties from 1972-2022 made on Figma using Datawrapper

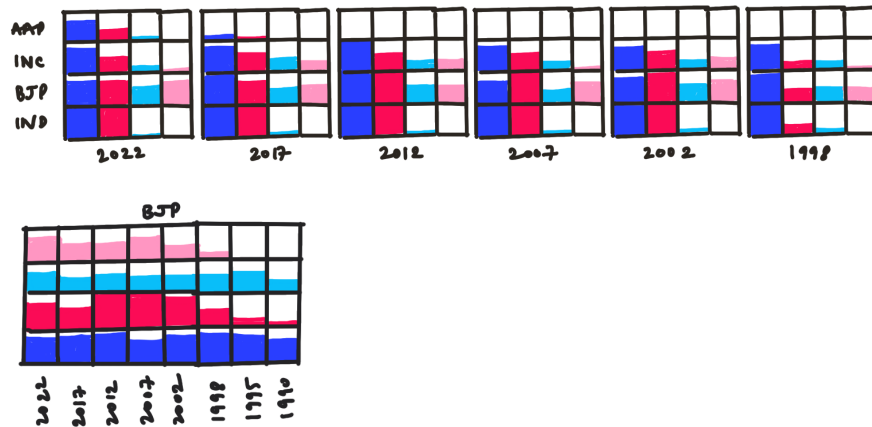


Using the 'COUNTIF' function, the total number as well as the number of winning candidates of Males and Females were calculated for each Assembly Election.

Visualizations on automatic tools like Datawrapper or Tableau were not able to represent absolute numbers w.r.t. Time scale

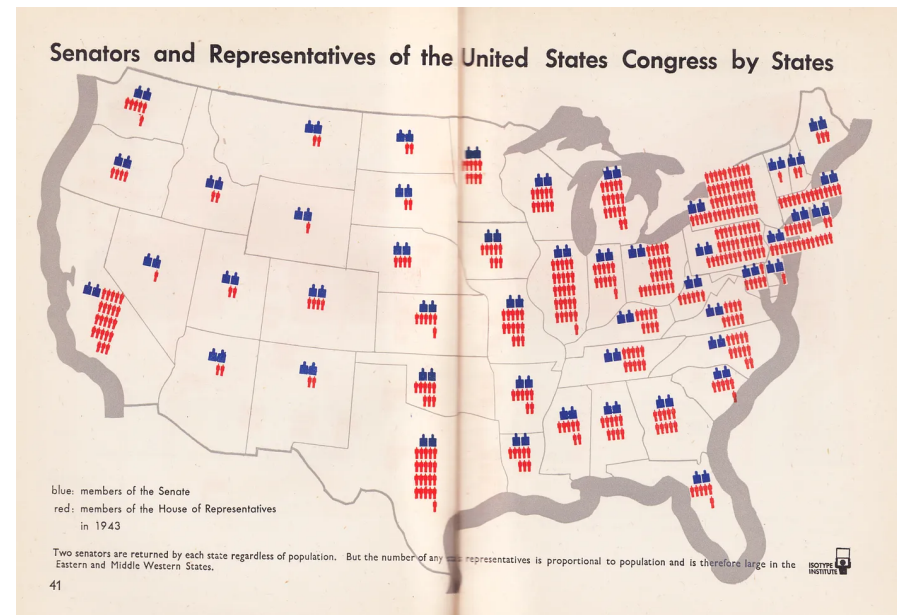


Sketches for visualizations based on largest value



Secondary Research

Exploring Isotype Charts: Isotype is a highly refined picture language designed for educating people with as few words as possible. Isotypes often mix qualitative and quantitative data. By simplifying the concepts trying to be communicated (often qualitative) and then elaborating with pictograms (quantitative). They aggregate both types of information into an easy to understand message.^[16]



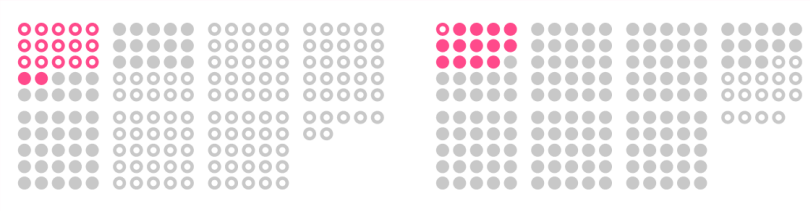
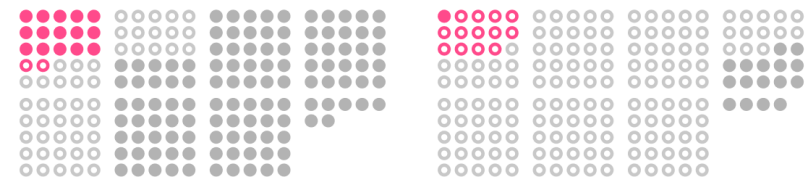
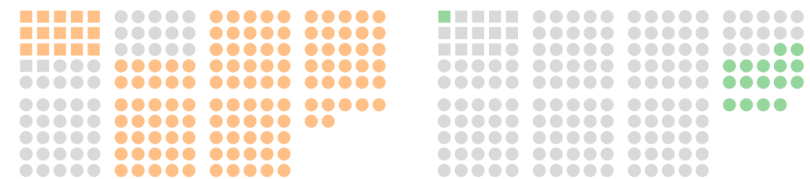
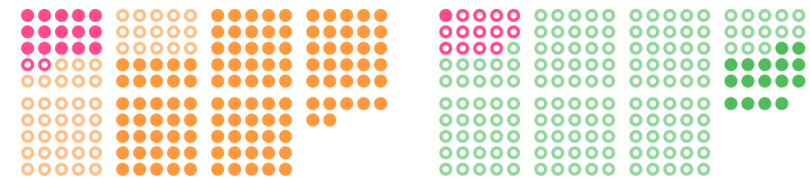
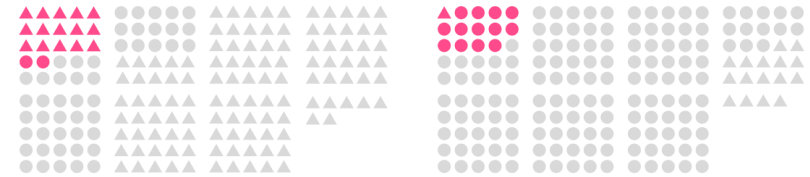
Experimenting with representation of absolute numbers for candidate numbers, wins, and gender across years.

The following considerations were made -

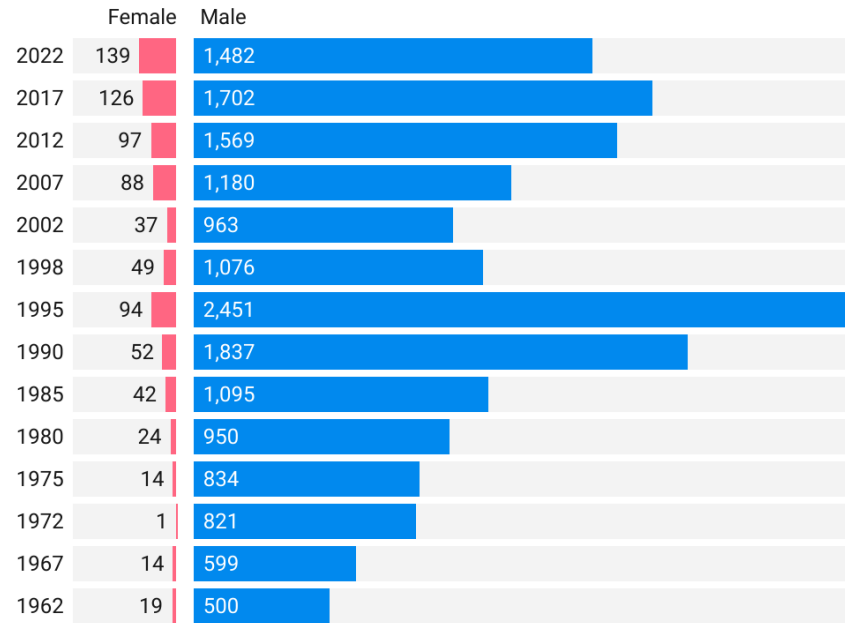
- 1) Blocks of 5x5 for easy calculations and chunking
- 2) The various factors to be represented are - Gender, No. of candidates, No. of wins, Party, Election Year
- 3) Main theme is Gender - so which differentiation will highlight it best? Shape or color?
- 4) Due to the wide range of years being represented (10 elections), size of each form as well as visibility and the ability to differentiate must be taken care of

The highlighted visual representation was chosen since -

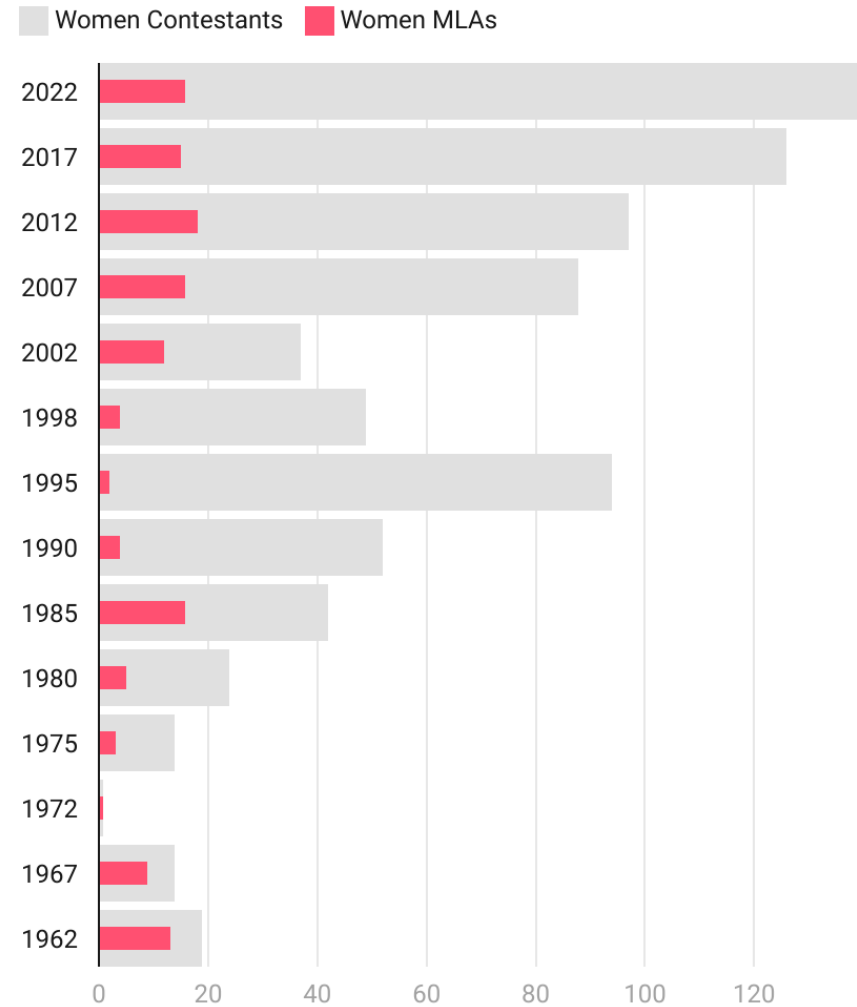
- 1) The contrast between pink and gray easily highlights the gender, which is the main theme of the visualization
- 2) Using only circles since no differentiation can be made between other shapes and the circle in small size
- 3) Using filled and outline circles for winning and losing candidates respectively such that darker the area of the visualization - more the number of winning candidates



Total number of Female vs Male candidates over the last 14 Assembly Elections

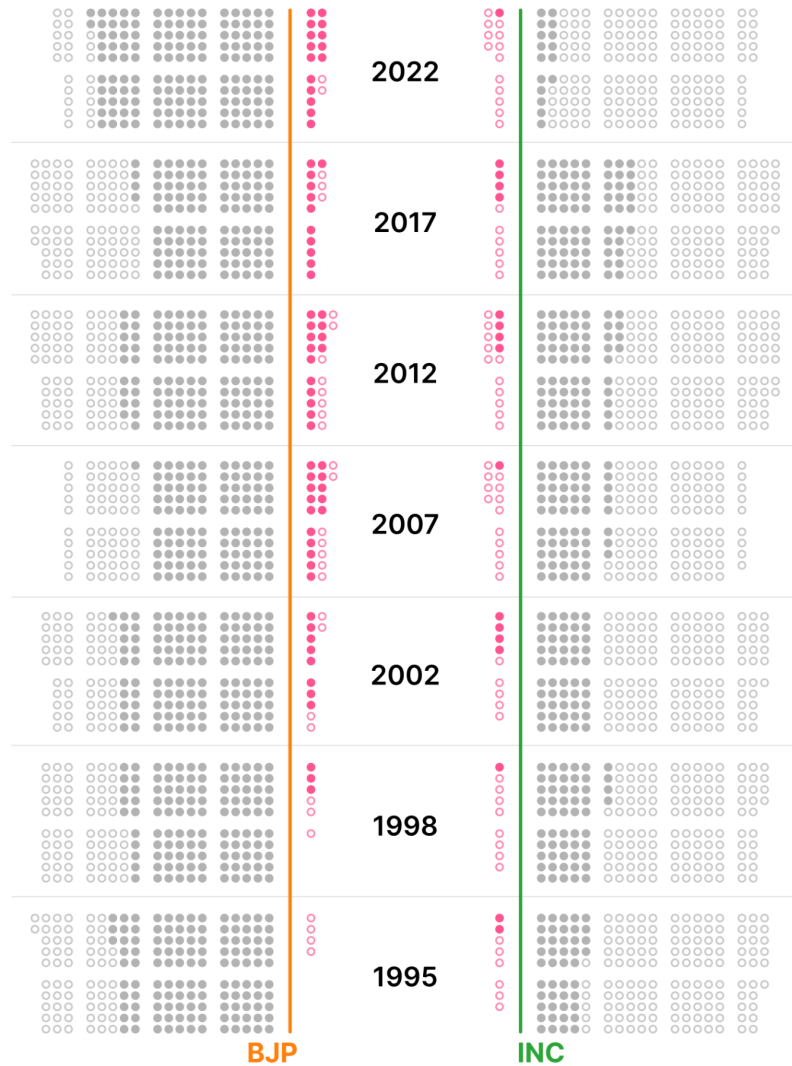


Total number of Female Contestants vs MLAs over the last 14 Assembly Election - Despite an increase in the number of women contestants, the wins by them have been decreasing

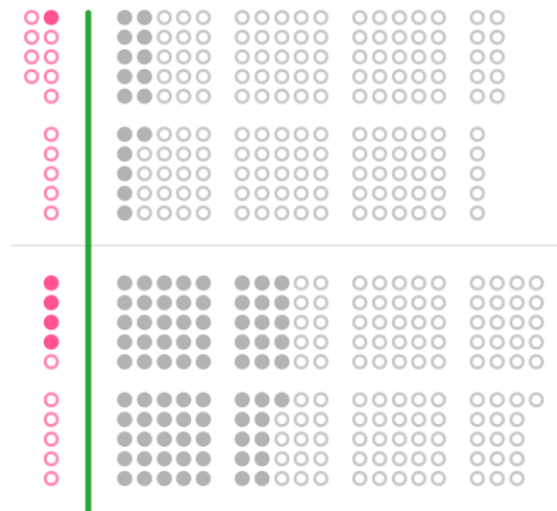


Gender Representation in INC and BJP parties over the last 7 Gujarat Assembly Elections

	Male	Female
Contestants	○	○
MLAs	●	●



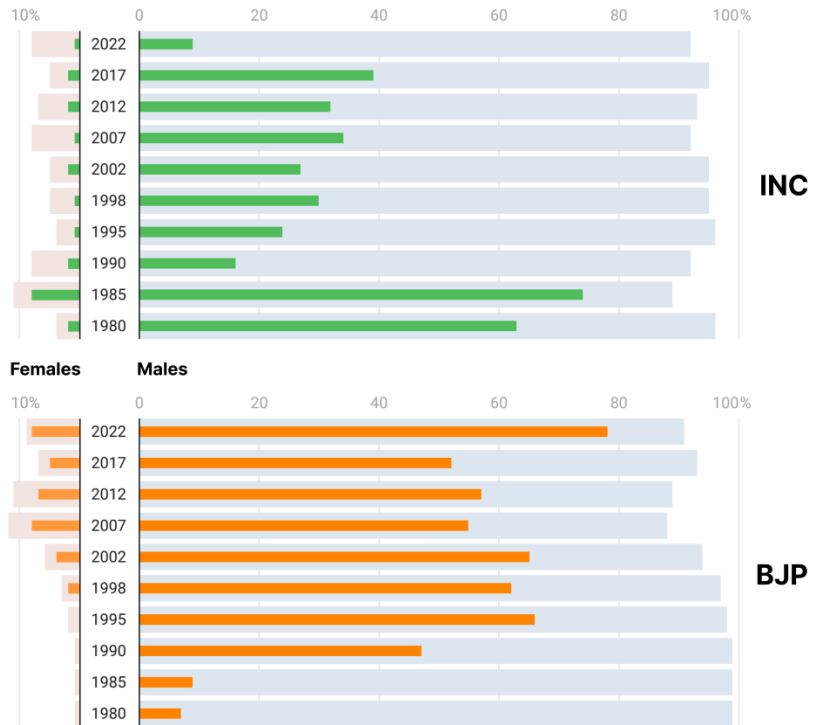
	Male	Female
Contestants	○	○
MLAs	●	●



The data visualization highlights the following points -

- 1) The number of female contestants and MLAs is highly disproportionate as compared to the number of male contestants and MLAs
- 2) The number of female contestants have been steadily increasing
- 3) Both male and female contestants of BJP have been winning since 1995

Gender Representation in INC and BJP parties over the last 10 Gujarat Assembly Elections



The coloured bullet bars (Green/Orange) represent the winning contestants from that party

This visualization highlights that the number of INC female contestants have not been increasing like BJP's, but they had a better female representation consistently in earlier years.

Party Performance

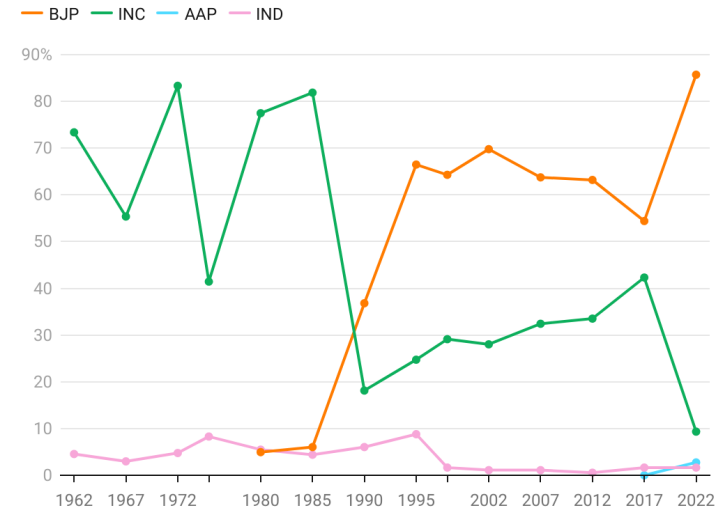
India follows the 'First Past the Post' system, in which the state is divided into small geographical units called constituencies. Every constituency elects one representative, where a voter votes for one candidate. A candidate who gets more votes than other candidates is declared the winner. The winning candidate need not get a majority, i.e. 50%+1 of the votes. In the case of FPTP, a party may get more seats than votes in the legislature. Thus a party can win more seats in a state even if its combined votes are less than another party.

Seat	1962	1967	1972	1975	1980	1985	1990	1995	1998	2002	2007	2012	2017	2022
BJP					4.95	6.04	36.81	66.48	64.29	69.78	63.74	63.19	54.4	85.71
INC	73.38	55.36	83.33	41.44	77.47	81.87	18.13	24.73	29.12	28.02	32.42	33.52	42.31	9.34
AAP													0	2.75
IND	4.55	2.98	4.76	8.29	5.49	4.4	6.04	8.79	1.65	1.1	1.1	0.55	1.65	1.65

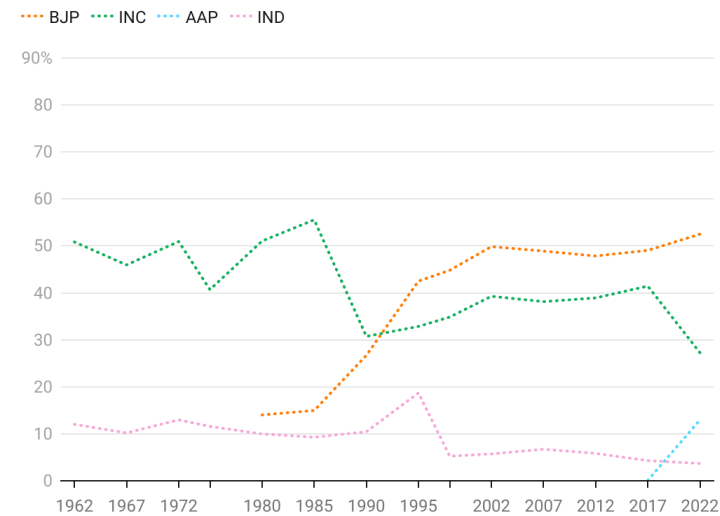
Vote	1962	1967	1972	1975	1980	1985	1990	1995	1998	2002	2007	2012	2017	2022
BJP					14.02	14.96	26.69	42.51	44.81	49.85	48.9	47.85	49.05	52.5
INC	50.84	45.96	50.93	40.7	51.04	55.55	30.74	32.86	34.85	39.28	38.14	38.93	41.44	27.28
AAP													0.1	12.92
IND	12.02	10.19	12.96	11.58	9.97	9.28	10.44	18.71	5.24	5.72	6.72	5.83	4.3	3.69

The following data visualizations are aimed at comparing the party performance in terms of Seat Share vs Vote Share.

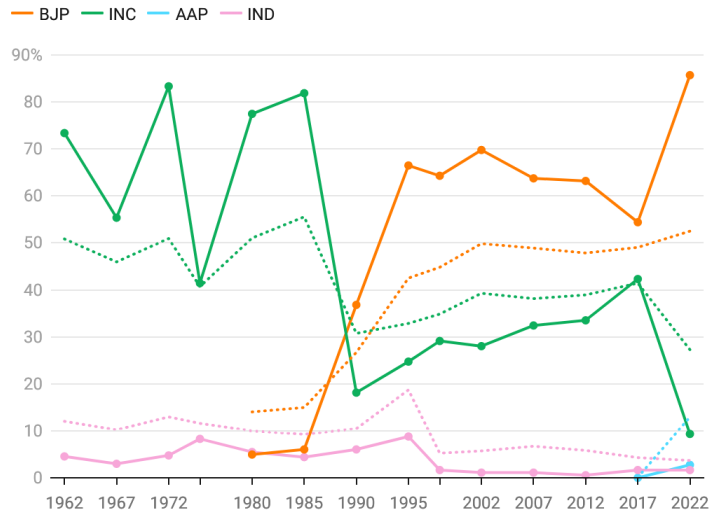
Seat Share



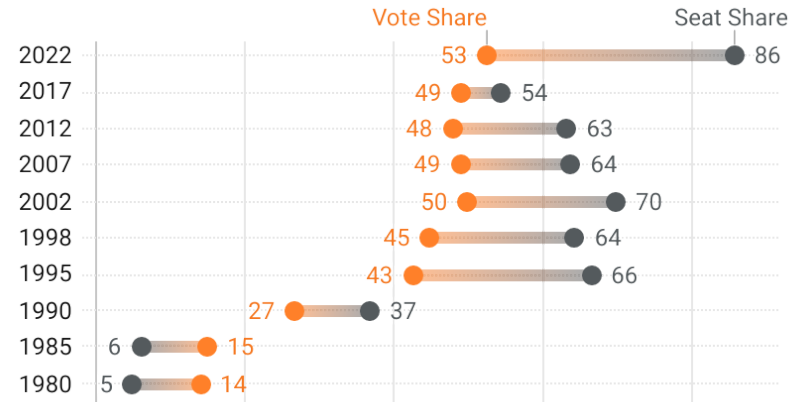
Vote Share



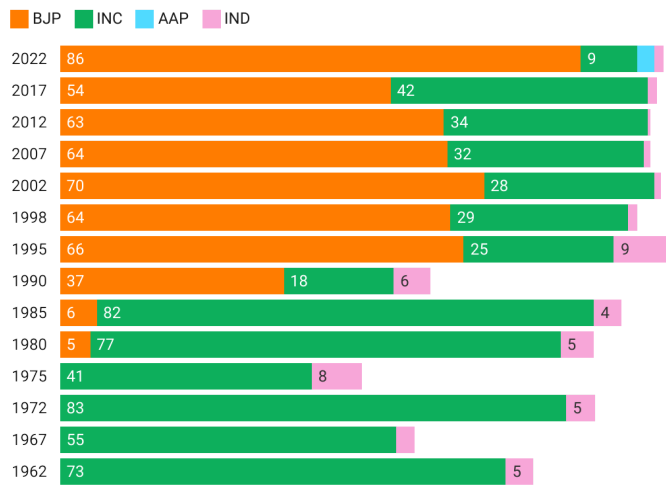
Seat vs Vote Share



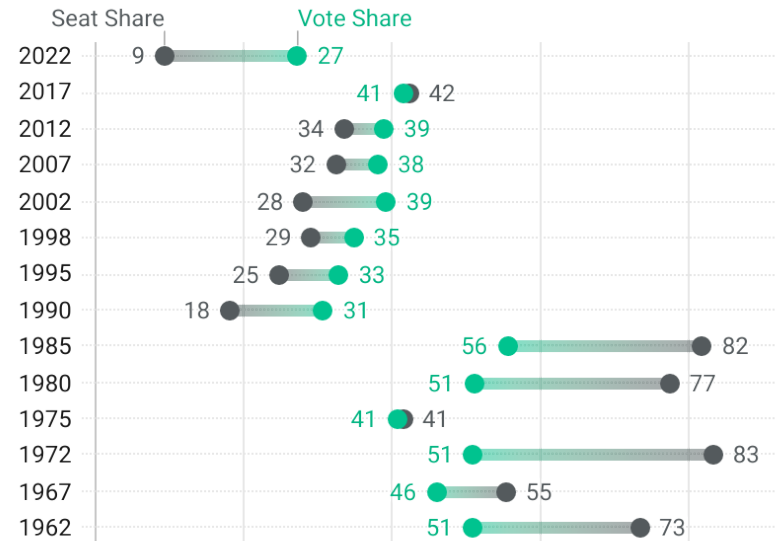
BJP's Seat vs Vote Share



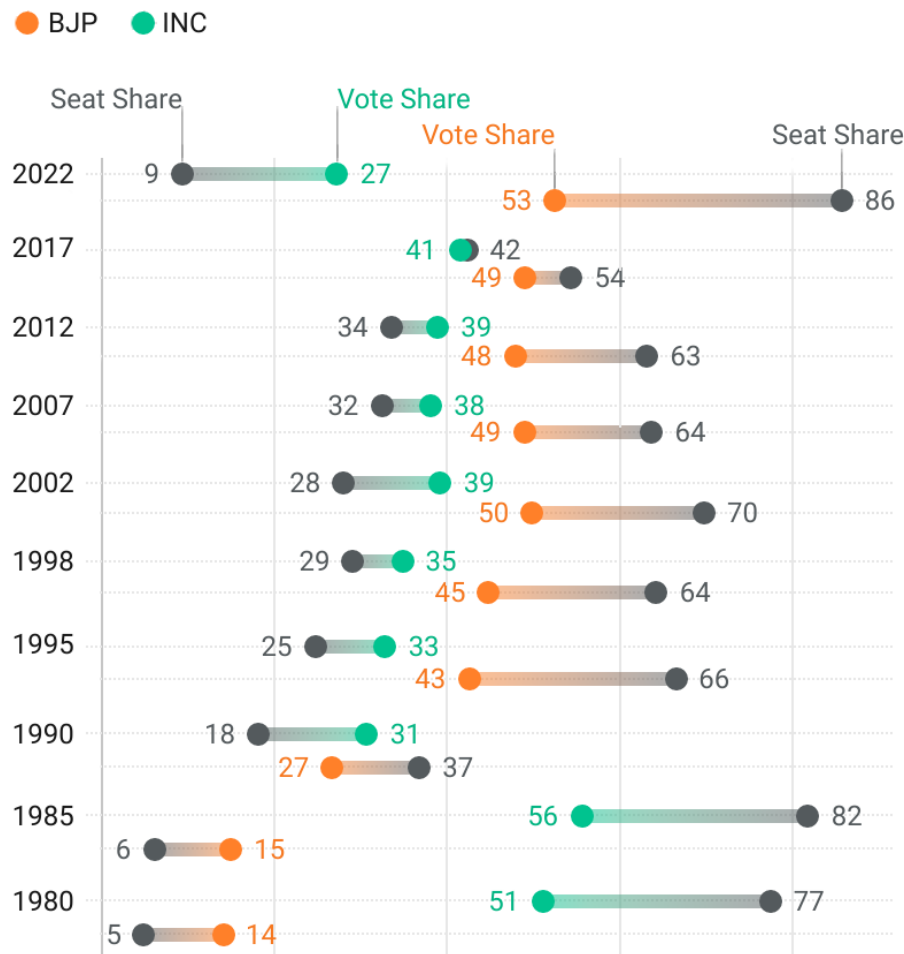
Party wise Seat Shares



INC's Seat vs Vote Share



Comparing BJP & INC party performance w.r.t. Vote vs Seat Share Percentages - over the last 10 Assembly Elections



Some of the observations that can be made from the visualization -

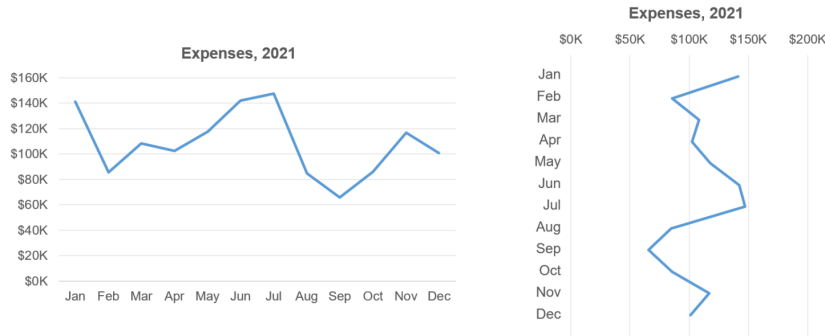
- 1) Largest differences between Vote & Seat shares was in 2022 - This implies that BJP won by a very small margin
- 2) Vote Share for BJP has been almost constant since 1995 until 2022, as well as for INC from 1990 until 2017, with a sudden drop in 2022
- 3) Interestingly, in 1990, BJP won more seats despite having lesser votes - this can be observed by the reverse order of the range bars
- 4) Since 1995, while the Vote Shares for both the parties have been very close, there are big differences between Seat shares
- 5) From 1990-2017, both parties have been in close competition, which can be observed by the proximity of the range bars

Problems with this representation -

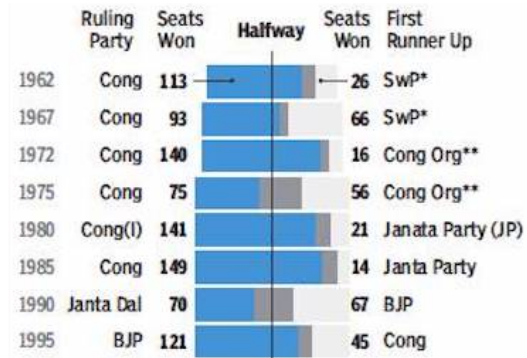
- 1) Bars are thick - no significance, but make the data look like it's from different years
- 2) Seat Share - points for both parties is in same color, which makes the overall visualization confusing

Secondary Research

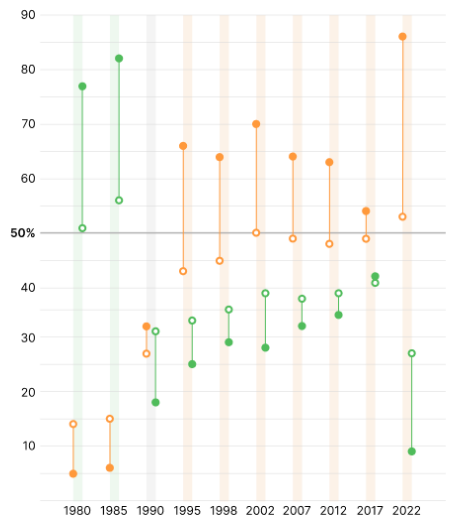
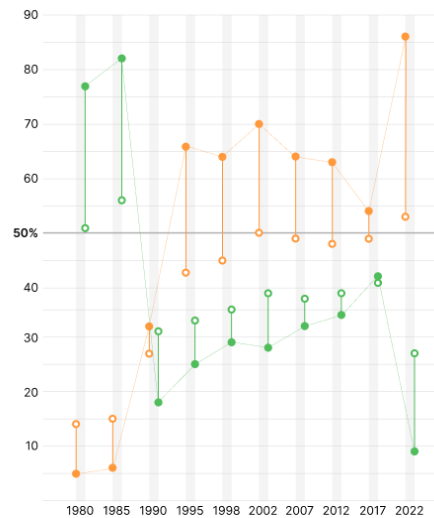
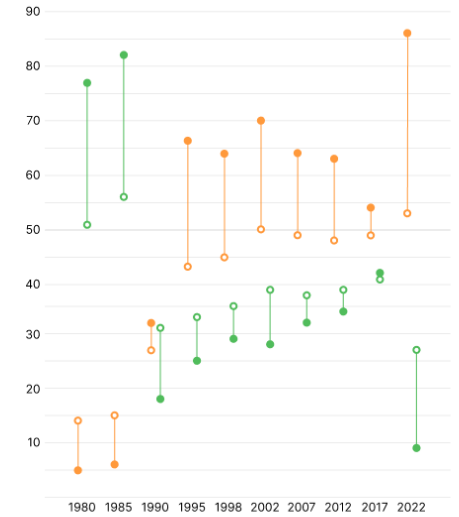
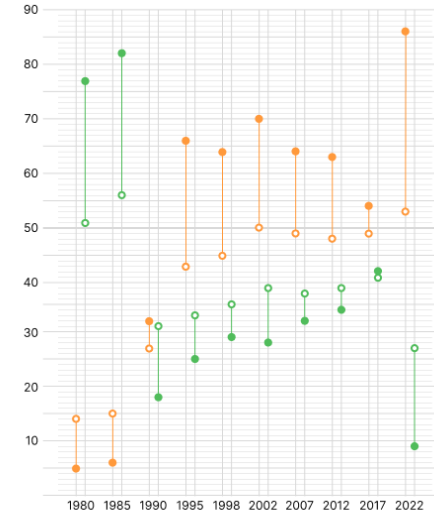
Are Vertical Line Charts Ever a Good Idea?: Our brain mentally represents sequences as left to right by default as opposed to top to bottom. We intuitively perceive elements in a chart that are higher up in the chart as representing larger quantities^[17]



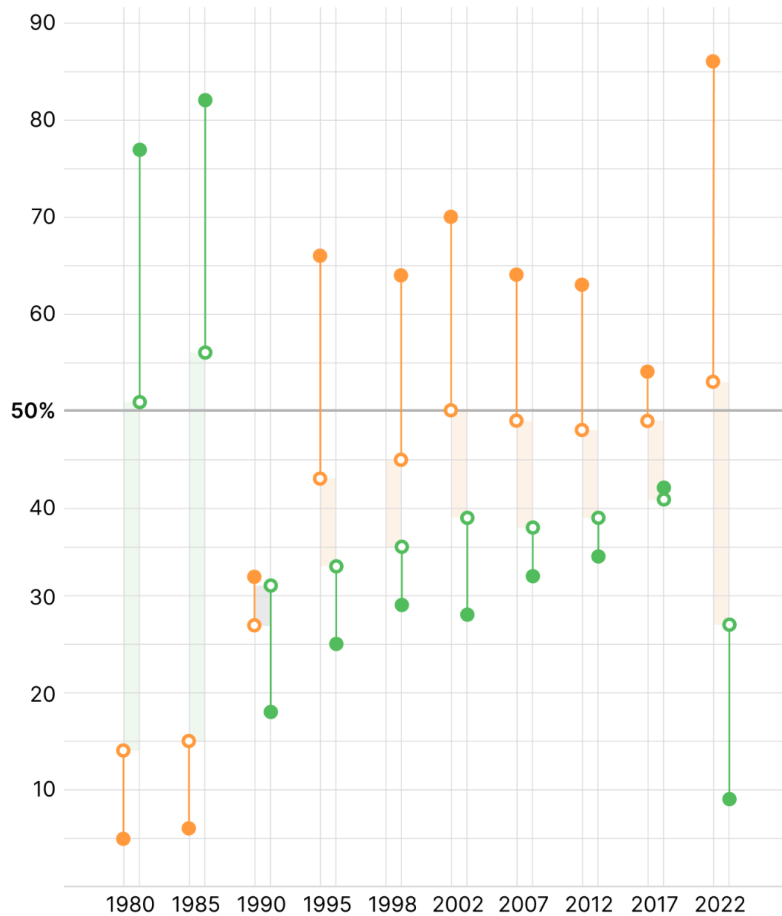
A halfway mark can easily demonstrate which party won by a large vote share^[8]



Various trials of the visualization representation



Comparing the BJP's & INC's Party Performance over the last 10 Gujarat Assembly Elections



	INC	BJP
Seat Share	●	●
Vote Share	○	○

Color	Party
Green	INC
Orange	BJP
Grey	JD

Height of vertical bars represent the difference between Vote Shares and the colour represents which party won that year

Some of the observations that can be made from the visualization -

- 1) Largest differences between Vote & Seat shares (Filled dot and outlined dot) was in 2022 - This implies that BJP won by a very small margin
- 2) Vote Share for BJP has been almost constant since 1995 until 2022, as well as for INC from 1990 until 2017, with a sudden drop in 2022
- 3) Interestingly, in 1990, BJP won more seats despite having lesser votes - this can be observed by the reverse order of the range bars (filled dot shifted to bottom)
- 4) Since 1995, while the Vote Shares for both the parties have been very close, there are big differences between Seat shares (filled dots on the outer end)
- 5) From 1990-2017, both parties have been in close competition, which can be observed by the height of the coloured spaces

Mapping constituencies across the last 10 Assembly Elections

There was 1 Delimitation between 1980 to 2022. Delimitation means the act of fixing limits or boundaries of territorial constituencies in any area having a legislative body. The job of delimitation is assigned to the Delimitation Commission established by the Government of India under the provisions of the Delimitation Commission Act. In India, such Delimitation Commissions have been constituted 4 times – in 1952 under the Delimitation Commission Act, 1952, in 1963 under Delimitation Commission Act, 1962, in 1973 under Delimitation Act, 1972 and in 2002 under Delimitation Act, 2002. Delimitation is carried out to provide equal representation to equal segments of a population and fair division of geographical areas, so that one political party doesn't have an advantage over others in an election. ^[19]

The constituencies in Gujarat were re-ordered, mapped and numbered. Thus matching them had to be done manually for 182 constituencies. There have also been renaming & spelling changes of constituencies across the Delimitation. Some constituencies were discarded and new ones were added.

Constituency No.	Constituencies - Delimitation 4	Constituencies - Delimitation 3
1	ABDASA	ABDASA
2	MANDVI	MANDVI
3	BHUJ	BHUJ
4	ANJAR	MUNDRA
5	GANDHIDHAM	ANJAR
6	RAPAR	RAPAR
7	VAV	DASADA
8	THARAD	WADHWAN
9	DHANERA	LIMBDI
10	DANTA	CHOTILA
11	VADGAM	HALVAD
12	PALANPUR	DHRANGADHRA
13	DEESA	MORVI
14	DEODAR	TANKARA
15	KANKREJ	WANKANER
16	RADHANPUR	JASDAN
17	CHANASMA	RAJKOT-I
18	PATAN	RAJKOT-II
19	SIDHPUR	RAJKOT RURAL
20	KHERALU	GONDAL
21	UNJHA	JETPUR
22	VISNAGAR	DHORAJI
23	BECHARAJI	UPLETA
24	KADI	JODIYA
25	MEHSANA	JAMNAGAR
26	VIJAPUR	JAMNAGAR RURAL
27	HIMATNAGAR	KALAWAD
28	IDAR	JAMJODHPUR
29	KHEDBRAHMA	BHANVAD
30	BHILODA	KHAMBHALIA
31	MONASA	DWARKA

Constituency Old names	Constituency
BARODA	Vadodara City
BULSAR	Valsad
CAMBAY	Khambhat
DEHGAM	Dahegam
DEVGADH BARIA	Devgadhbariya
DHRANGADHRA	Dhangadhra
KHAMBHALIA	Khambhaliya
LIMBDI	Limdi
MOTA PONDHA	Kaprada
MEHSANA	Mahesana
NIJHAR	Nizar
RAJKOT-I	Rajkot East
RAJKOT-II	Rajkot West
JETPUR	Jetpur (Chhota Udaipur)
JETPUR	Jetpur (Rajkot)
KALOL	Kalol (Gandhinagar)
KALOL	Kalol (Panchmahal)
MAHUVA	Mahuva (Bhavnagar)
MAHUVA	Mahuva (Surat)
MANGROL	Mangrol (Junagadh)
MANGROL	Mangrol (Surat)

149 out of 182 constituencies were identified that had the same boundaries (albeit different names or spellings) from 1980 to 2022 across the Delimitation. Data for these 149 constituencies was then mapped together for each of the 10 elections - Winning Party, Vote Margin(%), Voter Turnout(%)

Winning parties across the years for the 150 common constituencies - Colour coding done with Orange for BJP, Green for INC and white for Others

Constituency	1980	1985	1990	1995	1998	2002	2007	2012	2017	2022
Abdasa	INC	INC	BJP	INC	INC	BJP	BJP	INC	INC	BJP
Amreli	IND	BJP	BJP	BJP	BJP	INC	BJP	INC	INC	BJP
Anand	INC	INC	JD	BJP	BJP	BJP	BJP	BJP	INC	BJP
Anjar	INC	INC	INC	BJP	BJP	INC	BJP	BJP	BJP	BJP
Ankleshwar	INC	INC	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP
Asarwa	INC	INC	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP
Balasinor	INC	INC	BJP	BJP	AIRJP	BJP	INC	INC	INC	BJP
Bardoli	INC	INC	JD	INC	BJP	INC	INC	BJP	BJP	BJP
Bayad	INC	IND	BJP	INC	BJP	INC	BJP	INC	INC	IND
Bharuch	INC	INC	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP
Bhavnagar North	INC	INC	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP
Bhavnagar South	INC	INC	INC	INC	BJP	BJP	INC	BJP	BJP	BJP
Bhiloda	INC	INC	INC	BJP	IND	INC	INC	INC	INC	BJP
Bhuj	INC	INC	BJP	BJP	BJP	INC	BJP	BJP	BJP	BJP
Borsad	INC	INC	INC	INC	INC	INC	INC	INC	INC	BJP
Botad	INC	INC	JD	INC	BJP	BJP	BJP	BJP	BJP	AAP
Chanasma	BJP	INC	IND	BJP	BJP	INC	BJP	BJP	BJP	INC
Chhota Udaipur	INC	INC	INC	INC	INC	BJP	BJP	INC	INC	BJP
Choryasi	INC	INC	YVP	BJP	BJP	BJP	BJP	BJP	BJP	BJP
Chotila	INC	IND	JD	INC	INC	IND	INC	BJP	INC	BJP
Dabhoi	JNP(JP)	INC	IND	BJP	INC	BJP	INC	BJP	BJP	BJP
Dahegam	INC	BJP	BJP	BJP	BJP	INC	INC	INC	BJP	BJP
Dahod	INC	INC	BJP	BJP	INC	BJP	INC	INC	INC	BJP
Dangs	INC	INC	JD	INC	INC	INC	BJP	INC	INC	BJP
Danta	JNP(JP)	INC	BJP	BJP	INC	INC	INC	INC	INC	INC
Dariapur	INC	INC	BJP	BJP	BJP	BJP	BJP	INC	INC	BJP
Dasada	INC	INC	BJP	BJP	BJP	INC	BJP	BJP	INC	BJP

Constituency	Vote Margin 1980	Vote Margin 1985	Vote Margin 1990	Vote Margin 1995	Vote Margin 1998	Vote Margin 2002	Vote Margin 2007	Vote Margin 2012	Vote Margin 2017	Vote Margin 2022
ABDASA	4.98	6.86	23.41	1.71	1.21	10.69	11.4	5.31	6.49	5.78
MANDVI	8.24	3.3	26.33	11.47	20.58	0.69	4.65	6.1	5.65	28.51
BHUJ	33.64	8.27	11.43	6.4	24.4	2.39	16.2	5.83	8.22	33.19
ANJAR	35.8	37.81	1.79	35.18	6.13	3.31	11.45	3.44	7.24	21.51
RAPAR	15.71	13.91	12.55	3.23	11.15	4.08	6.05	7.8	11.69	0.4
VAV	7.98	32.15	4.84	1.66	19.05	8.43	27.74	6.78	3.19	6.89
DHANERA	13.17	25.13	2.57	9.5	12.45	2.35	10.13	19.09	1.21	17.45
DANTA	0.32	16.58	10.29	9.3	18.14	22.29	24.04	18.53	15.14	3.45
VADGAM	31.75	31.14	33.49	1.09	2.88	11.26	8.61	12.92	10.48	2.5
PALANPUR	28.81	31.06	1.19	24.93	7.03	12.35	12.51	3.36	10.02	14.94
DEESA	2.85	3.13	14.27	24	9.26	1.51	13.44	11.37	8.08	19.8
DEODAR	30.04	9.17	0.88	5.67	9.35	13.31	15.62	13.36	0.58	19.94
KANKREJ	21.23	7.1	11.6	4.93	20.44	1.96	0.77	0.37	4.48	2.62
RADHANPUR	20.13	73.86	6.97	0.29	20.18	7.98	22.85	2.53	8.37	11.33
CHANASMA	5.08	13.32	5.46	11.92	7.49	17.5	18.71	10.46	4.61	0.75
PATAN	19.1	9.58	4.32	15.05	13.65	3.73	6	3.59	13.24	8.32
SIDHPUR	9.68	2.39	23.59	31.31	5.77	8.71	2.24	15.96	10.22	1.49
KHERALU	17.88	1.59	46.07	1.32	2.06	15.55	16.03	14.51	14.83	2.59
UNJHA	26.34	32.68	73.34	16.93	32	39.5	22.65	17.83	12.76	34.72
VISNAGAR	15.86	4.52	7.84	14.47	3.06	12.8	24.75	20.84	1.81	21.46
KADI	21	9.16	2.95	2.08	10.12	4.72	0.97	0.69	4.03	14.08
MEHSANA	9.22	36.44	4.11	1.15	2.94	14.77	12.98	14.82	3.88	25.99
VIJAPUR	21.3	0.4	1.79	5.87	9.14	21.76	12.64	6.1	0.77	4.43
HIMATNAGAR	12.88	12.61	24.72	23.86	8.29	17.79	6.59	7.08	0.88	4.34
IDAR	4.09	5.33	51.24	33.62	27.48	21.88	13.21	6.22	7.52	19.1
KHEDBRAHMA	23.49	20.46	14.46	24.53	27.55	9.15	23.71	33.63	6.2	0.81
BHILODA	27.08	34.13	10.84	6.06	7.32	6.07	9.69	18.01	6.39	13.88
MODASA	10.71	19.92	7.4	31.6	15.31	26.95	9.49	13.92	0.94	18.73
BAYAD	0.53	10.2	1.68	9.49	5.27	2.09	6.62	23.37	5	3.37
PRANTIJ	14.33	0.49	7.99	32.15	9.34	16.69	11.26	4.41	1.44	35.12
DEHGAM	8.12	19.07	13.15	4.16	6.48	2.44	1.6	1.79	7.42	10.6
GANDHINAGAR	30.91	15	5.03	1.7	9.33	12.44	3.6	4.51	5.35	17.54
MANSA	3.66	0.77	10.7	8.4	7.35	2.26	3.27	5.16	0.32	23.72
KALOL	10.89	14.88	6.76	8.02	1.5	6.58	2.26	0.24	4.84	3.29
VIRAMGAM	12.86	4.14	31.5	8.77	6.88	2.93	3.32	10.55	3.55	25.89

Constituency	Vote Margin 1980	1980	Vote Margin 1985	1985	Vote Margin 1990	1990	Vote Margin 1995	1995	Vote Margin 1998	1998	Vote Margin 2002	2002	Vote Margin 2007	2007	Vote Margin 2012	2012	Vote Margin 2017	2017	Vote Margin 2022	2022
ABDASA	4.98	INC	6.86	INC	23.41	BJP	1.71	INC	1.21	INC	10.69	BJP	11.4	BJP	5.31	INC	6.49	INC	5.78	BJP
MANDVI	8.24	INC	3.3	BJP	26.33	BJP	11.47	BJP	20.58	BJP	0.69	INC	4.65	BJP	6.1	BJP	5.65	BJP	28.51	BJP
BHUJ	33.64	INC	8.27	INC	11.43	BJP	6.4	BJP	24.4	BJP	2.39	INC	16.2	BJP	5.83	BJP	8.22	BJP	33.19	BJP
ANJAR	35.8	INC	37.81	INC	1.79	INC	35.18	BJP	6.13	BJP	3.31	INC	11.45	BJP	3.44	BJP	7.24	BJP	21.51	BJP
RAPAR	15.71	BJP	13.91	INC	12.55	INC	3.23	BJP	11.15	BJP	4.08	INC	6.05	INC	7.8	BJP	11.69	INC	0.4	BJP
VAV	7.98	INC	32.15	INC	4.84	JD	1.66	IND	19.05	INC	8.43	INC	27.74	BJP	6.78	BJP	3.19	INC	6.89	INC
DHANERA	13.17	JNP(JP)	25.13	INC	2.57	BJP	9.5	INC	12.45	BJP	2.35	BJP	10.13	BJP	19.09	INC	1.21	INC	17.45	IND
DANTA	0.32	JNP(JP)	16.58	INC	10.29	BJP	9.3	BJP	18.14	INC	22.29	INC	24.04	INC	18.53	INC	15.14	INC	3.45	INC
VADGAM	31.75	INC	31.14	INC	33.49	JD	1.09	BJP	2.88	INC	11.26	INC	8.61	BJP	12.92	INC	10.48	IND	2.5	INC
PALANPUR	28.81	INC	31.06	INC	1.19	BJP	24.93	BJP	7.03	BJP	12.35	BJP	12.51	BJP	3.36	INC	10.02	INC	14.94	BJP
DEESA	2.85	JNP(JP)	3.13	IND	14.27	JD	24	BJP	9.26	BJP	1.51	INC	13.44	BJP	11.37	BJP	8.08	BJP	19.8	BJP
DEODAR	30.04	INC	9.17	INC	0.88	JD	5.67	BJP	9.35	BJP	13.31	IND	15.62	BJP	13.36	BJP	0.58	INC	19.94	BJP
KANKREJ	21.23	INC	7.1	JNP	11.6	JD	4.93	INC	20.44	BJP	1.96	INC	0.77	BJP	0.37	INC	4.48	BJP	2.62	INC
RADHANPUR	20.13	INC	73.86	INC	6.97	JD	0.29	IND	20.18	BJP	7.98	BJP	22.85	BJP	2.53	BJP	8.37	INC	11.33	BJP
CHANASMA	5.08	BJP	13.32	INC	5.46	IND	11.92	BJP	7.49	BJP	17.5	INC	18.71	BJP	10.46	BJP	4.61	BJP	0.75	INC
PATAN	19.1	JNP(JP)	9.58	INC	4.32	BJP	15.05	BJP	13.65	BJP	3.73	BJP	6	BJP	3.59	BJP	13.24	INC	8.32	INC
SIDHPUR	9.68	INC	2.39	INC	23.59	BJP	31.31	BJP	5.77	BJP	8.71	INC	2.24	BJP	15.96	INC	10.22	INC	1.49	BJP
KHERALU	17.88	JNP(JP)	1.59	IND	46.07	JD	1.32	INC	2.06	INC	15.55	BJP	16.03	BJP	14.51	BJP	14.83	BJP	2.59	BJP
UNJHA	26.34	JNP(JP)	32.68	JNP	73.34	JD	16.93	BJP	32	BJP	39.5	BJP	22.65	BJP	17.83	BJP	12.76	INC	34.72	BJP
VISNAGAR	15.86	BJP	4.52	IND	7.84	JD	14.47	BJP	3.06	BJP	12.8	BJP	24.75	BJP	20.84	BJP	1.81	BJP	21.46	BJP
KADI	21	INC	9.16	INC	2.95	BJP	2.08	BJP	10.12	BJP	4.72	INC	0.97	BJP	0.69	INC	4.03	BJP	14.08	BJP
MEHSANA	9.22	INC	36.44	INC	4.11	BJP	1.15	BJP	2.94	BJP	14.77	BJP	12.98	BJP	14.82	BJP	3.88	BJP	25.99	BJP
VIJAPUR	21.3	BJP	0.4	INC	1.79	INC	5.87	BJP	9.14	INC	21.76	BJP	12.64	BJP	6.1	INC	0.77	BJP	4.43	INC
HIMATNAGAR	12.88	BJP	12.61	INC	24.72	JD	23.86	BJP	8.29	BJP	17.79	BJP	6.59	BJP	7.08	INC	0.88	BJP	4.34	BJP
IDAR	4.09	INC	5.33	JNP	51.24	JD	33.62	BJP	27.48	BJP	21.88	BJP	13.21	BJP	6.22	BJP	7.52	BJP	19.1	BJP
KHEDBRAHMA	23.49	INC	20.46	INC	14.46	BJP	24.53	INC	27.55	INC	9.15	INC	23.71	INC	33.63	INC	6.2	INC	0.81	INC
BHILODA	27.08	INC	34.13	INC	10.84	INC	6.06	BJP	7.32	IND	6.07	INC	9.69	INC	18.01	INC	6.39	INC	13.88	BJP
MODASA	10.71	IND	19.92	INC	7.4	JD	31.6	BJP	15.31	BJP	26.95	BJP	9.49	BJP	13.92	INC	0.94	INC	18.73	BJP
BAYAD	0.53	INC	10.2	IND	1.68	BJP	9.49	INC	5.27	BJP	2.09	INC	6.62	BJP	23.37	INC	5	INC	3.37	IND
PRANTIJ	14.33	JNP(JP)	0.49	INC	7.99	BJP	32.15	BJP	9.34	BJP	16.69	BJP	11.26	BJP	4.41	INC	1.44	BJP	35.12	BJP
DEHGAM	8.12	INC	19.07	BJP	13.15	BJP	4.16	BJP	6.48	BJP	2.44	INC	1.6	INC	1.79	INC	7.42	BJP	10.6	BJP
GANDHINAGAR	30.91	INC	15	INC	5.03	JD	1.7	BJP	9.33	BJP	12.44	INC	3.6	BJP	4.51	BJP	5.35	BJP	17.54	BJP
MANSA	3.66	INC	0.77	INC	10.7	INC	8.4	BJP	7.35	BJP	2.26	BJP	3.27	BJP	5.16	INC	0.32	INC	23.72	BJP
KALOL	10.89	INC	14.88	INC	6.76	IND	8.02	BJP	1.5	BJP	6.58	BJP	2.26	INC	0.24	INC	4.84	INC	3.29	BJP
VIPAMGAM	12.86	INC	4.14	BJP	31.5	BJP	8.77	BJP	6.88	BJP	2.93	BJP	3.32	BJP	10.55	INC	3.55	INC	25.89	BJP

Vote Margin(%) & Winning Party were added together - a combined visualization of this data would give us insights into the margin by which a party won, whether that increased or decreased over the years and what is the competition like in a particular constituency

Vote Margin Heatmap



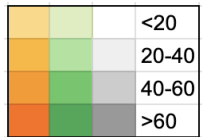
	Constituency	Vote Margin 2022	Vote Margin 2017	Vote Margin 2012	Vote Margin 2007	Vote Margin 2002	Vote Margin 1998	Vote Margin 1995	Vote Margin 1990	Vote Margin 1985	Vote Margin 1980
1	ABDASA	6	6	5	11	11	1	2	23	7	5
2	MANDVI	29	6	6	5	1	21	11	26	3	8
3	BHUJ	33	8	6	16	2	24	6	11	8	34
4	ANJAR	22	7	3	11	3	6	35	2	38	36
5	RAPAR	0	12	8	6	4	11	3	13	14	16
6	VAV	7	3	7	28	8	19	2	5	32	8
7	DHANERA	17	1	19	10	2	12	10	3	25	13
8	DANTA	3	15	19	24	22	18	9	10	17	0
9	VADGAM	3	10	13	9	11	3	1	33	31	32
10	PALANPUR	15	10	3	13	12	7	25	1	31	29
11	DEESA	20	8	11	13	2	9	24	14	3	3
12	DEODAR	20	1	13	16	13	9	6	1	9	30
13	KANKREJ	3	4	0	1	2	20	5	12	7	21
14	RADHANPUR	11	8	3	23	8	20	0	7	74	20
15	CHANASMA	1	5	10	19	18	7	12	5	13	5
16	PATAN	8	13	4	6	4	14	15	4	10	19
17	SIDHPUR	1	10	16	2	9	6	31	24	2	10
18	KHERALU	3	15	15	16	16	2	1	46	2	18
19	UNJHA	35	13	18	23	40	32	17	73	33	26
20	VISNAGAR	21	2	21	25	13	3	14	8	5	16
21	KADI	14	4	1	1	5	10	2	3	9	21
22	MEHSANA	26	4	15	13	15	3	1	4	36	9
23	VIJAPUR	4	1	6	13	22	9	6	2	0	21
24	HIMATNAGAR	4	1	7	7	18	8	24	25	13	13
25	IDAR	19	8	6	13	22	27	34	51	5	4
26	KHEDBRAHMA	1	6	34	24	9	28	25	14	20	23
27	BHILODA	14	6	18	10	6	7	6	11	24	27

A Vote Margin (%) heatmap was made to understand the degree of domination of the winning party

Constituency	Vote Margin 2022		Vote Margin 2017		Vote Margin 2012		Vote Margin 2007		Vote Margin 2002		Vote Margin 1998		Vote Margin 1995		Vote Margin 1990		Vote Margin 1985		Vote Margin 1980	
	2022	2022	2017	2017	2012	2012	2007	2007	2002	2002	1998	1998	1995	1995	1990	1990	1985	1985	1980	1980
ABDASA	5.78	BJP	6.49	INC	5.31	INC	11.4	BJP	10.69	BJP	1.21	INC	1.71	INC	23.41	BJP	6.86	INC	4.98	INC
MANDVI	28.51	BJP	5.65	BJP	6.1	BJP	4.65	BJP	0.69	INC	20.58	BJP	11.47	BJP	26.33	BJP	3.3	BJP	8.24	INC
BHUJ	33.19	BJP	8.22	BJP	5.83	BJP	16.2	BJP	2.39	INC	24.4	BJP	6.4	BJP	11.43	BJP	8.27	INC	33.64	INC
ANJAR	21.51	BJP	7.24	BJP	3.44	BJP	11.45	BJP	3.31	INC	6.13	BJP	35.18	BJP	1.79	INC	37.81	INC	35.8	INC
RAPAR	0.4	BJP	11.69	INC	7.8	BJP	6.05	INC	4.08	INC	11.15	BJP	3.23	BJP	12.55	INC	13.91	INC	15.71	INC
VAV	6.89	INC	3.19	INC	6.78	BJP	27.74	BJP	8.43	INC	19.05	INC	1.66	IND	4.84	JD	32.15	INC	7.98	INC
DHANERA	17.45	IND	1.21	INC	19.09	INC	10.13	BJP	2.35	BJP	12.45	BJP	9.5	INC	2.57	BJP	25.13	INC	13.17	INC
DANTA	3.45	INC	15.14	INC	18.53	INC	24.04	INC	22.29	INC	18.14	INC	9.3	BJP	10.29	BJP	16.58	INC	0.32	INC
VADGAM	2.5	INC	10.48	IND	12.92	INC	8.61	BJP	11.26	INC	2.88	INC	1.09	BJP	33.49	JD	31.14	INC	31.75	INC
PALANPUR	14.94	BJP	10.02	INC	3.36	INC	12.51	BJP	12.35	BJP	7.03	BJP	24.93	BJP	1.19	BJP	31.06	INC	28.81	INC
DEESA	19.8	BJP	8.08	BJP	11.37	BJP	13.44	BJP	1.51	INC	9.26	BJP	24	BJP	14.27	JD	3.13	IND	2.85	INC
DEODAR	19.94	BJP	0.58	INC	13.36	BJP	15.62	BJP	13.31	IND	9.35	BJP	5.67	BJP	0.88	JD	9.17	INC	30.04	INC
KANKREJ	2.62	INC	4.48	BJP	0.37	INC	0.77	BJP	1.96	INC	20.44	BJP	4.93	INC	11.6	JD	7.1	JNP	21.23	INC
RADHANPUR	11.33	BJP	8.37	INC	2.53	BJP	22.85	BJP	7.98	BJP	20.18	BJP	0.29	IND	6.97	JD	73.86	INC	20.13	INC
CHANASMA	0.75	INC	4.61	BJP	10.46	BJP	18.71	BJP	17.5	INC	7.49	BJP	11.92	BJP	5.46	IND	13.32	INC	5.08	INC
PATAN	8.32	INC	13.24	INC	3.59	BJP	6	BJP	3.73	BJP	13.65	BJP	15.05	BJP	4.32	BJP	9.58	INC	19.1	INC
SIDHPUR	1.49	BJP	10.22	INC	15.96	INC	2.24	BJP	8.71	INC	5.77	BJP	31.31	BJP	23.59	BJP	2.39	INC	9.68	INC
KHERALU	2.59	BJP	14.83	BJP	14.51	BJP	16.03	BJP	15.55	BJP	2.06	INC	1.32	INC	46.07	JD	1.59	IND	17.88	INC
UNJHA	34.72	BJP	12.76	INC	17.83	BJP	22.65	BJP	39.5	BJP	32	BJP	16.93	BJP	73.34	JD	32.68	JNP	26.34	INC
VISNAGAR	21.46	BJP	1.81	BJP	20.84	BJP	24.75	BJP	12.8	BJP	3.06	BJP	14.47	BJP	7.84	JD	4.52	IND	15.86	INC
KADI	14.08	BJP	4.03	BJP	0.69	INC	0.97	BJP	4.72	INC	10.12	BJP	2.08	BJP	2.95	BJP	9.16	INC	21	INC
MEHSANA	25.99	BJP	3.88	BJP	14.82	BJP	12.98	BJP	14.77	BJP	2.94	BJP	1.15	BJP	4.11	BJP	36.44	INC	9.22	INC
VIJAPUR	4.43	INC	0.77	BJP	6.1	INC	12.64	BJP	21.76	BJP	9.14	INC	5.87	BJP	1.79	INC	0.4	INC	21.3	INC
HIMATNAGAR	4.34	BJP	0.88	BJP	7.08	INC	6.59	BJP	17.79	BJP	8.29	BJP	23.86	BJP	24.72	JD	12.61	INC	12.88	INC
IDAR	19.1	BJP	7.52	BJP	6.22	BJP	13.21	BJP	21.88	BJP	27.48	BJP	33.62	BJP	51.24	JD	5.33	JNP	4.09	INC
KHEDBRAHMA	0.81	INC	6.2	INC	33.63	INC	23.71	INC	9.15	INC	27.55	INC	24.53	INC	14.46	BJP	20.46	INC	23.49	INC
BHILODA	13.88	BJP	6.39	INC	18.01	INC	9.69	INC	6.07	INC	7.32	IND	6.06	BJP	10.84	INC	34.13	INC	27.08	INC
MODASA	18.73	BJP	0.94	INC	13.92	INC	9.49	BJP	26.95	BJP	15.31	BJP	31.6	BJP	7.4	JD	19.92	INC	10.71	INC
BAYAD	3.37	IND	5	INC	23.37	INC	6.62	BJP	2.09	INC	5.27	BJP	9.49	INC	1.68	BJP	10.2	IND	0.53	INC
PRANTIJ	35.12	BJP	1.44	BJP	4.41	INC	11.26	BJP	16.69	BJP	9.34	BJP	32.15	BJP	7.99	BJP	0.49	INC	14.33	INC
DEHGAM	10.6	BJP	7.42	BJP	1.79	INC	1.6	INC	2.44	INC	6.48	BJP	4.16	BJP	13.15	BJP	19.07	BJP	8.12	INC

The Vote Margin heatmap was color coded in accordance with the winning party with shades of Orange, Green and White

Constituency	2022	2017	2012	2007	2002	1998	1995	1990	1985	1980
Abdasa	BJP	INC	INC	BJP	BJP	INC	INC	BJP	INC	INC
Amreli	BJP	INC	INC	BJP	INC	BJP	BJP	BJP	BJP	INC
Anand	BJP	INC	BJP	BJP	BJP	BJP	BJP	JD	INC	IND
Anjar	BJP	BJP	BJP	BJP	INC	BJP	BJP	INC	INC	INC
Ankleshwar	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Asarwa	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Balasinor	BJP	INC	INC	INC	BJP	AIRJP	BJP	BJP	INC	INC
Bardoli	BJP	BJP	BJP	INC	INC	BJP	INC	JD	INC	INC
Vadodara City	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Bayad	IND	INC	INC	BJP	INC	BJP	INC	BJP	IND	INC
Bharuch	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Bhavnagar North	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	IND
Bhavnagar South	BJP	BJP	BJP	INC	BJP	BJP	INC	INC	INC	BJP
Bhiloda	BJP	INC	INC	INC	INC	IND	BJP	INC	INC	INC
Bhuj	BJP	BJP	BJP	BJP	INC	BJP	BJP	BJP	INC	INC
Borsad	BJP	INC	INC	INC	INC	INC	INC	INC	INC	INC
Botad	AAP	BJP	BJP	BJP	BJP	BJP	INC	JD	INC	IND
Valsad	BJP	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Khambhat	INC	BJP	BJP	BJP	BJP	BJP	BJP	BJP	INC	INC
Chanasma	INC	BJP	BJP	BJP	INC	BJP	BJP	IND	INC	INC
Chhota Udaipur	BJP	INC	INC	BJP	BJP	INC	INC	INC	INC	INC
Choryasi	BJP	BJP	BJP	BJP	BJP	BJP	BJP	YVP	INC	INC
Chotila	BJP	INC	BJP	INC	IND	INC	INC	JD	IND	INC
Dabhoi	BJP	BJP	BJP	INC	BJP	INC	BJP	IND	INC	INC
Dahod	BJP	INC	INC	INC	BJP	INC	BJP	BJP	INC	INC
Dangs	BJP	INC	INC	BJP	INC	INC	INC	JD	INC	INC
Danta	INC	INC	INC	INC	INC	INC	BJP	BJP	INC	INC
Dariapur	BJP	INC	INC	BJP	BJP	BJP	BJP	BJP	INC	INC
Dasada	BJP	INC	BJP	BJP	INC	BJP	BJP	BJP	INC	INC

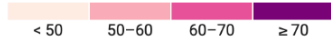


Now this heatmap can be filtered according to various parameters like - % Rural Population, % SC population, % ST population, % Muslim Population for each constituency, the data for which was collected as per the 2011 Census of India

Constituency	% Rural Population	% SC Population	% ST Population	% Muslim Population	Type
Abdasa	100	14	1	12	
Amreli	65	11	1	2	
Anand	14	4	3	5	
Anjar	73	10	1	10	
Ankleshwar	47	4	24	12	
Asarwa	0	16	2	3	SC
Balasinor	86	7	1	5	
Bardoli	61	4	34	6	SC
Bayad	89	7	2	0	
Bharuch	15	6	15	15	
Bhavnagar North	4	4	1	4	
Bhavnagar South	0	6	0	6	
Bhiloda	93	4	50	0	ST
Bhuj	31	9	1	15	
Borsad	79	4	0	4	
Botad	63	6	0	1	
Chanasma	89	9	3	2	
Chhota Udaipur	90	3	85	2	ST
Choryasi	3	2	7	6	
Chotila	81	9	0	0	
Dabhoi	78	6	25	3	
Dahegam	77	4	1	2	
Dahod	62	3	70	5	ST
Dangs	89	0	95	0	ST
Danta	95	3	57	1	ST
Dariapur	0	6	0	29	
Dasada	90	13	4	1	SC
Daskroi	84	7	1	1	
Dediapada	92	0	94	0	ST
Deesa	68	9	3	2	
Deodar	93	10	3	1	
Devgadhbariya	93	3	30	1	
Dhandhuka	78	8	0	1	

Constituency	Voter Turnout 1980	Voter Turnout 1985	Voter Turnout 1990	Voter Turnout 1995	Voter Turnout 1998	Voter Turnout 2002	Voter Turnout 2007	Voter Turnout 2012	Voter Turnout 2017	Voter Turnout 2022
ABDASA	56.59	64.16	60.51	72.92	65.25	71.88	64.12	73.49	67.17	60.51
MANDVI	54.13	55.39	58.52	69.37	60.42	64.5	61.36	71.99	71.17	58.52
BHUJ	40.71	40.32	53.48	61.55	58.04	64.26	62	68.73	66.68	53.48
ANJAR	43.48	42.49	40.16	44.81	49.05	52.79	54.71	71.92	68.05	43.33
RAPAR	61.04	62.5	52.2	58.71	51.37	62.07	52.06	62.73	60.13	52.2
VAV	60.73	63.08	62.63	77.17	75.56	69.6	69.1	77.77	81.27	52.73
DHANERA	53.01	57.78	67.37	77.58	68.6	68.01	62.78	76.8	75.78	51.39
DANTA	46.49	40.39	53.69	73.55	64.42	65.65	60.46	74.9	74.4	38.43
VADGAM	40.35	49.13	46.01	64.7	62.68	68.29	58.77	72.27	72.11	54.33
PALANPUR	41.14	50.8	49.67	58.95	60.19	63.38	59.85	71.15	69.94	60.17
DEESA	50.26	55.46	55.59	66.27	69.14	70.57	63.28	70.25	71.69	46.84
DEODAR	49.25	65.8	64.06	82.89	68.29	72.87	65.57	82.15	77.37	59.3
KANKREJ	54.22	69.09	57.72	72.35	65.9	61.9	58.03	71.66	75.98	54.75
RADHANPUR	55.85	55.37	56.29	70.43	57.66	68.22	66.5	68.73	68.53	49.05
CHANASMA	71.39	75.84	60.65	72.86	73.58	72.7	67.07	70.11	68.84	37.18
PATAN	53.33	59.22	54.77	59.99	55.99	58.26	66.06	70.49	70.18	37.32
SIDHPUR	60.92	70.16	61.39	70.29	65.94	75.03	71.57	77.38	70.96	31.8
KHERALU	72.1	69.47	54.43	75.42	70.82	73.85	62.24	71.27	71.97	52.22
UNJHA	64.2	72.38	67.1	72.35	65.53	64.67	63.39	70.1	71.79	44.27
VISNAGAR	55.94	63.35	67.14	77.62	73.79	70.51	62.95	75.06	74.79	55.78
KADI	52.82	63.85	69.96	73.85	70.96	79.38	73.14	77.77	74.81	58.05
MEHSANA	59.52	46.35	57.85	65.44	62.83	63.91	62.64	75.54	70.91	43.41
VIJAPUR	57.75	69.32	68.25	79.34	71.28	70.81	63.22	75.75	72.19	23.32
HIMATNAGAR	52.71	52.39	48.92	63.48	60.71	67.35	67.37	79.96	77.29	49.49
IDAR	46.32	49.96	56.44	68.96	62.53	70.04	66.94	79.18	75.84	50.13
KHEDBRAHMA	35.31	35.36	45.9	72.11	62.42	67.5	56.25	75.67	76.22	49.3
BHILODA	47.38	56.29	56.22	70.13	62.27	63.18	62.01	73.14	69.52	50.15
MODASA	57.25	47.92	60.65	74.27	67.56	69.06	60.37	75.99	71.1	51.87
BAYAD	50.36	60.28	66.04	76.48	74.08	72.79	54.73	76.54	70.8	38.12
PRANTIJ	52.23	56.04	61.7	70.01	63.21	66.82	63.41	75.12	74.71	41.05
DEHGAM	57.82	64.84	56.16	65.41	62.53	67.52	64.57	73.77	72.66	50.2
GANDHINAGAR	53.19	63.41	61.17	67.65	63.06	61.38	9.92	73.43	70.69	66.18
MANSA	55.88	62.34	67.91	76.92	74.87	66.57	64.26	80.66	76.28	49.69
KALOL	53.61	51.88	57.69	63.73	63.47	68.41	65.62	76.41	73.48	63.25
VIRAMGAM	55.81	60.06	54.88	64.15	65.61	67.11	61.26	66.74	68.11	47.57

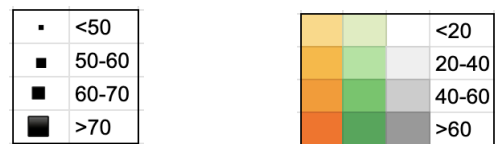
Voter Turnout Heatmap



Constituency	Voter Turnout 2022	Voter Turnout 2017	Voter Turnout 2012	Voter Turnout 2007	Voter Turnout 2002	Voter Turnout 1998	Voter Turnout 1995	Voter Turnout 1990	Voter Turnout 1985	Voter Turnout 1980
Abdasa	61	67	73	64	72	65	73	61	64	57
Amreli	63	63	68	62	61	58	52	50	61	58
Anand	36	69	74	63	65	61	60	58	46	39
Anjar	43	68	72	55	53	49	45	40	42	43
Ankleshwar	64	71	76	67	70	59	62	53	49	54
Asarwa	46	65	68	57	54	51	52	51	51	45
Balasinor	48	66	74	65	71	61	68	64	45	49
Bardoli	33	72	74	66	63	62	67	47	37	46
Vadodara City	44	68	70	55	61	53	58	53	46	48
Bayad	38	71	77	55	73	74	76	66	60	50
Bharuch	51	68	72	63	70	57	58	51	39	52
Bhavnagar North	56	65	68	51	50	52	57	38	38	37
Bhavnagar South	56	63	68	63	55	53	56	40	39	41
Bhiloda	50	70	73	62	63	62	70	56	56	47
Bhuj	53	67	69	62	64	58	62	53	40	41
Borsad	66	70	74	64	69	62	67	67	53	46
Botad	62	68	79	69	67	63	66	55	52	49
Valsad	45	69	71	60	59	54	62	49	53	43
Khambhat	61	70	74	61	66	60	67	51	52	56
Chanasma	37	69	70	67	73	74	73	61	76	71
Chhota Udaipur	62	68	69	51	60	50	58	44	30	41
Choryasi	48	61	63	53	36	39	42	27	25	33
Chotila	55	66	72	51	55	53	60	38	57	28
Dabhoi	51	80	77	70	70	64	67	59	51	61
Dahod	66	65	65	48	52	46	46	44	30	31
Dangs	52	74	70	59	56	49	66	40	38	37
Danta	38	74	75	60	66	64	74	54	40	46

Constituency	Voter Turnout 2022	2022	Voter Turnout 2017	2017	Voter Turnout 2012	2012	Voter Turnout 2007	2007	Voter Turnout 2002	2002	Voter Turnout 1998	1998	Voter Turnout 1995	1995	Voter Turnout 1990	1990	Voter Turnout 1985	1985	Voter Turnout 1980	1980
Abdasa	60.51	BJP	67.17	INC	73.49	INC	64.12	BJP	71.88	BJP	65.25	INC	72.92	INC	60.51	BJP	64.16	INC	56.59	INC
Amreli	62.63	BJP	63.36	INC	68.42	INC	61.75	BJP	61.02	INC	57.96	BJP	51.84	BJP	49.86	BJP	60.77	BJP	57.94	INC
Anand	36.41	BJP	68.78	INC	73.93	BJP	63.25	BJP	65.03	BJP	60.93	BJP	59.7	BJP	57.8	JD	45.64	INC	39.3	IND
Anjar	43.33	BJP	68.05	BJP	71.92	BJP	54.71	BJP	52.79	INC	49.05	BJP	44.81	BJP	40.16	INC	42.49	INC	43.48	INC
Ankleshwar	64.21	BJP	71.23	BJP	75.58	BJP	67.08	BJP	69.96	BJP	59.31	BJP	62.14	BJP	53.27	BJP	48.65	INC	53.59	INC
Asarwa	46.38	BJP	65.47	BJP	67.8	BJP	56.84	BJP	53.6	BJP	51.3	BJP	51.61	BJP	51.01	BJP	50.76	INC	44.99	INC
Balasinor	47.52	BJP	66.14	INC	74.28	INC	65.03	INC	70.6	BJP	60.58	AIRJP	68.11	BJP	63.65	BJP	44.5	INC	49.15	INC
Bardoli	32.58	BJP	71.8	BJP	74.46	BJP	66.35	INC	62.53	INC	62.09	BJP	66.51	INC	47.24	JD	37.38	INC	46.15	INC
Vadodara City	44.09	BJP	68.25	BJP	69.59	BJP	54.53	BJP	61.24	BJP	52.72	BJP	58.15	BJP	52.54	BJP	46.01	INC	47.6	INC
Bayad	38.12	IND	70.8	INC	76.54	INC	54.73	BJP	72.79	INC	74.08	BJP	76.48	INC	66.04	BJP	60.28	IND	50.36	INC
Bharuch	50.79	BJP	67.52	BJP	71.78	BJP	62.97	BJP	70.09	BJP	57.26	BJP	57.84	BJP	51.38	BJP	38.66	INC	52.01	INC
Bhavnagar North	56.44	BJP	65.24	BJP	68.11	BJP	50.96	BJP	50.34	BJP	51.73	BJP	57.36	BJP	37.72	BJP	37.83	INC	36.77	IND
Bhavnagar South	56.22	BJP	62.62	BJP	67.69	BJP	62.82	INC	54.65	BJP	53.19	BJP	56.49	INC	40.14	INC	38.75	INC	40.98	BJP
Bhiloda	50.15	BJP	69.52	INC	73.14	INC	62.01	INC	63.18	INC	62.27	IND	70.13	BJP	56.22	INC	56.29	INC	47.38	INC
Bhuj	53.48	BJP	66.68	BJP	68.73	BJP	62	BJP	64.26	INC	58.04	BJP	61.55	BJP	53.48	BJP	40.32	INC	40.71	INC
Borsad	66.04	BJP	70.17	INC	73.55	INC	64.41	INC	68.67	INC	61.6	INC	66.87	INC	66.78	INC	53.48	INC	46.49	INC
Botad	61.7	AAP	68.26	BJP	79.23	BJP	69	BJP	66.89	BJP	63.36	BJP	66.12	INC	54.71	JD	51.7	INC	48.93	IND
Valsad	45.18	BJP	68.96	BJP	71.36	BJP	59.64	BJP	58.79	BJP	54.13	BJP	62.27	BJP	48.83	BJP	53.28	INC	42.77	INC
Khambhat	60.65	INC	69.61	BJP	73.55	BJP	60.62	BJP	65.62	BJP	60	BJP	66.72	BJP	51.25	BJP	52.06	INC	55.5	INC
Chanasma	37.18	INC	68.84	BJP	70.11	BJP	67.07	BJP	72.7	INC	73.58	BJP	72.86	BJP	60.65	IND	75.84	INC	71.39	INC
Chhota Udaipur	61.8	BJP	67.51	INC	69.3	INC	51.1	BJP	60.39	BJP	49.51	INC	58.1	INC	44.09	INC	30.19	INC	40.88	INC
Choryasi	48.43	BJP	61.32	BJP	62.85	BJP	53.42	BJP	35.67	BJP	38.55	BJP	41.86	BJP	26.77	YVP	25.3	INC	33.14	INC
Chotila	54.88	BJP	66.29	INC	71.79	BJP	51.18	INC	55.15	IND	52.91	INC	60.17	INC	38.43	JD	56.7	IND	27.65	INC
Dabhoi	51.25	BJP	79.69	BJP	77.47	BJP	70.45	INC	69.86	BJP	64.17	INC	67.25	BJP	58.88	IND	51.19	INC	60.54	INC
Dahod	66.24	BJP	65.02	INC	64.97	INC	48.19	INC	52.37	BJP	45.79	INC	46.47	BJP	43.85	BJP	29.74	INC	30.85	INC
Dangs	51.54	BJP	73.71	INC	69.74	INC	58.87	BJP	55.91	INC	49.34	INC	66.26	INC	39.89	JD	38.4	INC	36.6	INC
Danta	38.43	INC	74.4	INC	74.9	INC	60.46	INC	65.65	INC	64.42	INC	73.55	BJP	53.69	BJP	40.39	INC	46.49	INC
Dariapur	58.8	BJP	65.16	INC	70.57	INC	57.78	BJP	53.22	BJP	49.11	BJP	55.66	BJP	49.89	BJP	45.02	INC	51.5	INC
Dasada	56.28	BJP	65.2	INC	64.94	BJP	52.31	BJP	66.28	INC	56.85	BJP	67.41	BJP	52.73	BJP	41.86	INC	49.22	INC
Daskroi	37.72	BJP	71.87	BJP	71.82	BJP	56.87	BJP	60.23	BJP	54.97	BJP	51.95	BJP	46.82	BJP	53.38	INC	53.73	INC
Dediapada	45.79	AAP	85.45	RTP	89.19	BJP	70.81	INC	67.63	IND	61.42	JD	71.67	BJP	41.79	BJP	42.02	INC	32.29	INC

Constituency	2022	2017	2012	2007	2002	1998	1995	1990	1985	1980
Abdasa	■	■	■	■	■	■	■	■	■	■
Amreli	■	■	■	■	■	■	■	■	■	■
Anand	·	■	■	■	■	■	■	·	■	·
Anjar	·	■	■	■	■	·	·	·	·	·
Ankleshwar	■	■	■	■	■	■	■	■	■	■
Asarwa	·	■	■	■	■	■	■	■	■	·
Balasinor	·	■	■	■	■	■	■	■	·	·
Bardoli	·	■	■	■	■	■	■	·	■	·
Vadodara City	·	■	■	■	■	■	■	■	·	·
Bayad	·	■	■	■	■	■	■	■	■	■
Bharuch	■	■	■	■	■	■	■	■	■	■
Bhavnagar North	■	■	■	■	■	■	■	·	■	·
Bhavnagar South	■	■	■	■	■	■	■	·	·	·
Bhiloda	■	■	■	■	■	■	■	■	■	·
Bhuj	■	■	■	■	■	■	■	■	·	·
Borsad	■	■	■	■	■	■	■	■	■	·
Botad	■	■	■	■	■	■	■	■	·	·
Valsad	·	■	■	■	■	■	■	■	·	·
Khambhat	■	■	■	■	■	■	■	■	■	■
Chanasma	·	■	■	■	■	■	■	■	■	■
Chhota Udaipur	■	■	■	■	■	·	·	·	·	·
Choryasi	·	■	■	■	·	·	·	·	·	·
Chotila	■	■	■	■	■	■	■	■	■	·
Dabhoi	■	■	■	■	■	■	■	■	■	■
Dahod	■	■	■	·	■	·	·	·	·	·
Dangs	■	■	■	■	■	·	·	·	·	·
Danta	·	■	■	■	■	■	■	■	·	·
Dariapur	■	■	■	■	■	·	·	·	·	·
Dasada	■	■	■	■	■	■	■	■	·	·
Daskroi	·	■	■	■	■	■	■	·	·	·



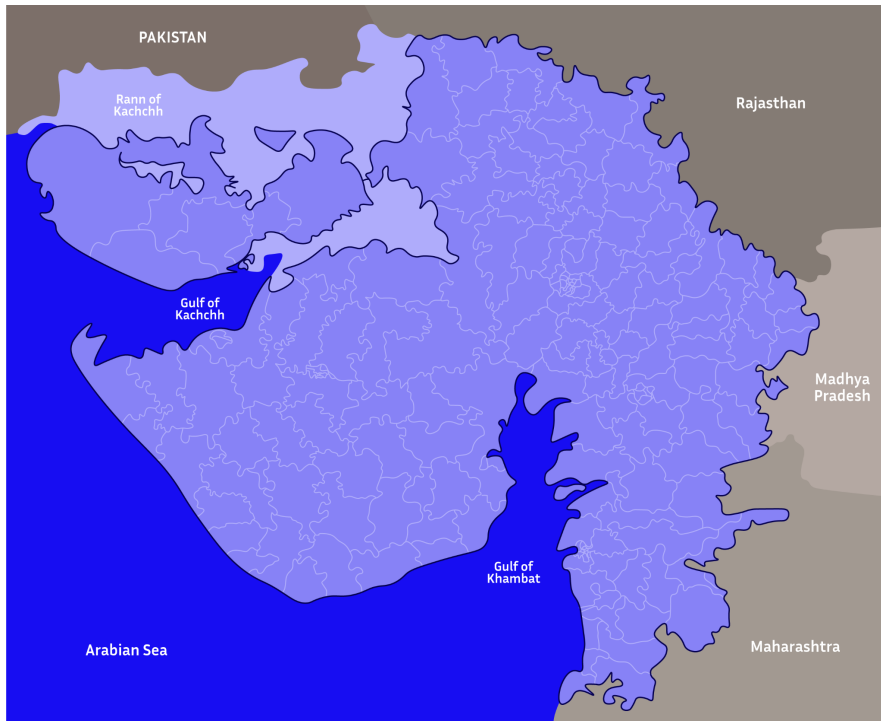
Voter Turnout % Vote Margin %

Visualizing the Assembly election data in this way facilitates second-order insights about the winning party's performance in each constituency over the last 10 elections.

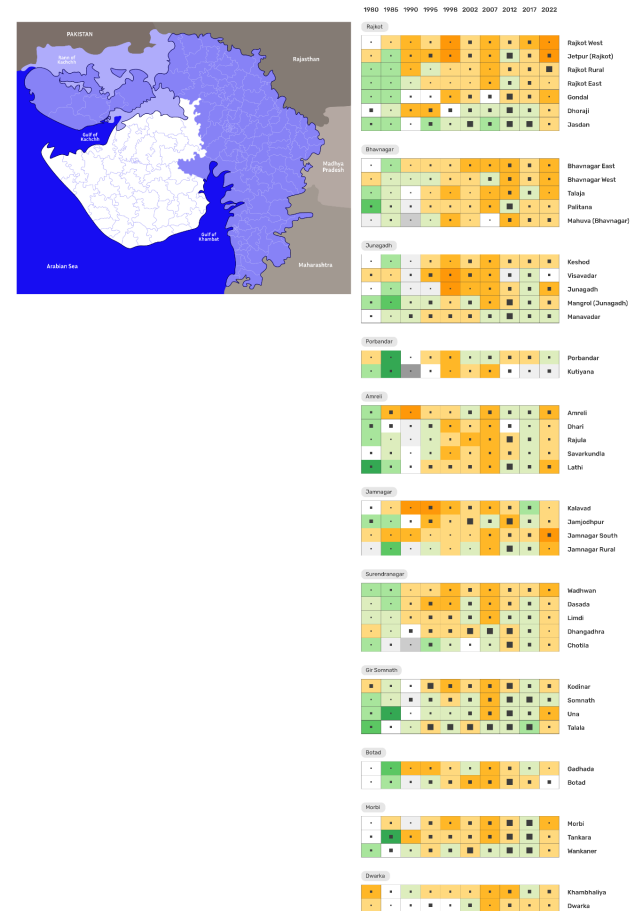
The constituencies can be grouped on the basis of various factors -

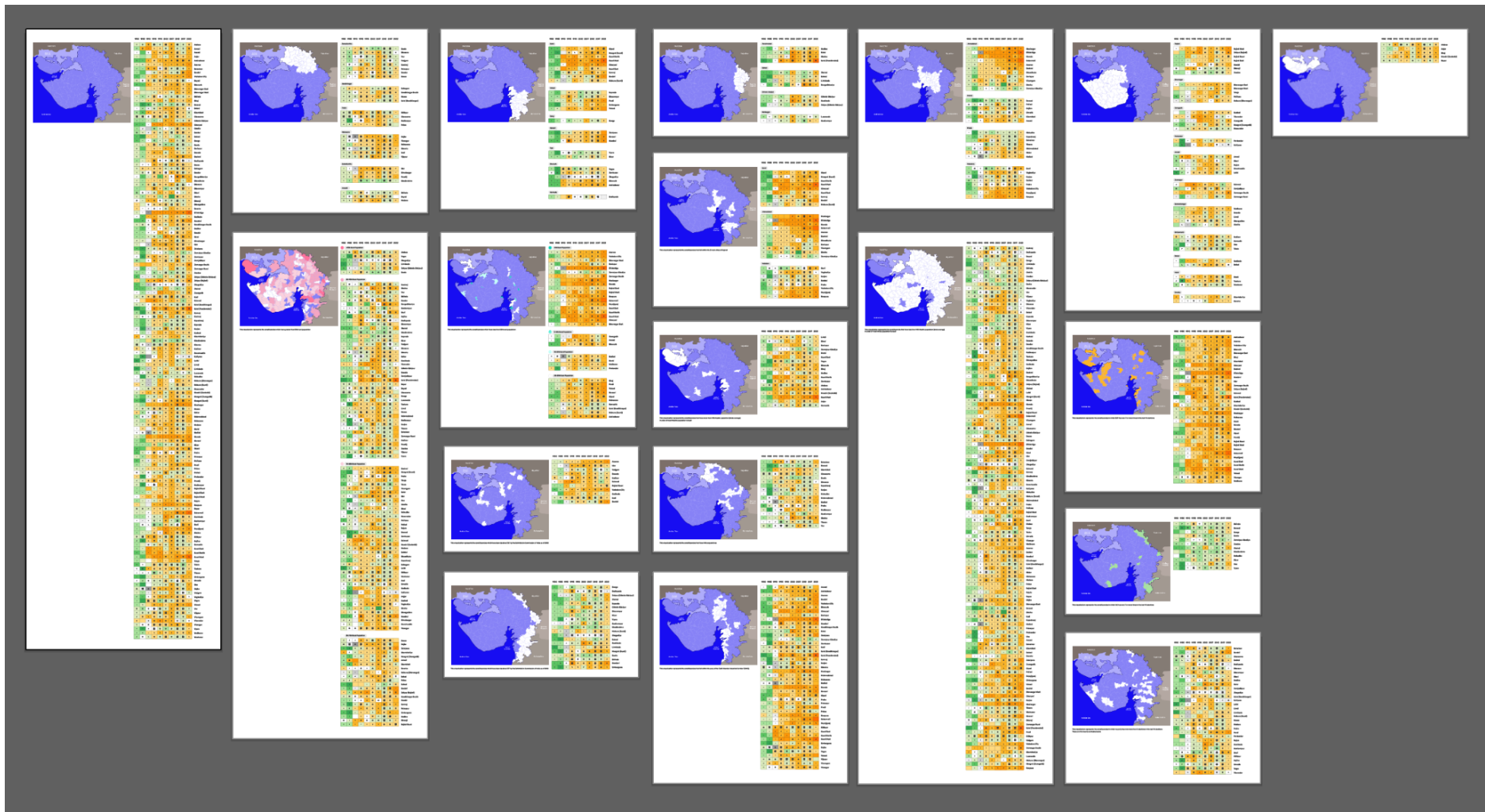
1. **Region** - North, South, East, Central, Saurashtra, Kutch
2. **Economics** - Rural, Urban, Main cities
3. **Community** - SC, ST, Muslims, Hindus, OBCs and other dominant communities like Patidars, Kolis, etc
4. **Party Performance** - Battleground Seats, BJP Dominated, INC Dominated

On taking feedback from users, there was a need for spatial representation of the constituencies on the map. This could also aid in insights as to the geographical factors or groups affecting the party performance.

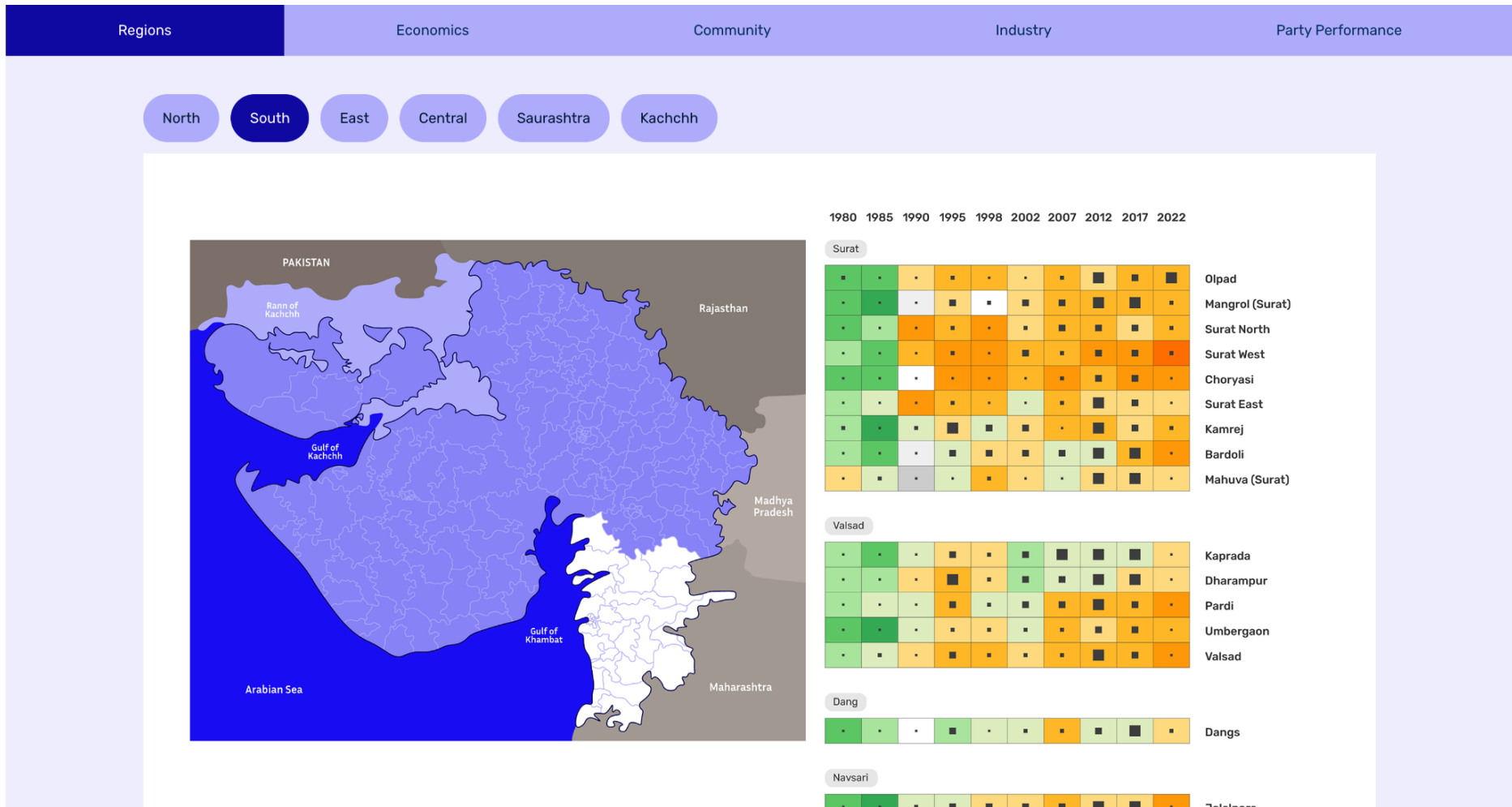


The excel data was again recreated on Adobe Illustrator for various groups and classifications





Since the project does not use code, multiple visualizations had to be created manually for filters (Regions, Communities, etc)



Final data visualization as seen on the [website](#)

Recurrent Candidates

Many candidates have been known to switch parties while contesting for the same constituency

CHAUHAN MANSHINH KOHYABHAI	6	BALASINOR	BJP
CHAUHAN MANSHINH KOHYABHAI	7	BALASINOR	BJP
CHAUHAN MANSHINH KOHYABHAI	8	BALASINOR	BJP
CHAUHAN MANSHINH KOHYABHAI	9	BALASINOR	AIRJP
CHAUHAN MANSHINH KOHYABHAI	10	BALASINOR	INC
CHAUHAN MANSHINH KOHYABHAI	11	BALASINOR	INC
CHAUHAN MANSHINH KOHYABHAI	12	BALASINOR	INC
CHAUHAN MANSHINH KOHYABHAI	13	BALASINOR	BJP
CHAUHAN MANSHINH KOHYABHAI	14	BALASINOR	BJP

While many candidates are loyal to the same party but are shifted to contest at a different constituency as part of the party's strategy

YOGESH NARANYAN DAS PATEL	8	RAOPURA	BJP
YOGESH NARANYAN DAS PATEL	9	RAOPURA	BJP
YOGESH NARANYAN DAS PATEL	10	RAOPURA	BJP
YOGESH NARANYAN DAS PATEL	11	RAOPURA	BJP
YOGESH NARANYAN DAS PATEL	12	MANJALPUR	BJP
YOGESH NARANYAN DAS PATEL	13	MANJALPUR	BJP
YOGESH NARANYAN DAS PATEL	14	MANJALPUR	BJP

This data can be represented to gain insights about longest standing candidates - the parties/ constituencies they have

represented and changes over the years and whether this has had any impact on them winning the seats.

The data can also be used to understand whether Turncoats have had any success despite being long contesting candidates.

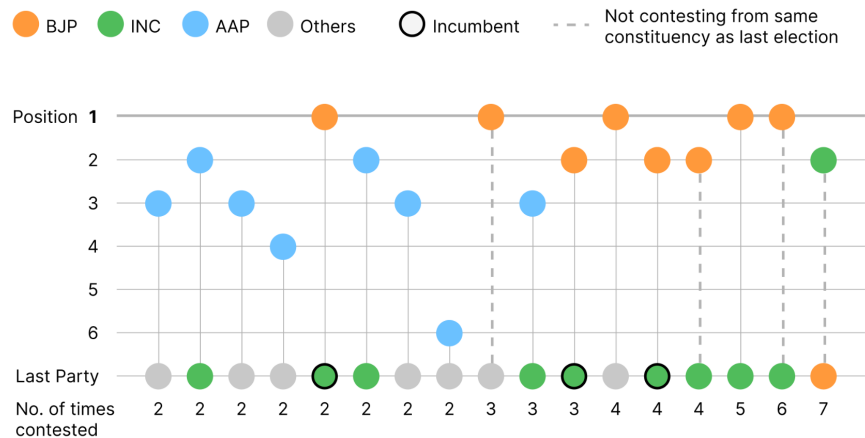
Positi	Candidate	Party	Conteste	No_Terms	Turncoat	Incumbent
2	PRABHATSINH PRA	INC	7	5	TRUE	FALSE
1	Vinendrasinh Dilipsin	BJP	6	3	TRUE	FALSE
1	Balvantsinh Chandan	BJP	5	3	TRUE	FALSE
2	MANIBHAI JETHABH	BJP	4	1	TRUE	FALSE
2	Ashvin Kotval	BJP	4	3	TRUE	TRUE
1	FATESINH VAKHATS	BJP	4	3	TRUE	FALSE
6	LALJIBHAI KARABH/	SP	3	0	TRUE	FALSE
11	Rajesh Gaurishankar	Right to	3	0	TRUE	FALSE
1	Kandhalbhai Sarman	SP	3	3	TRUE	TRUE
2	HARSHADKUMAR M	BJP	3	1	TRUE	TRUE
3	Takhatsinh Ravsinh S	AAP	3	0	TRUE	FALSE
8	MANILAL BHOGILAL	Bhartiya	3	0	TRUE	FALSE
1	RAMESHBHAI NARA	BJP	3	2	TRUE	FALSE
6	ALPESHKUMAR CHI	Bahujan	3	0	TRUE	FALSE
6	VASANTBHAI VALJI	AAP	2	0	TRUE	FALSE
3	Gameti Bipinchandra	AAP	2	0	TRUE	FALSE
2	OMPRAKASH DARO	AAP	2	0	TRUE	FALSE
1	Bhagabhai Dhanabha	BJP	2	2	TRUE	TRUE
11	SHANTILAL DANABH	Rashtriy	2	0	TRUE	FALSE
10	BHUPATBHAI MOHA	Right to	2	0	TRUE	FALSE
4	GAJENDRASINH HA	AAP	2	0	TRUE	FALSE
3	RAVJIBHAI SOMABH	AAP	2	0	TRUE	FALSE
2	Vakhala Bharatsinh P	AAP	2	0	TRUE	FALSE
7	Prakashbhai Somabh	RSPS	2	0	TRUE	FALSE
3	ASHOKBHAI MOHAN	AAP	2	0	TRUE	FALSE

Positi	Candidate	Party	Constituency Contested	Last_Party	Last_Constit	Same_Con	Same_Party	No_Terms	Turncoat	Incumbent
2	PRABHATSINH PRA	INC	KALOL	7 BJP	GODHRA	FALSE	FALSE	5	TRUE	FALSE
1	Vinendrasinh Dilipsinh	BJP	HIMATNAGAF	6 INC	PRANTIJ	FALSE	FALSE	3	TRUE	FALSE
1	Balvantsinh Chandan	BJP	SIDHPUR	5 INC	SIDHPUR	TRUE	FALSE	3	TRUE	FALSE
2	MANIBHAI JETHABH	BJP	VADGAM	4 INC	IDAR	FALSE	FALSE	1	TRUE	FALSE
2	Ashvin Kotval	BJP	KHEDBRAHM	4 INC	KHEDBRAHM	TRUE	FALSE	3	TRUE	TRUE
1	FATESINH VAKHATS	BJP	KALOL	4 GPP	KALOL	TRUE	FALSE	3	TRUE	FALSE
2	HARSHADKUMAR M	BJP	VISAVADAR	3 INC	VISAVADAR	TRUE	FALSE	1	TRUE	TRUE
3	Takhtsinh Ravsinh S	AAP	SHEHRA	3 INC	SHEHRA	TRUE	FALSE	0	TRUE	FALSE
1	RAMESHBHAI NARA	BJP	BHARUCH	3 BJSH	BROACH	FALSE	FALSE	2	TRUE	FALSE
6	VASANTBHAI VALJI	AAP	ABDASA	2 REALDP	ABDASA	TRUE	FALSE	0	TRUE	FALSE
3	Gameti Bipinchandra	AAP	KHEDBRAHM	2 JD(U)	KHEDBRAHM	TRUE	FALSE	0	TRUE	FALSE
2	OMPRAKASH DARO	AAP	NARODA	2 INC	NARODA	TRUE	FALSE	0	TRUE	FALSE
1	Bhagabhai Dhanabhe	BJP	TALALA	2 INC	TALALA	TRUE	FALSE	2	TRUE	TRUE
4	GAJENDRASINH HA	AAP	ANKLAV	2 AINHCP	ANKLAV	TRUE	FALSE	0	TRUE	FALSE
3	RAVJIBHAI SOMABH	AAP	MAHUDHA	2 GPP	MAHUDHA	TRUE	FALSE	0	TRUE	FALSE
2	Vakhala Bharatsinh P	AAP	DEVGADH B/	2 INC	DEVGADH B/	TRUE	FALSE	0	TRUE	FALSE
3	ASHOKBHAI MOHAN	AAP	UMBERGAON	2 BNP	UMBERGAON	TRUE	FALSE	0	TRUE	FALSE

Some of the observations that can be made from the visualization -

- 1) Large no of candidates shifted from INC while most candidates shifted to either AAP or BJP
- 2) The more experienced candidates shifted to BJP while less experiences ones to AAP
- 3) Only few candidates contested from different constituency and all were experienced candidates
- 4) Of all the turncoats, BJP won the most seats
- 5) All incumbents were from INC

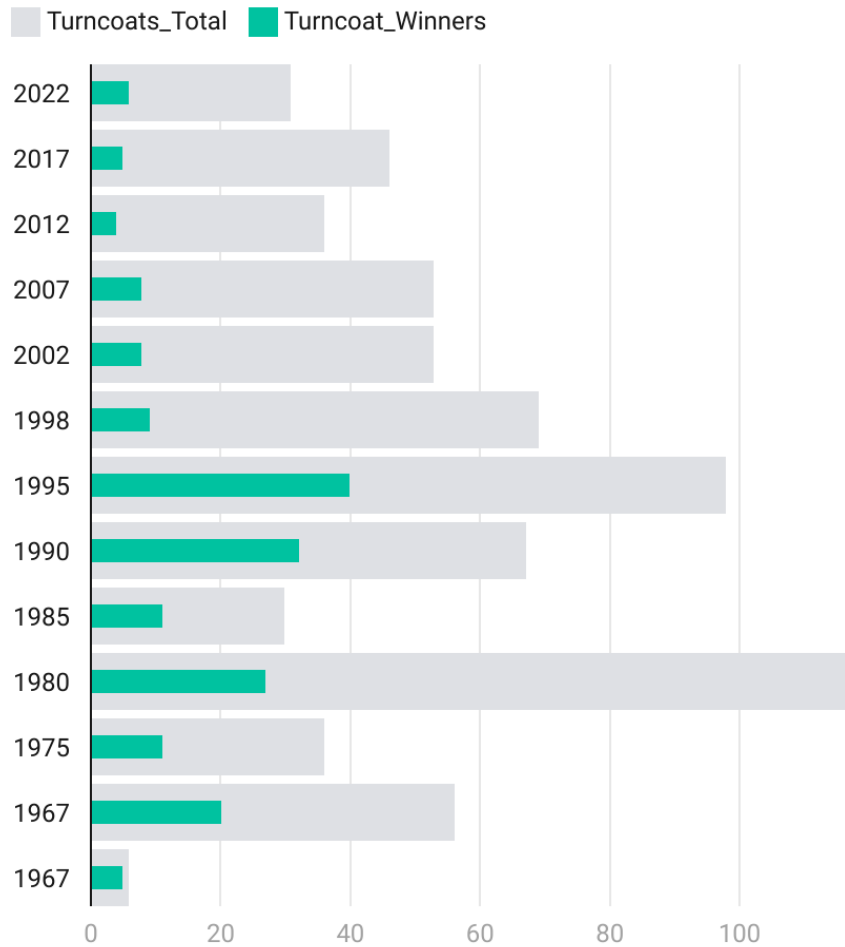
Turncoat candidates in 2022 Gujarat Assembly Elections



Turncoat candidates in the 2022 Gujarat Assembly Election:

The 6 variables to be represented are -

- 1) Position, 2) Current Party, 3) Last Party,
- 4) Whether contesting from same constituency, 5) No. of times contested 6) Whether Incumbent



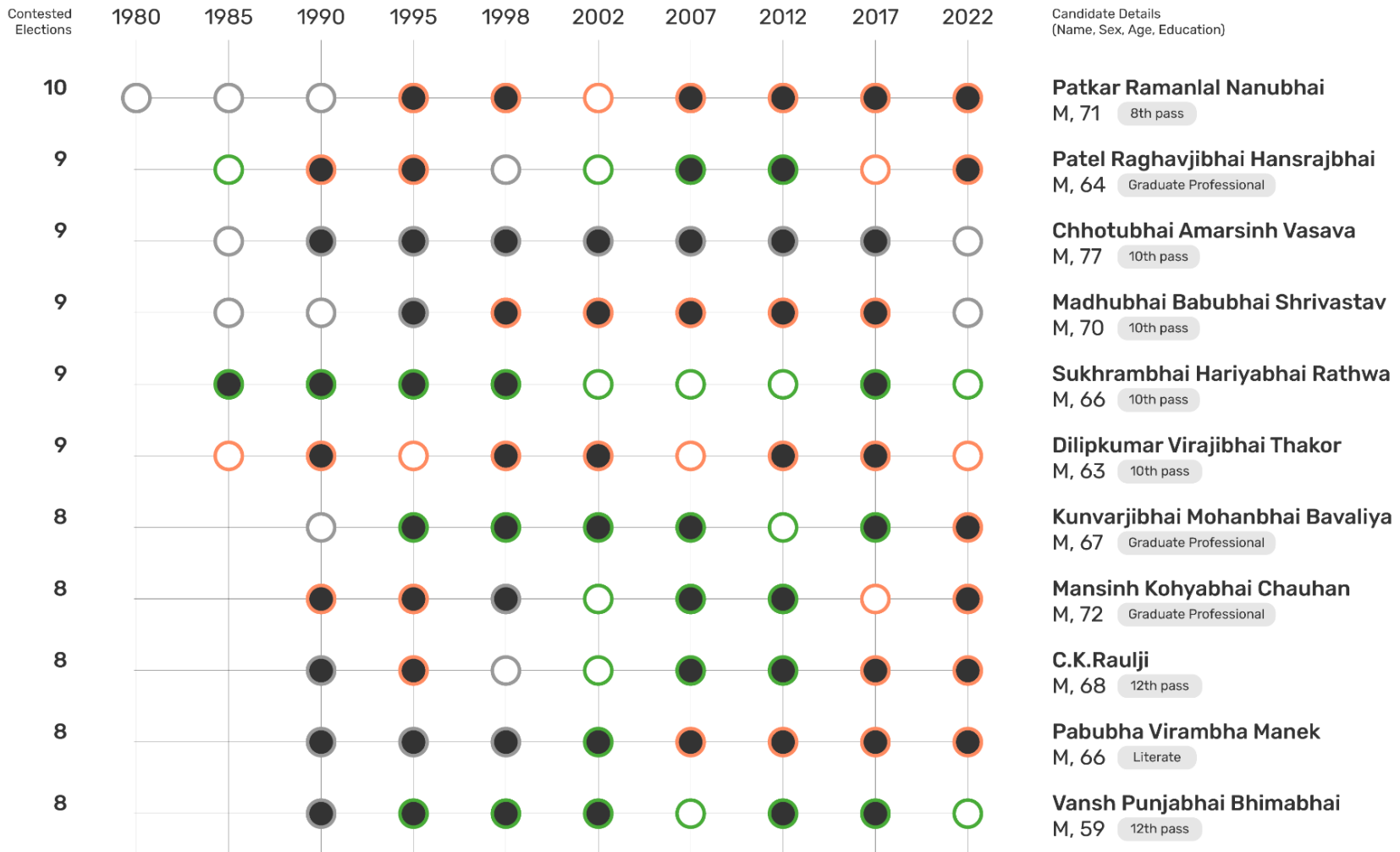
Both the number of Turncoats as well as the wins gained by them have decreased over the years

Contested	Candidate	Party	Positi	Constituency	Last_Party	Last_Constit
10	CHHOTUBHAI AMAF	IND	2	JHAGADIA	JD(U)	JHAGADIA
10	PATEL RAGHAVJIBH	BJP	1	JAMNAGAR F	BJP	JAMNAGAR F
10	PATKAR RAMANLAL	BJP	1	UMBERGAON	BJP	UMBERGAON
9	KUNVARJIBHAI MOH	BJP	1	JASDAN	BJP	JASDAN
9	Mansinh Kohyabhai C	BJP	1	BALASINOR	BJP	BALASINOR
9	C.K.RAULJI	BJP	1	GODHRA	BJP	GODHRA
9	MADHUBHAI BABUB	IND	4	VAGHODIA	BJP	VAGHODIA
9	SUKHRAMBHAI HAF	INC	3	JETPUR	INC	JETPUR
8	Pabubha Virambha M	BJP	1	DWARKA	BJP	DWARKA
8	Yogeshbhai Naranda	BJP	1	MANJALPUR	BJP	MANJALPUR
8	VANSH PUNJABHAI	INC	2	UNA	INC	UNA
8	Dilipkumar Virajibhai	BJP	2	CHANASMA	BJP	CHANASMA
8	KIRITSINH JITUBHA	BJP	1	LIMBDI	BJP	LIMBDI
8	JAWAHARBHAI PETI	BJP	2	MANAVADAR	BJP	MANAVADAR
8	Govindbhai Rajibhai	BJP	1	UMRETH	BJP	UMRETH
8	ARUN MEHTA	Commur	5	BHAVNAGAR	CPM	BHAVNAGAR
7	RAMANLAL ISHWAR	BJP	1	IDAR	BJP	DASADA
7	AMRUTIYA KANTILA	BJP	1	MORVI	BJP	MORVI
7	NAKRANI KESHUBH	BJP	2	GARIADHAR	BJP	GARIADHAR
7	Ayar Mulubhai Harda	BJP	1	KHAMBHALIA	BJP	JAMNAGAR F
7	PRABHATSINH PRA	INC	2	KALOL	BJP	GODHRA
7	Chimanbhai Sapariya	BJP	2	JAMJODHPU	BJP	JAMJODHPU
7	Dhirubhai Chunilal Bh	INC	2	SANKHEDA	INC	SANKHEDA
7	PATEL JAYANTILAL	INC	2	MORVI	INC	MORVI
6	PARSHOTTAMBHAI	BJP	1	BHAVNAGAR	BJP	BHAVNAGAR
6	DESAI PANKAJBHAI	BJP	1	NADIAD	BJP	NADIAD

Through the Assembly election dataset for 2022, the candidates were arranged in descending order of No. of contested elections. 124 entries were found for candidates who had contested in 3 or more elections since 1980

Contested	Candidate	1980 Party	1980 Position	1985 Party	1985 Position	1990 Party	1990 Position	1995 Party	1995 Position	1998 Party	1998 Position	2002 Party	2002 Position	2007 Party	2007 Position	2012 Party	2012 Position	2017 Party	2017 Position	2022 Party
10	PATKAR RAMANLAL NANUBHAI	JNP	2	JNP	2	JD	2	BJP	1	BJP	1	BJP	2	BJP	1	BJP	1	BJP	1	BJP
9	PATEL RAGHAVJIBHAI HANSRAJBHAI	-	-	INC	2	BJP	1	BJP	1	AIRJP	2	INC	2	INC	1	INC	1	BJP	2	BJP
9	CHHOTUBHAI AMARSINH VASAVA	-	-	JNP	2	JD	1	IND	1	JD	1	JD(U)	1	JD(U)	1	JD(U)	1	BTP	1	IND
9	MADHUBHAI BABUBHAI SHRIVASTAV	-	-	IND	4	IND	2	IND	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	IND
9	SUKHRAMBHAI HARIYABHAI RATHWA	-	-	INC	1	INC	1	INC	1	INC	1	INC	2	INC	2	INC	2	INC	1	INC
9	Dilipkumar Virajibhai Thakor	-	-	BJP	2	BJP	1	BJP	2	BJP	1	BJP	1	BJP	2	BJP	1	BJP	1	BJP
8	KUNVARJIBHAI MOHANBHAI BAVALIYA	-	-	-	-	JD	2	INC	1	INC	1	INC	1	INC	1	INC	2	INC	1	BJP
8	Mansinh Kohyabhai Chauhan	-	-	-	-	BJP	1	BJP	1	AIRJP	1	INC	2	INC	1	INC	1	BJP	2	BJP
8	C.K.RAULJI	-	-	-	-	JD	1	BJP	1	AIRJP	3	INC	2	INC	1	INC	1	BJP	1	BJP
8	Pabubha Virambha Manek	-	-	-	-	IND	1	IND	1	IND	1	INC	1	BJP	1	BJP	1	BJP	1	BJP
8	VANSH PUNJABHAI BHIMABHAI	-	-	-	-	JD	1	INC	1	INC	1	INC	1	INC	2	INC	1	INC	1	INC
8	JAWAHARBHAI PETHALJIBHAI CHAVDA	-	-	-	-	INC	1	INC	2	INC	2	-	-	INC	1	INC	1	INC	1	BJP
8	ARUN MEHTA	-	-	CPM	3	CPM	2	CPM	2	CPM	3	CPM	2	CPM	2	CPM	3	-	-	CPM
8	Govindbhai Rajibhai Parmar	-	-	INC	-	DDP	7	IND	1	INC	1	INC	2	IND	3	BJP	2	BJP	1	BJP
8	Yogeshbhai Narandas Patel	-	-	-	-	JD	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP
7	KIRITSINH JITUBHA RANA	-	-	-	-	-	-	BJP	1	BJP	1	BJP	2	BJP	1	BJP	2	BJP	2	BJP
7	RAMANLAL ISHWARLAL VORA	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	2	BJP
7	AMRUTIYA KANTILAL SHIVLAL	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	2	BJP
7	Chimanbhai Sapariya	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	2	BJP	1	BJP	2	BJP
7	NAKRANI KESHUBHAI HIRJIBHAI	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP
7	PRABHATSINH PRATAPSINH CHAUHAN	INC	1	INC	1	-	-	BJP	1	BJP	1	BJP	1	BJP	2	-	-	-	-	INC
7	Dhirubhai Chunilal Bhil	-	-	-	-	-	-	IND	1	INC	1	INC	2	INC	1	INC	1	INC	2	INC
6	SHANKARBHAI LAGDHIRBHAI CHAUDHARI	-	-	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	2	BJP
6	KESHAJI SHIVAJI CHAUHAN	-	-	-	-	-	-	IND	2	-	-	INC	3	IND	4	BJP	1	BJP	2	BJP
6	Vinendrasinh Dilipsinh Zala	-	-	BJP	2	BJP	1	BJP	1	-	-	INC	2	INC	2	-	-	-	-	BJP
6	Arjunbhai Devabhai Modhwadia	-	-	-	-	-	-	-	-	INC	3	INC	1	INC	1	INC	2	INC	2	INC
6	Babubhai Bhimabhai Bokhiriya	-	-	-	-	-	-	BJP	1	BJP	1	BJP	2	-	-	BJP	1	BJP	1	BJP
6	JOSHI BHIKHABHAI GALABHAI	-	-	-	-	-	-	INC	1	INC	2	INC	1	-	-	INC	2	INC	1	INC
6	VIRJIBHAI THUMMAR	-	-	-	-	JD	1	INC	1	INC	2	INC	2	-	-	-	-	INC	1	INC
6	HIRABHAI ODHAVJIBHAI SOLANKI	-	-	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	2	BJP
6	PARSHOTTAMBHAI O. SOLANKI	-	-	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP
6	DESAI PANKAJBHAI VINUBHAI (GOTIYO)	-	-	-	-	-	-	-	-	BJP	1	BJP	1	BJP	1	BJP	1	BJP	1	BJP

For these 124 candidates, data was collected for their position and contested party across the last 10 elections. This gave insights regarding how many candidates were switching parties, or were loyal to one party and whether they won the seats or not.



This dataset however, did not give further insights into how remaining at or changing the party affected the candidate's performance. Or whether the candidates had contested from the same constituency throughout their terms.

Contested	Candidate	1980	1985	1990	1995	1998	2002	2007	2012	2017	2022													
10	Patkar Ramanlal Nanubhai	JNP 2	46.4€ UMB	JNP 2	75.4€ UMB	JD 2	12.04 UMB	BJP 1	17.3€ UMB	BJP 1	4.31 UMB	BJP 2	0.06 UMB	BJP 1	34.2€ UMB	BJP 1	19.81 UMB	BJP 1	26.4€ UMB	BJP 1	37.4 UMBERGAON			
9	Patel Raghavjibhai Hansrajibhai	-	-	-	INC 2	9.91 KAL	BJP 1	53.2€ KAL	BJP 1	45.77 KAL	AIRJI 2	1.91 JODI	INC 2	2.59 JODI	INC 1	5.35 JODI	INC 1	2.44 JAM	BJP 2	4.32 JAM	BJP 1	29.1€ JAMNAGAR RURAL		
9	Chhotubhai Amarsinh Vasava	-	-	-	JNP 2	34.3€ JHAC	JD 1	53.11 JHAC	IND 1	31.9€ JHAC	JD 1	17.2 JHAC	JD(U) 1	14.5 JHAC	JD(U) 1	7.1 JHAC	JD(U) 1	7.82 JHAC	BTP 1	25.87 JHAC	IND 2	11.9 JHAGADIA		
9	Madhubhai Babubhai Shrivastav	-	-	-	IND 4	39.5 BAR	IND 2	0.94 VAG	IND 1	28.7€ VAG	BJP 1	24 VAG	BJP 1	30.34 VAG	BJP 1	8.03 VAG	BJP 1	3.74 VAG	BJP 1	6.03 VAG	IND 4	34.6 VAGHODIA		
9	Sukhrambhai Hariyabhai Rathwa	-	-	-	INC 1	20.2€ CHH	INC 1	3.54 CHH	INC 1	35.24 CHH	INC 1	9.96 CHH	INC 2	27.87 CHH	INC 2	6.22 CHH	INC 2	2.72 JETP	INC 1	1.8 JETP	INC 3	28.9€ JETPUR		
9	Dilipkumar Virajibhai Thakor	-	-	-	BJP 2	30.7€ JETP	BJP 1	14.1€ SAM	BJP 2	27.47 SAM	BJP 1	17.5€ SAM	BJP 1	12.1€ SAM	BJP 2	4.41 SAM	BJP 1	10.4€ CHAI	BJP 1	4.61 CHAI	BJP 2	0.75 CHANASMA		
8	Kunvarjibhai Mohanbhai Bavaliye	-	-	-	-	-	JD 2	13.7€ JASC	INC 1	23.6€ JASC	INC 1	15.9€ JASC	INC 1	15.94 JASC	INC 1	22.3€ JASC	INC 2	5.63 BOT	INC 1	5.49 JASC	BJP 1	10.0€ JASDAN		
8	Mansinh Kohyabhai Chauhan	-	-	-	-	-	BJP 1	28.0€ BAL	BJP 1	25.4€ BAL	AIRJI 1	22.8€ BAL	INC 2	5.1 BAL	INC 1	16.0€ BAL	INC 1	9.9 BAL	BJP 2	6.19 BAL	BJP 1	28.2€ BALASINOR		
8	C.K.Raulji	-	-	-	-	-	JD 1	12.4€ GOD	BJP 1	12.0€ GOD	AIRJI 3	14.3€ GOD	INC 2	49.14 KALC	INC 1	12.4€ GOD	INC 1	1.8 GOD	BJP 1	0.14 GOD	BJP 1	18.8€ GODHRA		
8	Pabubha Virambha Manek	-	-	-	-	-	IND 1	13.1€ DWA	IND 1	11.82 DWA	IND 1	7.01 DWA	INC 1	6.19 DWA	BJP 1	13.7€ DWA	BJP 1	3.79 DWA	BJP 1	3.69 DWA	BJP 1	2.96 DWARKA		
8	Vansh Punjabhai Bhimabhai	-	-	-	-	-	JD 1	12.6€ UNA	INC 1	5.5 UNA	INC 1	19.2€ UNA	INC 1	2 UN	INC 2	7.32 UNA	INC 1	5.07 UNA	INC 1	3.29 UNA	INC 2	25.64 UNA		
8	Arun Mehta	-	-	-	CPM 3	33.41 BHA	CPM 2	11.69 BHA	CPM 2	16.07 BHA	CPM 3	20.21 BHA	CPM 2	27.0€ BHA	CPM 2	24.7€ BHA	CPM 3	55.5€ BHA	-	-	-	CPM 5	59.5€ BHAVNAGAR EAST	
8	Govindbhai Rajjibhai Parmar	-	-	-	-	-	DDP 7	44.0€ SAVL	IND 1	9.49 SAR	INC 1	9.53 SAR	INC 2	1.37 SAR	IND 3	31.5 SAR	BJP 2	0.86 UMR	BJP 1	1.06 UMR	BJP 1	14.34 UMRETH		
8	Yogeshbhai Narandas Patel	-	-	-	-	-	JD 1	27.44 RAO	BJP 1	24.07 RAO	BJP 1	25.2€ RAO	BJP 1	50.7€ RAO	BJP 1	40.7€ RAO	BJP 1	37.67 MAN	BJP 1	35.1€ MAN	BJP 1	63.6€ MANJALPUR		
7	Jawaharbai Pethalji Chavde	-	-	-	-	-	INC 1	1.99 MAN	INC 2	4.66 MAN	INC 2	9.63 MAN	-	-	-	INC 1	2.05 MAN	INC 1	2.77 MAN	INC 1	19.2€ MAN	2.25 MANAVADAR		
7	Kiritsinh Jitubha Rana	-	-	-	-	-	-	-	BJP 1	7.87 LIMB	BJP 1	8.37 LIMB	BJP 2	17.8€ LIMB	BJP 1	6.81 LIMB	BJP 2	0.99 LIMB	BJP 2	8.85 LIMB	BJP 1	12.6 LIMBDI		
7	Ramanlal Ishwarlal Vora	-	-	-	-	-	-	-	BJP 1	33.6€ IDAR	BJP 1	27.4€ IDAR	BJP 1	21.8€ IDAR	BJP 1	13.21 IDAR	BJP 1	6.22 IDAR	BJP 2	2.41 DAS	BJP 1	19.1 IDAR		
7	Amrutiya Kantilal Shivlal	-	-	-	-	-	-	-	BJP 1	9.19 MOR	BJP 1	24.0€ MOR	BJP 1	1.33 MOR	BJP 1	16.21 MOR	BJP 1	1.71 MOR	BJP 2	1.86 MOR	BJP 1	32.0€ MORVI		
7	Chimanbhai Sapariya	-	-	-	-	-	-	-	BJP 1	22.4€ JAM	BJP 1	11.85 JAM	BJP 1	2.92 JAM	BJP 2	0.02 JAM	BJP 1	20.7€ JAM	BJP 1	1.86 JAM	BJP 2	6.91 JAMJODHPUR		
7	Nakrani Keshubhai Hirjibhai	-	-	-	-	-	-	-	BJP 1	10.9 SIHC	BJP 1	8.25 SIHC	BJP 1	6.14 SIHC	BJP 1	3.89 SIHC	BJP 1	13.44 GAR	BJP 1	1.66 GAR	BJP 2	3.44 GARIADHAR		
7	Prabhatsinh Pratapsinh Chauhan	INC 1	14.0€ KALC	INC 1	45.94	-	-	-	BJP 1	41.14 KALC	BJP 1	27 KALC	BJP 1	49.14 KALC	BJP 2	12.4€ GOD	-	-	-	-	-	-	INC 2	61.2€ KALOL
7	Dhirubhai Chunilal Bhil	-	-	-	-	-	-	-	IND 1	11.03 NAS	INC 1	22.12 NAS	INC 2	21.4€ NAS	INC 1	3.72 NAS	INC 1	0.84 SAN	INC 2	7.02 SAN	INC 2	15.7€ SANKHEDA		
6	Shankarbai Lagdhirbhai Chaudh	-	-	-	-	-	-	-	-	BJP 1	20.1€ RAD	BJP 1	7.98 RAD	BJP 1	22.8€ RAD	BJP 1	6.78 VAV	BJP 2	3.19 VAV	BJP 1	3.19 THARAD			
6	Keshaji Shivaji Chauhan	-	-	-	-	-	-	-	IND 2	5.67 DEO	-	-	-	INC 3	14.92 DEO	IND 4	21.2 DEO	BJP 1	13.3€ DEO	BJP 2	0.58 DEO	BJP 1	19.94 DEODAR	
6	Vinendrasinh Dilipsinh Zala	-	-	-	BJP 2	0.49 PRAI	BJP 1	7.99 PRAI	BJP 1	32.1€ PRAI	-	-	-	INC 2	16.6€ PRAI	INC 2	11.26 PRAI	-	-	-	-	BJP 1	4.34 HIMATNAGAR	
6	Arjunbhai Devabhai Modhwadia	-	-	-	-	-	-	-	-	-	INC 3	37.3 POR	INC 1	4.61 POR	INC 1	9.27 POR	INC 2	11.75 POR	INC 2	1.2 POR	INC 1	4.92 PORBANDAR		
6	Babubhai Bhimabhai Bokhiriya	-	-	-	-	-	-	-	BJP 1	14.94 POR	BJP 1	31.77 POR	BJP 2	4.61 POR	-	-	BJP 1	11.75 POR	BJP 1	1.2 POR	BJP 2	4.92 PORBANDAR		
6	Joshi Bhikhabhai Galabhai	-	-	-	-	-	-	-	INC 1	7.63 MALI	INC 2	6.33 MALI	INC 1	10.2€ MALI	-	-	-	INC 2	9.62 JUN	INC 1	3.93 JUN	INC 2	24.74 JUNAGADH	
6	Virjibhai Thummar	-	-	-	-	-	JD 1	21.1€ BABF	INC 1	13.14 BABF	INC 2	16.47 BABF	INC 2	1.95 BABF	-	-	-	-	-	-	INC 1	7.21 LATH	INC 2	22.17 LATHI
6	Hirabhai Odhavjibhai Solanki	-	-	-	-	-	-	-	-	BJP 1	17.44 RAJL	BJP 1	38.3€ RAJL	BJP 1	30.1€ RAJL	BJP 1	12.57 RAJL	BJP 2	7.72 RAJL	BJP 1	5.83 RAJULA			
6	Parshottambhai O. Solanki	-	-	-	-	-	-	-	-	BJP 1	18.2€ GH	BJP 1	15.4€ GH	BJP 1	32.24 GH	BJP 1	11 BHAV	BJP 1	19.14 BHAV	BJP 1	40.2€ BHAVNAGAR RURAL			
6	Desai Pankajbhai Vinubhai (Goty)	-	-	-	-	-	-	-	-	BJP 1	15.51 NADI	BJP 1	19.64 NADI	BJP 1	11.3 NADI	BJP 1	4.36 NADI	BJP 1	12.4€ NADI	BJP 1	32.54 NADIAD			
6	Ahir(Bharvad) Jethabhai Ghelabr	-	-	-	-	-	-	-	-	SP 1	24.5€ SHEH	BJP 1	47.1€ SHEH	BJP 1	16.1€ SHEH	BJP 1	18.61 SHEH	BJP 1	24.3€ SHEH	BJP 1	26.0€ SHEHRA			

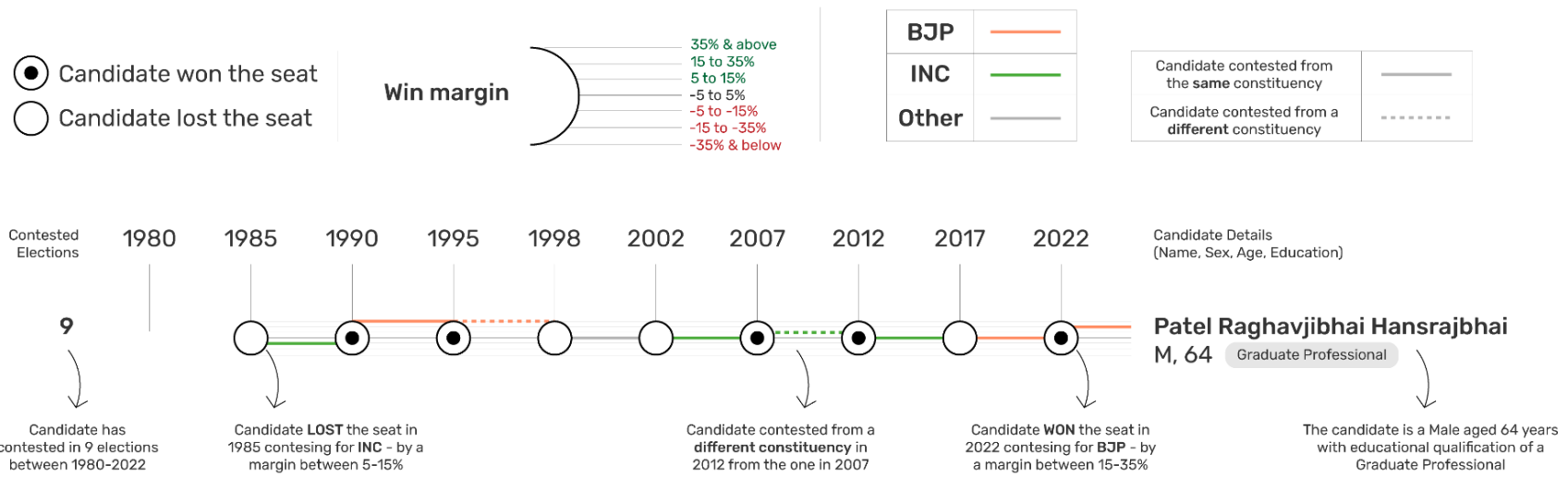
Thus, more information was added - each candidate's winning or losing margin for the seat contested, and the constituency they contested from. So the variables that would affect the visualization are -

1. Party contested from
2. Whether candidate won or lost the seat
3. The winning/losing margin
4. Whether there is a change in the constituency the candidate is contesting from

Some explorations were made for representing this data

Option 1

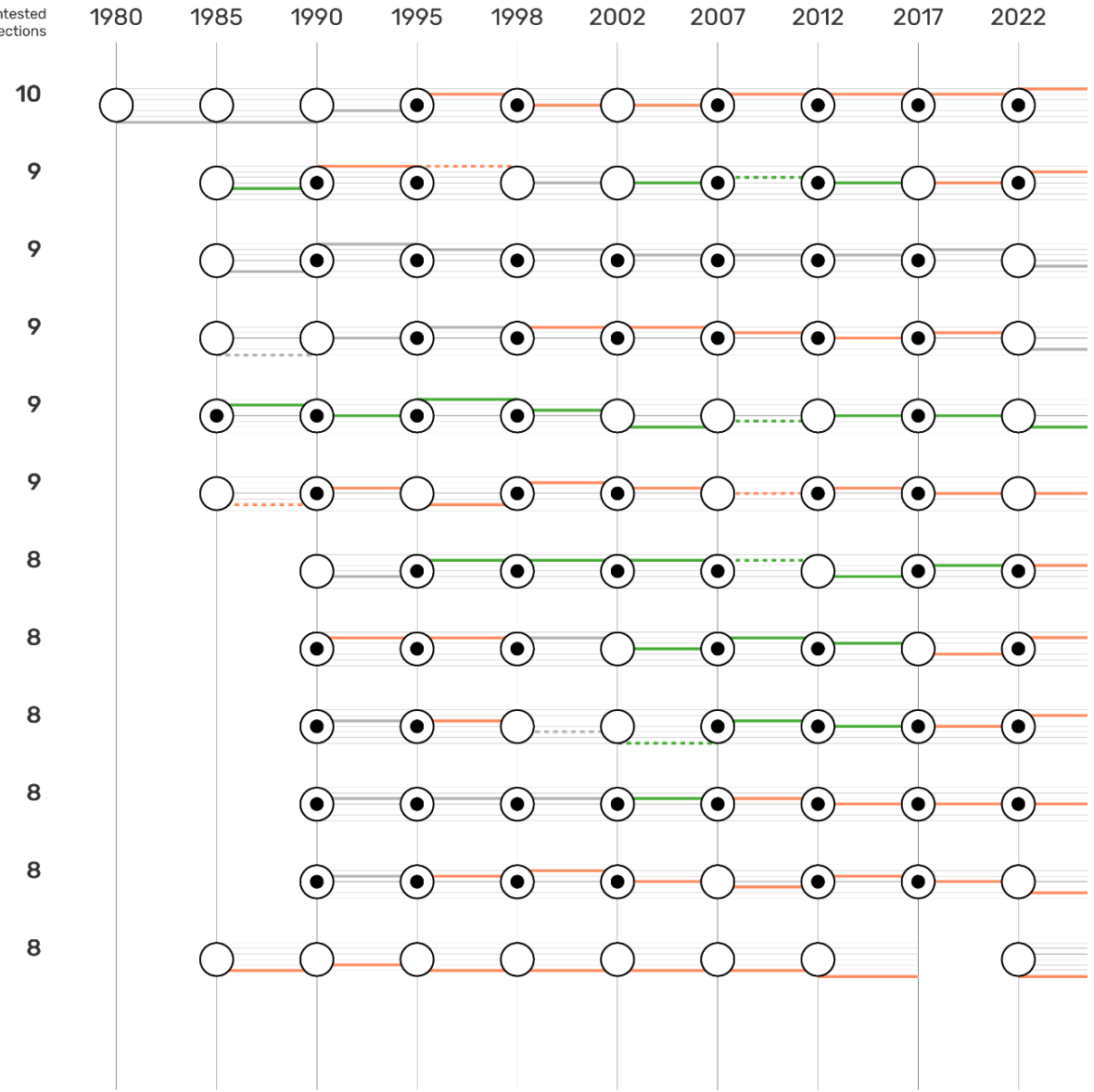
How to read this visualization



This visualization represented the variables through the following elements -

1. Party contested from - Colour of lines between the circles
2. Whether candidate won or lost the seat - Empty circle for loss, bulleted circle for win
3. The winning/losing margin - Through the position of the lines between the circles - along the vertical axis
4. Change in the constituency the candidate is contesting from - solid lines for no change vs dotted lines for change

Contested Elections



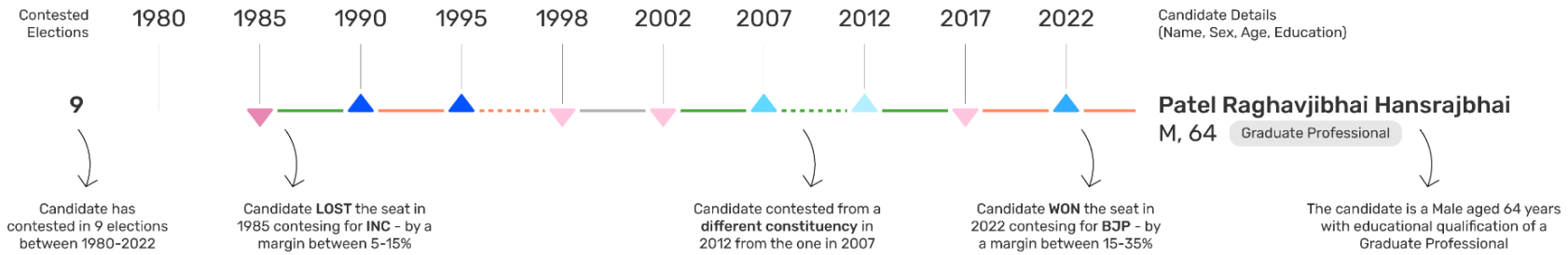
Candidate Details
(Name, Sex, Age, Education)

- Patkar Ramanlal Nanubhai**
M, 71 8th pass
- Patel Raghavjibhai Hansrajibhai**
M, 64 Graduate Professional
- Chhotubhai Amarsinh Vasava**
M, 77 10th pass
- Madhubhai Babubhai Shrivastav**
M, 70 10th pass
- Sukhrambhai Hariyabhai Rathwa**
M, 66 10th pass
- Dilipkumar Virajibhai Thakor**
M, 63 10th pass
- Kunvarjibhai Mohanbhai Bavaliya**
M, 67 Graduate Professional
- Mansinh Kohyabhai Chauhan**
M, 72 Graduate Professional
- C.K.Raulji**
M, 68 12th pass
- Pabubha Virambha Manek**
M, 66 Literate
- Vansh Punjabhai Bhimabhai**
M, 59 12th pass
- Arun Mehta**
M, 65 Graduate

How to read this visualization

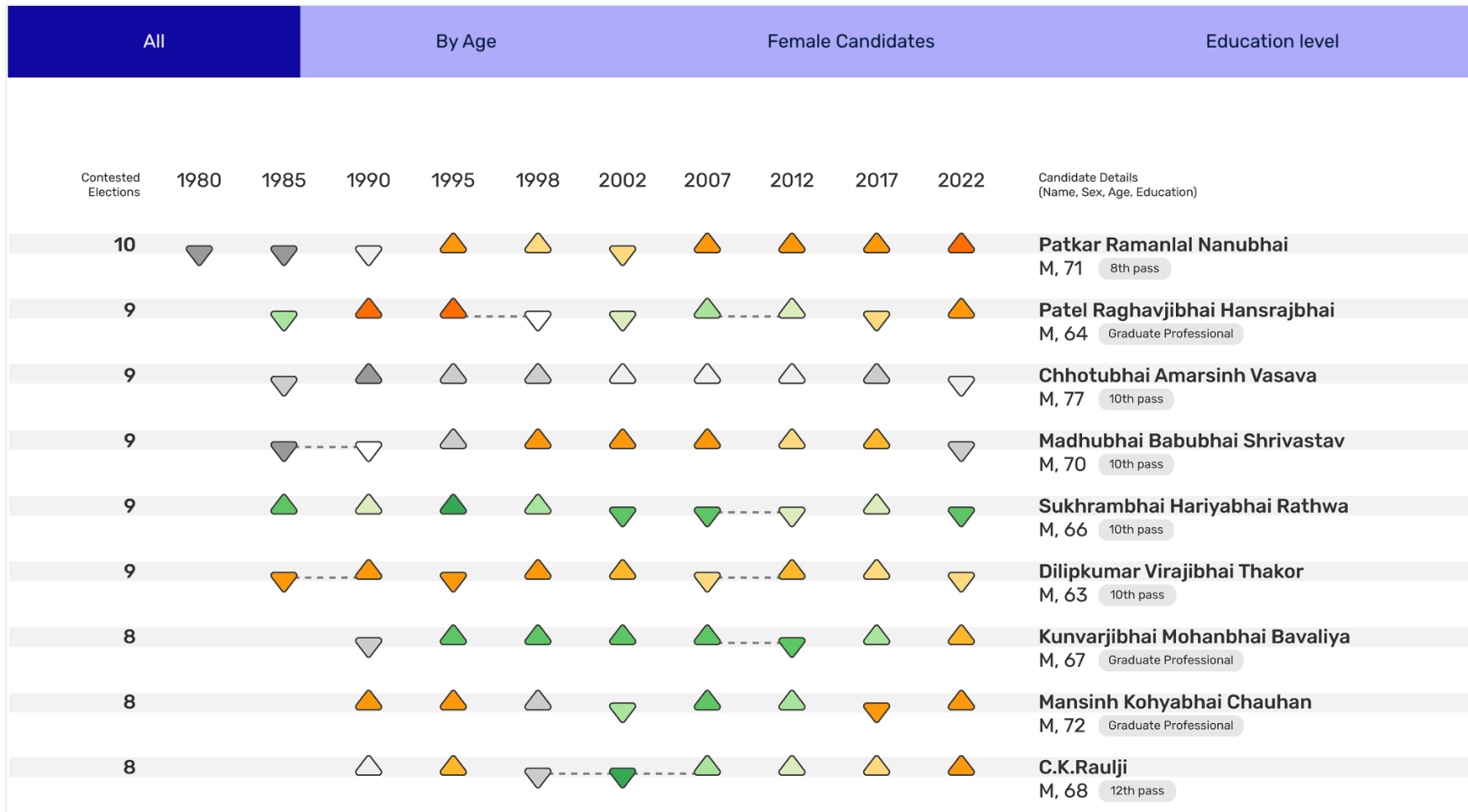
		0-5%	5-15%	15-35%	35% +		
▲ Candidate won the seat	Win margin	▲	▲	▲	▲	BJP	—
▼ Candidate lost the seat	Loss margin	▼	▼	▼	▼	INC	—
						Other	—

Candidate contested from the same constituency	—
Candidate contested from a different constituency	-----



This visualization represented the variables through the following elements -

1. Party contested from - Colour of lines between the arrow shapes
2. Whether candidate won or lost the seat - Upward arrow for win, downward arrow for loss
3. The winning/losing margin - A gradient color scale for the arrow shapes shows the degree of win/loss
4. Change in the constituency the candidate is contesting from - solid lines for no change vs dotted lines for change



Final data visualization as seen on the [website](#)

Evaluation

Multiple rounds of qualitative feedback were taken from users while conceptualizing the data visualizations. This helped in making necessary changes and conscious design choices.

The following points were considered while evaluating the iterations -

1. Effectiveness - Evaluating how well the data visualizations are communicating the intended information
2. Clarity, accuracy, and comprehensibility - Identifying any misunderstandings or misinterpretations, making necessary adjustments
3. Interpretation - Gauging how users perceive and interpret the visualized data, whether they are able to derive insights.
4. Visual Design - Judging the encodings, color schemes, readability, the overall aesthetics of the visualization

By means of continuously evaluating the data visualizations throughout the duration of the project - the process allowed for an iterative design process, gathering useful feedback, making adjustments, and refining the visualization over time.

The website which will let the users interact with the 2 main data visualizations of this project, will also be evaluated in terms of the same points mentioned before, as well as the usability and user experience of the overall website.

Along with this, expert feedback will be taken to identify any specific aspects that need further refinement.

Challenges

Data collection and cleaning: The election data originally comes from the statistical reports published by the Election Commission of India. Lok Dhaba, a project of the Trivedi Center for Political Data, has cleaned and treated the ECI data and organized it in a tabular format. Although this made the data easy to access, there were further problems with it -

1. The data repository for Assembly elections is large - an average of 7 candidates contesting for 182 constituencies over 10 elections, makes up for around 13,000 entries with multiple variables.
2. Inconsistent values and variables in data across the years - Party or candidate names were different or misspelled - in such cases changes had to be made manually after checking each entry
3. Delimitation process due to which the constituencies are shuffled, re-numbered and sometimes changed
4. Some areas have been renamed over the years - eg: Baroda to Vadodara, Cambay to Khambhat

Visualizations for Longitudinal data: There are multiple existing visualizations for election data that cover the current election, and also some that deal with past 1-2 elections. The unique aspect of this project was to study election data spanning multiple past elections. To be able to effectively show changes across time - the visualization must rely on interactions as little as possible. This presents multiple challenges -

1. Data volume and complexity: To be able to visualize a significant volume of data without compromising on individual details
2. Missing or incomplete data: Dealing with missing data while maintaining the integrity and accuracy of the visualization (eg: change in the constituencies over years)
3. Multivariate nature: Longitudinal data often includes multiple variables or dimensions. Presenting these relationships between the data can be difficult but rewarding (eg: Party vote margin and Voter turnout)
4. Visual clutter and overplotting: High density of observations can lead to visual clutter and overplotting issues, making it difficult to discern individual data points or patterns. Aggregating or summarizing data can help address these challenges

Shortcomings & Future Scope

This project was made without coding, depending entirely on available softwares and resources. This limits the interactivity and usability. This also poses a problem with scaling further ideas and future changes (adding data from upcoming elections once it's available). However, this project can be used as a roadmap to build a software which visualizes such Election data. It can be extended for Assembly elections held in any state, with any number of constituencies.

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