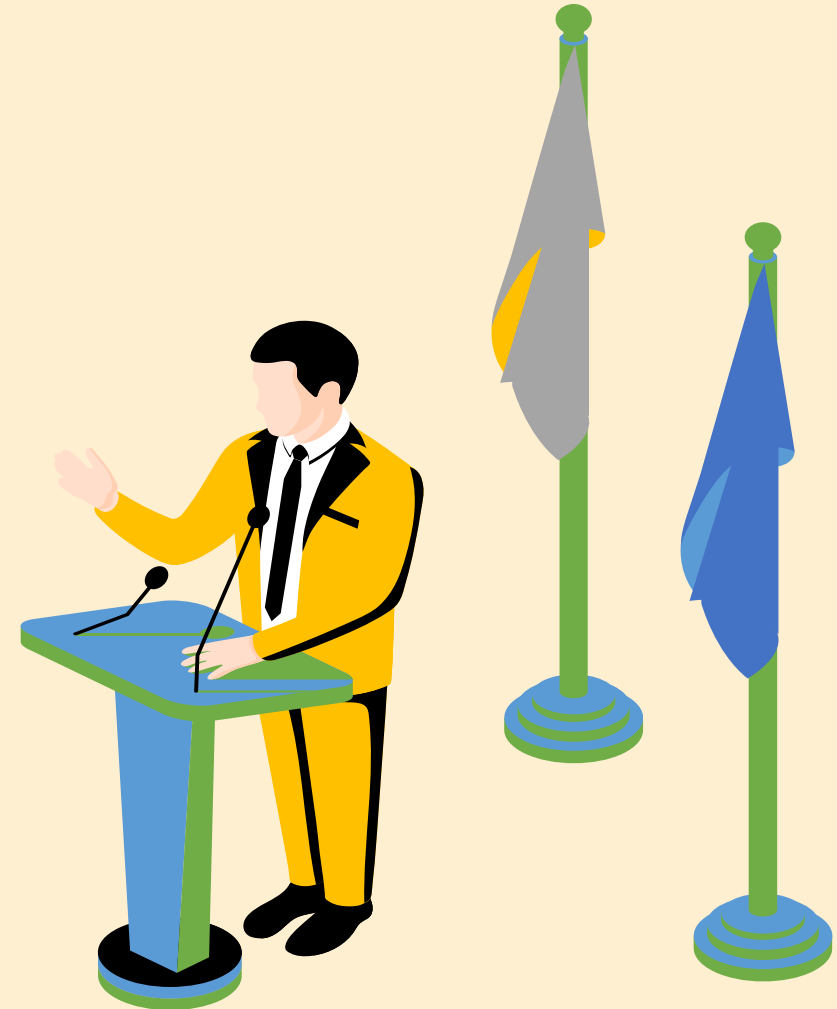
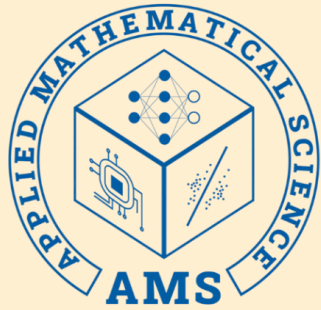




# **“A Study of Comparing BJP and INC: For Understanding Voter Perception and Preference toward Gujarat ”**





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# **“A Study of Comparing BJP and INC: For Understanding Voter Perception and Preference toward Gujarat ”**

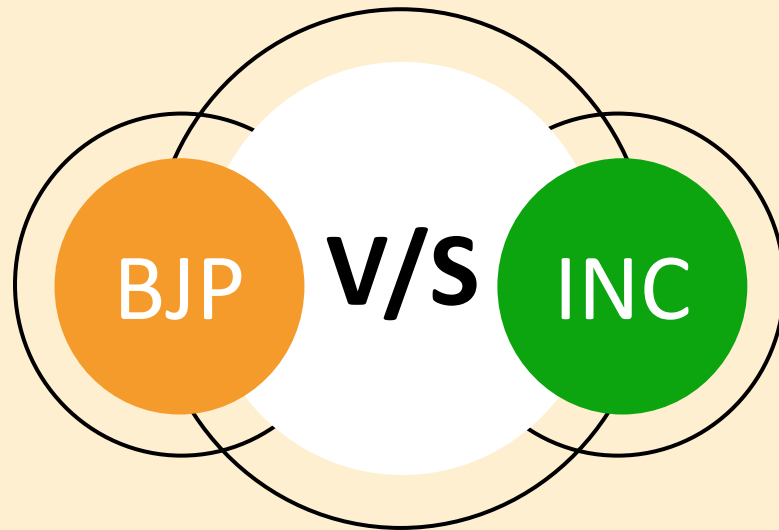
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# Introduction :

- This project is a study on comparing the two main political parties in Gujarat, the Bharatiya Janata Party (BJP) and the Indian National Congress (INC), in order to understand voter perception and preference.
- Additionally, this study will identify the variables that influence voters' willingness to support the Bharatiya Janata Party (BJP) and the Indian National Congress (INC).
- The study will be conducted in two phases. The first phase will involve collecting data through close ended questionnaire in Gujarat. For the second phase of the study, SPSS (Statistical Package for the Social Sciences) software will be used to examine data applying a discriminant analysis method.

# Literature review :

- Author: S. Kothari and B. Vora (2002) This book examines the Indian National Congress's (INC) political history in Gujarat. The authors argue that the INC has been in decline in Gujarat since the 1990s due to a number of factors, including the rise of the BJP, the internal divisions within the INC, and the party's failure to address the concerns of the Gujarati people. Relevance: This book is relevant to the given project topic because it provides insights into the INC's political position in Gujarat. This information can be used to identify factors that influence voter perception and preference toward the INC.
- Author: G. Desai (2004) This book examines the role of caste and class in Gujarat politics. The author argues that caste and class are important factors in determining voter choice in Gujarat. The author also argues that the BJP has been successful in mobilizing upper-caste and middle-class voters, while the INC has been successful in mobilizing lower-caste and working-class voters. Relevance: This book is relevant to the given project topic because it provides insights into the role of caste and class in Gujarat politics. This information can be used to identify factors that influence voter perception and preference toward the BJP and INC.

# Literature review :

- Lokniti Programme of the Centre for the Study of Developing Societies (CSDS) The essay introduces the National Election Study (2004) to readers of the set of papers published here which draw heavily on the findings of the study. It presents the basic methodological details so that the quality and limitations of the data can be assessed. The paper also traces the evolution of the tradition of the NES in India and discusses some of its current dilemmas, so as to invite a healthy debate on value and limitations of survey research. To this end, after marking the continuities and changes in a four decade-old tradition and noting the distinctive attributes of the NES 2004, the essay presents the sample frame, the sampling technique and the profile of the sample. It concludes by placing NES 2004 in a comparative perspective and raising some larger questions.
- Author: M. Shah (2008) Abstract: This book examines the politics of development in Gujarat. The author argues that the Gujarat model of development is based on a neoliberal economic approach that has benefited the rich at the expense of the poor. The author also argues that the BJP's Hindutva ideology has led to an increase in communal violence in Gujarat. Relevance: This book is relevant to the given project topic because it provides insights into the BJP's development policies in Gujarat. This information can be used to identify factors that influence voter perception and preference toward the BJP.

# Literature review :

- Author: A. Thorat and J. P. D'Souza (2018) Abstract: This book provides a critical assessment of the Gujarat model of development. The authors argue that the Gujarat model is based on a neoliberal economic approach that has benefited the rich at the expense of the poor. The authors also argue that the BJP's Hindutva ideology has led to an increase in communal violence in Gujarat. Relevance: This book is relevant to the given project topic because it provides insights into the BJP's economic and social policies in Gujarat. This information can be used to identify factors that influence voter perception and preference toward the BJP.
- Author: D. Ravinder (2020) Abstract: This paper examines the voting patterns of different class groups in the 2019 Indian election. The author finds that the BJP performed better among upper-class and middle-class voters, while the INC performed better among lower-class voters. The author also finds that the BJP's Hindutva ideology was a key factor in its success in the 2019 election. Relevance: This paper is relevant to the given project topic because it provides insights into the voting patterns of different class groups in Gujarat. This information can be used to design a discriminant analysis model that can classify voters in Gujarat into BJP and INC supporters based on their class affiliation.



# Objective :

- This study's main objective is to identify the differences in voter behavior between the BJP and INC and to identify the underlying reasons for those differences.
- The other objectives are as follows:
  - To determine the discriminant function's statistical significance and see if there are any statistical differences between groups in terms of the predictor variables.
  - To determine which independent factors are relatively more effective in group discrimination.
  - To recognize a linear combination of variables that best discriminate across different dependent variable categories.
  - To identify this model's hit ratios and cross-validation ratios.



**Data collection :**

# Data collection :

- **Sampling Technique : Quota sampling** is a non-probability sampling technique that involves dividing a population into groups based on pre-determined characteristics such as age, gender, income, location, or other relevant criteria. The researcher then sets a quota for each stratum, based on the proportion of the population that it represents, and selects participants until the quota is reached.
- The **33 Gujarat districts** make up the population in the present case. **Set a quota of 10 samples** for each district in this situation. This means that for each of the 33 districts, 10 samples should be taken from District 1, 10 samples from District 2, and so on.
- 330 respondents' primary data was collected via a closed-ended questionnaire.

# Data collection :

- **Questionnaire Design:**

- **5 Point's Likert scale** has been used in 10 questionnaire.
- Rate your **level of trust** for the BJP and INC as a political parties.
- Rate how does the BJP and INC parties prioritize **local issues** in your opinion.
- How effective do you believe it is BJP and INC political parties' **public communications**?
- Considering the **leadership** of the BJP and the INC, rate them.
- Rate how would you categorize your perception of the overall **economic growth** under BJP and INC parties' governance.
- How would you rate the BJP and the INC parties' policies on **national security**?

Very Low	Low	Neutral	High	Very High
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Data collection :

- Rate how the BJP and the INC parties handle **social issues**.
- Rate how does BJP and INC parties' approach **social welfare**.
- Rank the BJP and the INC political parties according to their strategy for handling **international affairs**.

Very Bad	Bad	Neutral	Good	Very Good
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- How much do you agree with the BJP and the INC political parties' **stated policies**?

Strongly Disagr...	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Data collection :

- 151 respondents are from the rural area and 179 are from the urban area out of the 330 respondents whose data was gathered using a closed-ended questionnaire. 133 respondents said they are going to vote for the INC, while 197 said they are going to vote for the BJP.



# Methodology :

# Reliability Testing :

- Testing the reliability of the measurement model is measured by looking at the value of Cronbach's alpha.
- A Cronbach's alpha value Higher than 0.8 is considered Highly satisfactory.
- Here, Cronbach's Alpha is 0.980 for 10 variables of BJP and Cronbach's Alpha is 0.984 for 10 variables of INC.
- Cronbach's alpha value denotes **multiple-question Likert scale surveys are reliable.**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.980	10

Reliability Statistics for 10  
Independent variables of BJP.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.984	10

Reliability Statistics for 10  
Independent variables of INC.



# Validity Testing :

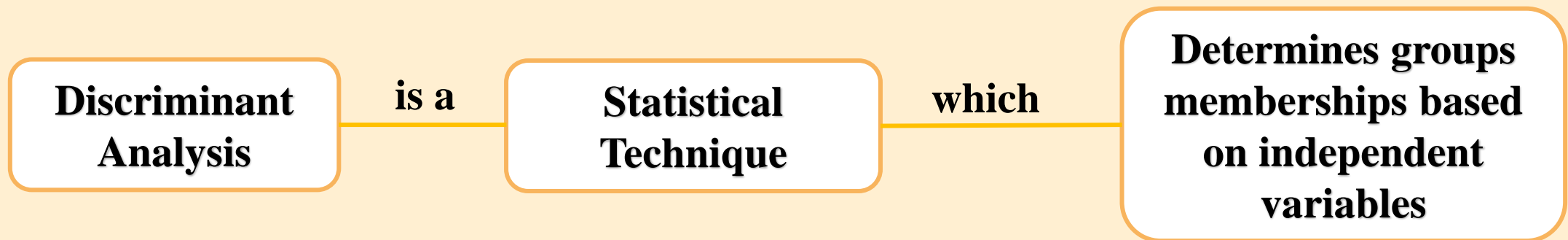
- Critical value for Pearson correlation at 0.01 level of significance and d.f. ( $n-2 = 298$ ) is **0.155**.
- Here all values with Pearson correlation to total are **greater than 0.155** so we can say that our data is valid.

Correlations																						
		Level of trust [BJP]	Level of trust [INC]	Local issues [BJP]	Local issues [INC]	Public communications [BJP]	Public communications [INC]	Leadership [BJP]	Leadership [INC]	Economic growth [BJP]	Economic growth [INC]	National security [BJP]	National security [INC]	Social issues [BJP]	Social issues [INC]	Social welfare [BJP]	Social welfare [INC]	International affairs [BJP]	International affairs [INC]	Stated policies [BJP]	Stated policies [INC]	Total
Level of trust [BJP]	Pearson Correlation	1	-.798**	.835**	-.74**	.809**	-.745**	.876**	-.752**	.834**	-.718**	.830**	-.750**	.824**	-.760**	.808**	-.751**	.835**	-.773**	.855**	-.775**	.257**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Level of trust [INC]	Pearson Correlation	-.798**	1	-.70**	.869**	-.723**	.874**	-.815**	.875**	-.781**	.846**	-.82**	.873**	-.768**	.876**	-.753**	.869**	-.807**	.888**	-.809**	.872**	.158**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.006
	N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
.....																						
Stated policies [BJP]	Pearson Correlation	.855**	-.809**	.853**	-.76**	.820**	-.753**	.853**	-.764**	.841**	-.752**	.835**	-.768**	.861**	-.745**	.856**	-.769**	.838**	-.784**	1	-.773**	.255**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Stated policies [INC]	Pearson Correlation	-.775**	.872**	-.70**	.855**	-.711**	.854**	-.772**	.844**	-.759**	.815**	-.76**	.867**	-.734**	.890**	-.757**	.887**	-.775**	.878**	-.773**	1	.195**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	
	N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	4.0874E-102	300	300	300	300
Total	Pearson Correlation	.257**	.158**	.344**	.227**	.325**	.220**	.243**	.184**	.265**	.226**	.226**	.223**	.315**	.233**	.298**	.212**	.220**	.189**	.255**	.195**	1
	Sig. (2-tailed)	.000	.006	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.001	
	N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300

\*\* . Correlation is significant at the 0.01 level (2-tailed).

# Discriminant Analysis :

- A statistical method known as discriminant analysis can identify a group's membership using a set of independent variables called metric predictors. This method's main purpose is to categorize each observation into a certain group or category based on the independent properties of the data.



# Hypothesis :

- Null hypothesis ( $H_0$ ) : There is no significance difference between two group of voters Bharatiya Janata Party (BJP) and Indian National Congress (INC). (Discriminant model is not significant)
- Alternative hypothesis ( $H_a$ ) : There is significance difference between two group of voters Bharatiya Janata Party (BJP) and Indian National Congress (INC). (Discriminant model is significant)



# Discriminant Result :

- **Objective (1) : To determine the discriminant function's statistical significance and see if there are any statistical differences between groups in terms of the predictor variables.**
  - Here the **p value is 0.00 which is less than 0.05** (the assumed level of significance) it is inferred that the discriminant **function is significant** and can be used for further interpretation of the results.
  - As we have defined Wilks' lambda as the ratio of **within-group sum of squares to total sum of squares**.
  - The Wilks' lambda takes a value between 0 and 1 and lower the value of Wilks' lambda, the higher is the significance of the discriminant function.
  - We find that the value of Wilks' lambda is **0.328** that means **32.8% of the variability** is not explained by the model.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.328	321.097	20	.000

# Discriminant Result :

- **Objective (1) : To determine the discriminant function's statistical significance and see if there are any statistical differences between groups in terms of the predictor variables.**
  - The last column of Table indicates **canonical correlation**, which is the simple correlation coefficient **between the discriminant score and their corresponding group membership (BJP / INC)**. The value of this is **0.820**
  - The square of the canonical correlation is  $(0.820)^2 = 0.6724$ , which means 67.24% of the variance in the discriminating model between a prospective BJP/INC due to the changes in the all-independent variables.
  - High eigen value is denotes more variance of the function explained through dependent variable and outcome variables as shown in the table eigenvalue is **2.049** which is proportionally to high given.

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.049 <sup>a</sup>	100.0	100.0	.820

a. First 1 canonical discriminant functions were used in the analysis.

# Discriminant Result :

- **Objective (2) : To determine which independent factors are relatively more effective in group discrimination.**
  - The absolute values of the coefficients in standardized discriminant function indicate the relative contribution of the variables in discriminating between the two groups.
  - It indicates that **Economic growth [INC]** is the most important characteristic, which discriminates between the BJP and INC, followed by all the other characteristics.
  - Additionally, we may add that a Level of trust [BJP], Leadership [BJP], Social welfare [INC], International affairs [BJP] all have a significant role in the discrimination of two groups.

Standardized Canonical Discriminant Function Coefficients	
	Function 1
Level of trust [BJP]	.373
Level of trust [INC]	-.362
Local issues [BJP]	-.193
Local issues [INC]	.057
Public communications [BJP]	-.050
Public communications [INC]	.195
Leadership [BJP]	.303
Leadership [INC]	.174
Economic growth [BJP]	-.148
Economic growth [INC]	-.644
National security [BJP]	.071
National security [INC]	-.236
Social issues [BJP]	.009
Social issues [INC]	.206
Social welfare [BJP]	.106
Social welfare [INC]	.292
International affairs [BJP]	.262
International affairs [INC]	-.053
Stated policies [BJP]	-.039
Stated policies [INC]	-.063

# Discriminant Result :

- **Objective (3) : To recognize a linear combination of variables that best discriminate across different dependent variable categories.**

- $$Y = (-1.017) + 0.379(X_1) - 0.373(X_2) - 0.182(X_3) + 0.059(X_4) - 0.048(X_5) + 0.193(X_6) + 0.307(X_7) + 0.169(X_8) - 0.143(X_9) - 0.717(X_{10}) + 0.069(X_{11}) - 0.239(X_{12}) + 0.009(X_{13}) + 0.211(X_{14}) + 0.105(X_{15}) + 0.291(X_{16}) + 0.259(X_{17}) - 0.054(X_{18}) - 0.039(X_{19}) - 0.065(X_{20})$$

- Where,

$Y$  = Discriminant Score

$X_i$  = Independent Variables

**Canonical Discriminant Function Coefficients**

	Function
	1
Level of trust [BJP]	.379
Level of trust [INC]	-.373
Local issues [BJP]	-.182
Local issues [INC]	.059
Public communications [BJP]	-.048
Public communications [INC]	.193
Leadership [BJP]	.307
Leadership [INC]	.169
Economic growth [BJP]	-.143
Economic growth [INC]	-.717
National security [BJP]	.069
National security [INC]	-.239
Social issues [BJP]	.009
Social issues [INC]	.211
Social welfare [BJP]	.105
Social welfare [INC]	.291
International affairs [BJP]	.259
International affairs [INC]	-.054
Stated policies [BJP]	-.039
Stated policies [INC]	-.065
(Constant)	-1.017

Unstandardized coefficients



# Discriminant Result :

- **Classification of Cases Using the Discriminant Function**

- The value of the function at group centroids (means) given in Table can be used for designing a decision rule to classify a voter into the BJP/INC category.
- Here size of sample in the two groups is not equal, the cut-off score for classification is computed as given below:

- $$C = \frac{n_2 \bar{Y}_1 + n_1 \bar{Y}_2}{n_1 + n_2} = \frac{(179 * (-1.735)) + (121 * 1.173)}{121 + 179} = -0.562$$

- Where,

$n_1$  = Total sample size of INC in the sample = 121

$n_2$  = Total sample size of BJP in the sample = 179

- Now, any respondent whose discriminant score is **greater than (-0.562)** would be classified as a **prospective BJP**, whereas the one with **score less than (-0.562)** would be classified as a **prospective INC**.

**Functions at Group Centroids**

	Function
Dummy	1
INC	-1.735
BJP	1.173

Unstandardized  
canonical  
discriminant  
functions evaluated  
at group means



# Discriminant Result :

- **Objective (4) :- To find Hit-ratio and cross validation ratio of this model.**

- Hit ratio =  $\frac{\text{No.of correct prediction}}{\text{Total number Of cases}}$
- **93.3%** of original grouped cases correctly classified.
- Cross validation is done only for those cases in the analysis. In cross validation , each cases is classified by the function derived from all cases other than that cases.
- **91.7%** of cross-validated grouped cases correctly classified.

Classification result	Original			
		INC	BJP	Total
	INC	112	9	121
	BJP	11	168	179
	Cross – Validation			
		INC	BJP	Total
	INC	109	12	121
	BJP	13	166	179
		INC	BJP	Total

# Discriminant Result :

- Out of Sample Performance :
  - This method is used to test the validity of the discriminant model.
  - The survey contained 330 observations, of which 300 were used to build the model. The remaining 30 observations were kept as 'hold-out' samples to test the out-of-sample performance of the model.
  - It is noted that out of 30 cases 26 are correctly classified resulting in an out-of-sample accuracy of 86.67%.

No. of resp.	Discriminant Score	Most Preferred
301	-0.119	Bharatiya Janata Party (BJP)
302	1.789	Bharatiya Janata Party (BJP)
303	-0.16	Indian National Congress (INC)
304	1.546	Bharatiya Janata Party (BJP)
305	-2.227	Indian National Congress (INC)
306	0.031	Bharatiya Janata Party (BJP)
307	-0.439	Bharatiya Janata Party (BJP)
308	-1.995	Indian National Congress (INC)
309	1.943	Bharatiya Janata Party (BJP)
310	-1.529	Indian National Congress (INC)
311	-1.969	Indian National Congress (INC)
312	-1.832	Indian National Congress (INC)
313	1.819	Bharatiya Janata Party (BJP)
314	2.021	Bharatiya Janata Party (BJP)
315	2.038	Bharatiya Janata Party (BJP)
316	0.938	Indian National Congress (INC)
317	-1.876	Indian National Congress (INC)
318	2.038	Bharatiya Janata Party (BJP)
319	-1.876	Bharatiya Janata Party (BJP)
320	-2.3	Indian National Congress (INC)
321	-0.444	Indian National Congress (INC)
322	0.233	Bharatiya Janata Party (BJP)
323	0.948	Bharatiya Janata Party (BJP)
324	1.513	Bharatiya Janata Party (BJP)
325	-1.488	Indian National Congress (INC)
326	1.344	Bharatiya Janata Party (BJP)
327	1.579	Bharatiya Janata Party (BJP)
328	1.513	Bharatiya Janata Party (BJP)
329	1.707	Bharatiya Janata Party (BJP)
330	-2.062	Indian National Congress (INC)



**Conclusion :**

## Conclusion :

- In conclusion, we can state that Bharatiya Janata Party (BJP) and the Indian National Congress (INC) **differ significantly from each other.**
- By voters' perception, we can state that Economic growth and Social welfare characteristics differentiate INC from BJP.
- By voters' perception, we can state that Level of Trust, Leadership and International affairs characteristics differentiate BJP from INC.
- The outcome suggest that the BJP and INC voters are different classify when it comes to government policy where additionally BJP and INC voter motivated by different factors for whom to vote for.

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**Thank you :**