Abstract
The various branches of geography adopted quantification much earlier, but the new approach in electoral geography was introduced at a later stage because of the late arrival of quantitative revolution in Political Geography. However, in western countries, electoral geography became a theme of research investigation on a wider scale and by the mid-seventies the Scholars considered it as one of the branches of the subject most relevant to current socio-economic and political issues. The increasing interest in electoral geography with a great concern for new methodologies may be seen in the works of Burghardt, Lewis, Reynold and Archer, Cox, Mcphail. Taylor and Johnston have already identified three themes in the study of elections- The Geography of Voting, Geographical influence on voting behaviour and Geographical influence on representation are of interest of geographers. The present work is a case study of 9th parliamentary election of India which falls in the category of Geography of voting by using z-scores, C.V and standard Deviation. The utmost concern of using z-score values is that it eliminates the influence of mean over individual values and paves the way for a better comparison of data depicted in different units of measurements.

1. Introduction
India being the largest democracy of the world is unique in many ways because of geographical and demographic size of India, socio-cultural diversity leads to the germination of multiplicity of political parties with their roots in specific geographical regions leading to dynamic allegiance of the masses to different parties with inconsistent support. The strength of the party in a region is highlighted on the basis of winning a seat in the first past the post system with marginal wins does not necessarily show its real strength or stronghold in that region in terms of popular votes.
2. Objective
The Main objectives of the present study are as follows:
I. To identify the major stronghold areas of national parties.
II. Whether the stronghold areas of national parties are concentrated in specific geographical regions or evenly distributed throughout India.
III. To know the spatial distribution of popular support in terms of Z-scores of the percentages of the total votes polled.

3. Data Base
The present study is based on the secondary sources of data. The electoral data for 1989 parliamentary election has been collected from election Commission of India. The map of the parliamentary constituencies is taken from the office of the Chief Election commissioner, New Delhi.

4. Study Area

5. Methodology
Cartographic and Statistical methods have been used to know the stronghold areas of the party, support consistency and identify whether the support is concentrated in few pockets or spread all over India. Choropleth methods have been widely used among cartographic techniques whereas,
mean, standard deviation (S.D), coefficient of variation (C.V.) and z- scores is used as a statistical techniques. Mean represents the central tendencies on a data set and Standard deviation measures the dispersion of the data about the mean of observation. It is calculated as follows: -

\[ S.D. (\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} \]

Where - S.D. (\sigma) = Standard deviation.

The Coefficient of Variation is used to measure evenness in the spread of party support. The greater the quantity of Coefficient of Variation (C.V), the greater is the variation across the areas as a whole. The Formula for calculating Coefficient of variation is as follows: -

\[ C.V. = \frac{S.D}{\bar{X}} \times 100 \]

Where: - C.V. = Coefficient of Variation
S.D. = Standard Deviation
\bar{X} = Mean

The Z- Scores of percentages has been used to find out the variation in support from Constituency to constituency.

\[ Z-\text{Score} = \frac{(X - \bar{X})}{S.D} \]

Z- Scores are unit free values and mean is always zero and standard deviation is one. Z-score distribution can be grouped on the basis of standard deviation as class interval. This is a case study based on the ninth parliamentary election.

6. Party Performances In Ninth Parliamentary Election

6.1 Indian National Congress
This was the second time after the 1977 defeat, despite the congress winning 39.5 percent of the vote in this general election (1989), it lost heavily in terms of seats. The number of seats it won fell by more than half, from 415 in 1984 to 197 in 1989; it was because of unity of opposition and seat adjustment with the other parties like BJP and the leftists. The average per constituency vote percentage was 40.4 percent, which was slightly higher than the 1977 election. The standard deviation of the party vote’s distribution was 11.2 percent which was more than the previous election of 1984. The coefficient of variation of the congress was 27.7 percent, which was higher than the two preceding elections of 1980 and 1984, which shows the further concentration of party votes. The party polled above average votes in 47.8 percent of the contested constituencies. Out of these constituencies 17.8 percent contested constituencies falls under the very high supporting area, and the remaining 32 percent contested constituencies fall in the high supporting constituencies. The weak or very weak supporting constituency percentage was 50.2 percent which is less than the previous election. Out of this 50 percent, the very weak supporting constituency percentage is
nearly 17 percent and the weak supporting percentage is nearly 33 percent. The frequency percentage vote polled by congress shows a negative skewness, which is beneficial to the party. In this election also, there is a clear demarcation of support between Hindi non-Hindi speaking areas, as it was in the previous two elections of 1977 and 1980 elections. In this election, the performance of the congress party in the Hindi heartland is better than 1977 election but 1980. The high or very high supporting states for the congress party were Jammu & Kashmir, Himachal in the extreme north Arunachal Pradesh, Nagaland, Manipur, Tripura and Meghalaya in the eastern most states; and in the South, Andhra Pradesh, Tamilnadu, Kerala, Maharashtra and also Karnataka states. The very high supporting constituencies’ falls in the Telangana plateaux and the other very high supporting constituencies are along the Coromandal coast in Tamilnadu, another significant pocket of very high support is also in the South Maharashtra.

Figure 2: Frequency Distribution of the %s of Votes Polled by Congress

<table>
<thead>
<tr>
<th>% of Constituencies</th>
<th>0.8</th>
<th>1</th>
<th>5.4</th>
<th>9.6</th>
<th>16.4</th>
<th>16.4</th>
<th>17.6</th>
<th>14.4</th>
<th>11.2</th>
<th>4.6</th>
<th>1.6</th>
<th>0.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Intervals</td>
<td>&lt;-2.5</td>
<td>-2.5-2</td>
<td>-2-1.5</td>
<td>-1-0.5</td>
<td>0</td>
<td>0.5-1</td>
<td>1-1.5</td>
<td>2</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Parameters Of The Distribution Of The Votes Of National Parties

<table>
<thead>
<tr>
<th>Party</th>
<th>Average % of votes Polled per seat</th>
<th>S.D. of vote distribution</th>
<th>CV (%) of vote distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDIAN NATIONAL CONGRESS</td>
<td>40.4</td>
<td>11.2</td>
<td>27.7</td>
</tr>
<tr>
<td>BHARTIYA JANATA PARTY</td>
<td>28.9</td>
<td>21.1</td>
<td>73</td>
</tr>
</tbody>
</table>
The high supporting areas are also spread in four main pockets – one in the north India in which the pocket is comprised of Jammu & Kashmir, Himachal Pradesh, North and West Haryana with its Bhiwani Bagar area and two hilly constituencies of Uttar Pradesh; second pocket is in the Chattisgarh area of Madhya Pradesh and Dandakarnaya area along the border of Orissa and Andhra Pradesh; Third area is not in the shape of node but is in the shape of belt along the western coast; the last pocket is comprises in the Easternmost states. The low and very low supporting area are mostly in the Indo-Gangetic plain, Gujrat, Orissa and Madhya Pradesh very weak supporting areas are in Punjab because of Akali Dal as a regional force. On the other hand in Bihar Jharkhand and Janata Dal gave a tremendous set back. In Uttar Pradesh congress’s uncleared attitude towards Ayodhaya Issue of BJP and Bofors Scandal are the key cause of its rejection in the Hindi-speaking areas

6.2 Bharitya Janata Party

During this election, the BJP has increased its strength from 2 seats to 85 and 7.4 percent votes to 11.4 percent votes. The average percent votes is 28.9 percent, and the standard deviation of the vote distribution is 21.1 percent which is lower than the 1984 election. The coefficient of variation of the vote distribution is 73 percent, which is more than the previous election, which
shows the the more concentrated to a few areas than the previous attempt. The frequency distribution of BJP votes in this election is negatively skewed, which is however not beneficial. The supporting areas percentage of Bhartiya Janta Party in this very election is nearly 52 percent. In this support area, the very high supporting area percent is nearly 24 percent, and the high supporting area is nearly 28 percent. The weak or very weak supporting area percentage is nearly 48 percent. Out of this low supporting area percentage is 24.4, and the very low or weak supporting area is 23.4 percent. The support of the BJP party was also limited to the same areas as it was in the 1984 election such as Gujrat, Rajasthan, Madhya pardesh and Himachal pradesh etc.

The very high supporting area has significantly compare to the preceding election. The very high supporting area is mostly extended to the Central and Western parts of India. In South Maharashtra has few constituencies and one in Manipur state. The very high support in Gujrat is because of Hindu-card of BJP and alliance with VHP, in Maharashtra the alliance or understanding between Shiv-sena and BJP. In Rajasthan, Madhya pradesh and Himachal pradesh there was total seat adjustment between Janata Dal and BJP. The high supporting area of previous election was high than the recent election, but very high supporting area has increased than the previous election. However, the high support to the adjacent constituencies to Himachal Pradesh had eroded and changed into weak and very weak supporting area. The weak and very weak supporting area are mostly spread in the states of Kerala, Orissa and some constituencies of very weak supporting area are spread in Uttar-pradesh, Bihar and one and two constituencies in jammu & Kashmir and Rajasthan, Maharashtra. The worst position of BJP was in the Coromandal coast, South of Mahnadi constituencies in Orissa and hilly constituencies of Western Uttar-pradesh.
Figure 5: Electoral performance of BJP

BAY OF BENGAL

<table>
<thead>
<tr>
<th>INDEX</th>
<th>More Than 1</th>
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</thead>
<tbody>
<tr>
<td>( (X - \bar{X})/\sigma )</td>
<td>0 To 1</td>
</tr>
<tr>
<td>C.V = 73%</td>
<td>0 To - 1</td>
</tr>
</tbody>
</table>

The low supporting area are spread in Maharashtra, Uttar-pradesh, Central and South Constituencies of Bihar. Thus the overall picture shows that the high or very high supporting areas are spread to the Western and Central India and one state in North is Himachal pradesh and weak and very weak supporting areas are in the Indo-Gangetic plains and Western hilly constituencies of.
Uttar-pradesh, Orissa and Tripura in the East and Coromandal area of Kerala in South comes under the weak supporting areas.

7. Conclusion
The deviation in the votes of Bhartiya Janata Party was highest in 1989 parliamentary election, which shows the highest variations in inter-constituency vote distribution and also reveals that in some constituencies party has emerged as winning with overwhelming support, whereas in some other constituencies party could manage only a nominal support. The coefficient of variation was recorded quite high in 1989 election followed by 1984 election, which shows the inverse relationship with the mean vote share. There is a significant fluctuation in the party’s support in the states; BJP emerged as the party of the Hindi-Heartland in 1989. The standard deviation of the Congress party vote’s distribution was 11.2 percent and the coefficient of variation (C.V) of the congress was 27.7 percent, which shows the further concentration of party votes. The analysis reveals that the mass base of the two major national parties has a high degree of fragmentation and their domains are in the form of pockets.

8. References

Books:-

Articles:


