**Introduction**

* **Mr. Narendra Damodardas Modi**

The 15th Prime Minister of the free and Independent India has actualized a history of never before blazon. After being a Chaiwala during his formative years of childhood he has made his struggle evident to emerge as the most supported Prime Minister of India.

A Rashtriya Swayamsevak Sangh (RSS) volunteer to start with, laid his avenues much more disciplined and focused in the path of his life to serve the nation.

Born on 17th September, 1950, the 64 year old Prime Minister since 26th May, 2014 was previously the Chief Minister of Gujarat and has served two terms as CM from 2001 to 2014.

Mr. Narendra Modi led BJP in the [2014 general election](http://en.wikipedia.org/wiki/Indian_general_election,_2014), which resulted in an outright majority for the BJP in the [Lok Sabha](http://en.wikipedia.org/wiki/Lok_Sabha), the last time that any party had secured an outright majority in the Lok Sabha was in 1984. Since then, Modi has also been credited for the BJP's electoral victories in the states of Haryana and Maharashtra in October 2014.

Modi is a [Hindu Nationalist](http://en.wikipedia.org/wiki/Hindu_nationalism) and a member of the [Rashtriya Swayamsevak Sangh](http://en.wikipedia.org/wiki/Rashtriya_Swayamsevak_Sangh) (RSS). He is a controversial figure both within India as well as internationally as his administration has been criticized for failing to act to prevent the [2002 Gujarat riots](http://en.wikipedia.org/wiki/2002_Gujarat_riots). Modi has been praised for his economic policies, which are credited with creating an environment for a high rate of economic growth in Gujarat. However, his administration has also been criticized for failing to make a significant positive impact upon the human development of the state.

Even after being blamed for the effect of Gujarat riots of 2002, the CM then offered his resignation but was rejected and later he emerged successful in the 2002 elections by winning the 127 of 182 seats in Gujarat Assemble elections.

Similar was the integument of the 2014 Lok Sabha elections, in which Mr. Modi was the key personage to break the corruption inflicted society due to the malfunctioning of the UPA Government for the past few years.

After more than 100 days of the victorious win of Mr. Modi by achieving 336 out of 543 seats in Lok Sabha elections to majorly form the Government people are well satisfied with the performance and are still awaiting for the ‘ACHE DIN AANE WALE HAIN’ to take over the present scenario.

* **OVERVIEW OF OUR PROJECT**

After a sudden stir in the political scenario following the Lok Sabha elections, it was indeed worth to study the reasons of the masses hugely supporting Mr. Narendra Modi to be the 15th Prime Minister of India with absolute majority in the 2014 Lok Sabha elections.

With the questionnaire aimed at collecting data across different age-groups, occupations, area and gender, it has been instrumental in collecting huge information on their mindsets regarding Mr. Narendra Modi and his influence on the people of India.

With various positive and negative attributes, the project has aimed to establish the most prominent reasons by which Mr. Modi has emerged victorious across the above said categories.

With his personality, efficiency, marketing skills and UPA-2 bad governance and ability to select efficient candidate for polls being the positive attributes. The questionnaire uses the response to judge the most influenced positive attribute. Along with the negative attributes like his performance during Gujarat riots, Sadbhavana fast issue, media encounters, etc. have also been some reasons why people have not voted for him.

Also various questions aimed at studying the expectations from the new elected Prime Minister hoping he won’t remain a hyped figure with no outcome.

Statistical tools used to the best of its ability to find independence among age groups and reasons among many others.

**Objectives**

**To study the prominent reasons for which the city of Mumbai**

1. ***Has voted for Mr. Narendra Modi***
2. ***Has not voted for Mr. Narendra Modi***

**During the recent Lok Sabha elections held in May 2014 across:**

1. ***Age Groups***
2. ***Occupation***
3. ***Area***
4. ***Gender***

**Methodology**

* **Steps Involved In Conducting the Survey:**

1. Defining our Objectives and Scope of the Survey
2. Specifying Information needs
3. Literature Review
4. Identifying Primary Data Sources
5. Designing Questionnaire
6. Pilot Survey
7. Modifying Questionnaire
8. Data Collection
9. Data Coding and Data Entry
10. Data Analysis
11. Preparation of Project Report

**Scope of the Survey:**

In this survey we limit our study only to the residents and inhabitants of the evergreen city Mumbai and of the age-group 18 and above across any occupation and gender.

Explanation of Questionnaire:

* We prepared a questionnaire assuming the period after Lok Sabha election and before the results of the Lok Sabha elections 2014

Data

Non-Voters

Voters

* Age
* Area
* Occupation
* Gender
* Age
* Area
* Occupation
* Gender
* Data Collection:-

We conducted a survey and collected 1000 responses combining both voters and non-voters. After data cleaning, we are left with the following number of responses:-

Voters – 820

Non-voters – 155

Total:- 975.

**Graphical Representation**

* **Based on Voters feedback**
* **Based on Non-Voters feedback**

***Demographic Details***

1. **Age Groups**

|  |  |  |
| --- | --- | --- |
| age group | Voters | Non-Voters |
| 18-35 | 60% | 77% |
| 35-60 | 32% | 18% |
| above 60 | 8% | 5% |

Here we observe that out of the total data collected of voters, 60% are between age group 18-35, 32% are between age group 35-60 & 8% above age 60.While in case of non-voters 77% are between age group 18-35, 18% between age group 35-60 & 5% above age 60. Thus we can conclude that the data we have collected is more of age group 18-35.

**2. Occupation**

|  |  |  |
| --- | --- | --- |
| occupation | Voters | Non-Voters |
| Service | 45% | 42% |
| Business | 13% | 11% |
| Student | 23% | 35% |
| Housewife | 10% | 6% |
| Retired | 7% | 4% |
| Others | 2% | 2% |

Here we observe that out of the total data collected of voters 45% have occupation as service, 13% have occupation as business, 23% are students, 10% are housewives’, 7% consists of retired people & 2% as others. While for non-voters 42% have occupation as service, 11% have occupation as business, 35% are student’s, 6% are housewives’, 4% have occupation as retired & 2% as others. Thus we conclude that data we have collected belongs more to the occupation service & students.

1. **Area**

|  |  |  |
| --- | --- | --- |
| Area | Voters | Non-Voters |
| Western | 46% | 51% |
| Central | 34% | 30% |
| Harbour | 20% | 19% |

Here we observe that out of the total data collected of voters, 46% reside in western side, 34% reside in central side & 20% reside in harbor side. While for non-voters 51% reside in western side, 30% reside in central side & 19% reside in harbor side. Thus we conclude that the data collected is more from the western side.

1. **Gender**

|  |  |  |
| --- | --- | --- |
|  | Voters | Non-voters |
| Male | 58% | 49% |
| Female | 42% | 51% |

Here we observe that out of the total data collected for voters, 58% were male & 42% were female .While for non-voters, 49% were male & 51% were female. Thus we conclude that the % of voting is approximately equal among gender.

***Questions:-***

1. **Did you vote?**

|  |  |
| --- | --- |
| Data Category | % of samples |
| Voters | 84% |
| Non-voters | 16% |

Here we observe that out of the total data collected, 84% are voters & 16% are non-voters. Thus we conclude that the data we collected consists large number of people who have voted.

1. **If yes, whom did you vote?**

|  |  |
| --- | --- |
| opinions | Percentage of Samples |
| Modi | 83% |
| Others | 17% |

Here we observe that out of the total data collected among voters, 83% voted for Modi & 17% voted for others. Thus we conclude that **MODI** **WAVE** has taken over Mumbai city.

1. **If not, given a chance, whom would you vote?**

|  |  |
| --- | --- |
| Opinions | Percentage of Samples |
| Modi | 63% |
| Others | 37% |

Here we observe that out of the total data collected, 63% wish to vote for Modi & 37% wanted to vote for others. Thus we conclude that the non-voters are also in support of **MODI WAVE**.

1. **After being elected as Prime Minister, do you think Mr. Narendra Modi will stick to his promises and work on it?**

|  |  |  |
| --- | --- | --- |
| Answers | Voters | Non Voters |
| Yes | 555 | 92 |
| No | 84 | 14 |
| Don't know | 181 | 49 |

Here we observe that out of the total data collected of voters, 68% feel he will work on his promises, while 10% feel he will not work on his promises & 22% say don’t know. While for non-voters 59% feel he will work on his promises, 9% say he won’t & 32% say don’t know. Thus we conclude that large numbers of people believe that Modi will stick to his promises & work on it.

1. **Was Mr. Narendra Modi’s personality an influential factor on your decision to vote for him?**

|  |  |  |
| --- | --- | --- |
| Answers | Voters | non voters |
| Yes | 514 | 63 |
| No | 147 | 29 |
| Don’t know | 158 | 61 |

Here we observe that out of the total data collected for voters, 63% fell they are influenced by his personality, while 18% aren’t & 19% don’t know. While for non-voters 41% fell they are influenced by his personality, 19% say they aren’t & 40% don’t know. Thus we conclude that Modi’s personality was an influential factor while voting for him.

1. **How do you find Mr. Narendra Modi’s personality?**

* Of all the voters, 820 voters, 681 voted for Modi out of which 425 voters were influenced by his personality.

Here we observe that out of 425 voters who were influenced by his personality,54% felt it excellent,41% felt it good,5% felt it average & 0% felt it bad.

* Out of all 155 non-voters, 99 would vote for Modi out of which 36 non-voters feel his personality is an influential factor

We observe that out of 36 non-voters who were influenced by his personality, 39% felt it excellent 53% felt it good,5% felt it average & 3% felt it bad.

Thus we conclude that large number of people find Mr. Modi’s personality excellent & good.

**7. Which factor do you think will play a major role of Mr. Modi being selected as a Prime Minister of India? (Multiple Answers allowed)**

|  |  |
| --- | --- |
| characteristics | No. of samples |
| Effeciency | 176 |
| Marketing | 145 |
| Personality | 47 |
| UPA-2 bad governance | 59 |
| Selecting efficient candidate for polls | 21 |

Here we observe that out of total data of voters, efficiency & marketing has highest frequency among all with 71%. Thus we conclude that the above 2 factors will play a major role of Mr. Modi being selected as PM of INDIA.

|  |  |
| --- | --- |
| characteristics | No. of samples |
| Efficiency | 170 |
| Marketing | 141 |
| Personality | 39 |
| UPA-2 bad governance | 60 |
| Selecting efficient candidate for polls | 25 |

Here we observe that out of total data collected of non-voters, efficiency & marketing has highest frequency among all with 71%. Thus we conclude that the above 2 factors will play a major role of Mr. Modi being selected as PM of INDIA.

**8. Do you know about RSS (Rashtriya Swayamsevak Sangh)**

|  |  |  |
| --- | --- | --- |
|  | Voters | Non-voters |
| Yes | 569 | 72 |
| No | 251 | 83 |

Here we observe that out of the total data collected, 69% of voters & 47% of non-voters know about RSS while 31% of voters & 54% of non-voters don’t know about RSS.

**9. Do you think, voting for Mr. Modi (an RSS volunteer in the past) would encourage HINDUTVA leading to terrorism?**

Here we observe that out of the total data collected of voters who know about RSS, 33% say it will lead to terrorism, 50% disagree to him leading to terrorism & 17% don’t know. While for non-voters who know about RSS, 31% feel he will lead to terrorism, 54% say no & 15% say don’t know. Thus we can conclude that voting for Modi (an RSS volunteer in past) will not encourage HINDUTVA leading to terrorism.

**10. Are you aware of Mr. Modi’s performance as a Chief Minister in Gujarat?**

|  |  |  |
| --- | --- | --- |
| Answers | Voters | Non-voters |
| Yes | 703 | 131 |
| No | 117 | 24 |

We observe that 86% of the voters and 85% of the non-voters are aware of Mr. Modi’s performance as a CM while the remaining don’t know

**11. If yes rate his performance as a CM?**

We observe that out of the total data collected of voters, 48% felt it to be excellent, 43% felt it to be good, 8% felt it to be average & 1% felt it to be bad. While for non-voters, 41% felt it to be excellent, 44% felt it to be good, 11% felt it to be average & 4% felt it to be bad. Thus we infer that majority of people find his performance as CM as excellent & good.

**12. Do you know about Gujarat Model?**

|  |  |  |
| --- | --- | --- |
| Opinions | Voters | Non-Voters |
| Yes | 529 | 82 |
| No | 291 | 73 |

From the above chart we infer that 65% of voters & 53% of non-voters know about Gujarat Model while 35% of voters & 47% of non-voters don’t know about Gujarat Model.

**13. If yes, what do you know about it?**

* Of the 820 voters & 155 non-voters, 529 & 129 people knew about Gujarat Model respectively.

From the above chart we infer that people, who know about Gujarat Model, voters know the most about education and roads and infrastructure while non-voters to know mostly about the roads and infrastructure and electricity.

**14.** **After being in a position of Chief Minister, why couldn’t he curb 2002 Gujarat riots at the root other than allowing it to prolong. If he failed at such situation in a state, do you think India is in safe hands by electing him as a PM?**

|  |  |  |
| --- | --- | --- |
| options | Voters | Non-voters |
| yes | 413 | 70 |
| no | 129 | 24 |
| don’t know | 278 | 61 |

From the above chart we observe that for voters, 50% say yes, 16% say no & 34% say don’t know. While for non-voters 45% say yes, 15% say no & 40% say don’t know. Thus we can conclude that if a situation like 2002 Gujarat riots takes place in INDIA then INDIA will be in safe hands by electing Mr. Modi as PM.

**15. Has “BAD GOVERNENCE by UPA-2” affected your decision to vote for him?**

* Out of the 820 voters, 681 voted for Mr. Modi and out of 155 non-voters 99 would vote for Mr. Modi given a chance.

|  |  |  |
| --- | --- | --- |
| opinions | Voters | non-voters |
| Yes | 461 | 59 |
| No | 220 | 40 |

From the above chart we can infer that 68% of Modi voters & 60% of non-voters say yes and 32% of Modi voters & 40% of non-voters say no. Thus we can conclude that Bad Governance of UPA-2 has affected the decision of vote of the sample collected.

**16. If yes, select the reason for failure from the options below (Multiple Choices allowed)**

* Out of 461 voters and 59 non-voters being influence by UPA2 bad Governance for their votes

Out of the 461 voters who feel that UPA 2 failure is a reason for voting for Mr. Modi. 256 voters feel the failure is due to inflation while 232 feel that the main reason for UPA 2 failure is scams and corruption after which 134 feel more dependence on international market to be a reason. While in the case of 59 non-voters feeling UPA 2 bad governance to be a reason, scams and corruption and inflation are found to be the main reasons.

**17. Has his alliance with top industrialist in Gujarat led to negligence of poor there?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non voters |
| Yes | 177 | 45 |
| No | 290 | 35 |
| Don't know | 353 | 75 |

From the above chart we conclude that both voters & non-voters have no idea whether Modi’s alliance with top industrialist in Gujarat has lead to negligence of poor there.

**18. Will his “Powerful Image” affect our international relations in a negative aspect ?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non Voters |
| Yes | 190 | 38 |
| No | 411 | 84 |
| Don't know | 219 | 33 |

From the above chart we can conclude that majority of the people think that Modi’s Powerful image won’t affect India’s international relations in a negative way for both voters & non-voters.

**19. Will his close relation with specific people affect smooth governance?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non Voters |
| Yes | 256 | 57 |
| No | 336 | 56 |
| Don't know | 228 | 42 |

Out of the 820 voters we have 41% who don’t feel that his close relations with specific people will affect smooth governance while among non-voters 36% don’t feel it affecting smooth governance while 37% strongly feel that it may affect. Hence we find it to be an approximately same response among voters and non-voters.

**20. Isn’t Mr. Modi’s strong allegations against UPA-2 highly misleading during his campaign?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non voters |
| Yes | 256 | 44 |
| No | 317 | 60 |
| Don't know | 247 | 51 |

Among voters, 30% don’t know if strong allegations against UPA2 were highly misleading while 31% say yes, it was misleading and remaining say no. While in the case of non-voters 33% don’t know if it would affect while 28% people say yes and 33% say no.

**Q21. Being a “Technosavy Politician” till now, in which of the following areas do you think Mr. Modi can use technology in improvement of the country?**

|  |  |  |
| --- | --- | --- |
| Area | Non-voters | Voters |
| Corruption | 111 | 624 |
| Safety for Women | 104 | 549 |
| Infrastructure | 111 | 578 |
| Agriculture | 105 | 521 |
| Intelligence and defense | 98 | 547 |
| Education | 111 | 621 |

From the above chart we observe that corruption, infrastructure and education are the areas in which Mr. Modi can use technology for the improvement of the country according to both voters & non-voters.

**22. Which mode of technology has influenced your vote for Mr. Modi the most?**

|  |  |
| --- | --- |
| Mode of Technology | Non-voters |
| Newspaper and news channel | 52 |
| Advertisements | 26 |
| Social Media | 37 |

|  |  |
| --- | --- |
| Mode of Technology | Voters |
| Newspaper and news channel | 393 |
| Advertisements | 237 |
| Social Media | 255 |

Here we observe that newspaper & news channel is the mode of technology that has influenced the voters and non-voters the most to vote for Mr. Modi.

**23. Do you think, voting Mr. Modi will lead to the “Division of INDIA” into Hindus & Muslims?**

|  |  |  |
| --- | --- | --- |
| options | Voter | Non-voter |
| Yes | 142 | 37 |
| No | 494 | 80 |
| Don't Know | 184 | 38 |

From the above chart we can infer that both voters & non-voters think that voting Mr. Modi will not lead to the “Division of India” into Hindus & Muslims.

**24. Since Mr. Modi has not been transparent enough while interacting with media, Can he yet be considered as a Prime ministerial candidate?**

|  |  |  |
| --- | --- | --- |
| options | Voter | Non-voter |
| Yes | 446 | 73 |
| No | 140 | 34 |
| Don't Know | 234 | 48 |

From the above chart we can infer that both voters & non-voters think that Mr. Modi can be considered as a CLEAN Prime ministerial candidate even after his not so transparent interactions with media.

**25. Mr. Modi refused to put on ‘Muslim Topi’ offered by a Muslim cleric during his ‘Sadbhavana Fast’; can such a person who has no respect for any other religion except Hindu rule our secular country?**

|  |  |  |
| --- | --- | --- |
| options | Voter | Non-voter |
| Yes | 287 | 64 |
| No | 239 | 42 |
| Don't Know | 294 | 49 |

From the above chart we can infer that among the voters 35% of the voters feel that in spite of the Muslim Topi case Mr. Modi can be a secular PM while among non-voters 41% feel the same.

**26. After ruling Gujarat with absolute majority, do you think Mr. Modi can govern in a ‘Gatbandhan situation’ (tie-up) with other political parties?**

|  |  |  |
| --- | --- | --- |
| options | Voter | Non-voter |
| Yes | 344 | 66 |
| No | 235 | 30 |
| Don't Know | 241 | 59 |

From the above chart we can infer that 42% of the voters & 43% of the non-voters think that even after ruling Gujarat with absolute majority, Mr. Modi can govern in a Gatbandhan situation (tie-up) with other political parties.

**27. Isn’t Mr. Modi covering up his past by overemphasizing the development of Gujarat?**

|  |  |  |
| --- | --- | --- |
| options | Voter | Non-voter |
| Yes | 296 | 58 |
| No | 303 | 37 |
| Don't Know | 221 | 60 |

Here we observe that out of total data collected of voters 36% agree that he is overemphasizing the development of Gujarat & 37% say no. While for non-voters 37% agree that he is overemphasizing the development of Gujarat & 39% say don’t know. Thus we conclude that there is a mixed opinion about whether Mr. Modi is covering up his past by overemphasizing the development of Gujarat.

**28. Hasn’t Mr. Modi been the reason in creating rift by promoting self for Prime Ministerial candidate keeping aside senior leaders of BJP?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non-voters |
| Yes | 287 | 58 |
| No | 318 | 46 |
| Don't Know | 215 | 51 |

From the above chart we can infer that 39% of the voters say no & 33% of the non-voters say don’t know whether Mr. Modi has been the reason in creating rift by promoting self for Prime Ministerial candidate keeping aside senior leaders of BJP.

**29. Has his struggle from a ‘Chaiwala to P.M.’, helped him be a Prime Minister according to you?**

|  |  |
| --- | --- |
| Options | Voters |
| Yes | 491 |
| No | 208 |
| Don't Know | 121 |

|  |  |
| --- | --- |
| Options | Non-voters |
| Yes | 81 |
| No | 50 |
| Don't Know | 24 |

From the above chart we can conclude that 60% of voters & 52% of non-voters think that Mr. Modi’s struggle from a ‘Chaiwala to P.M.’ has helped him to be the Prime Minister of India.

**30. After 100 days of Modi Government, do you still think he has been a right choice for the Prime Minister of India?**

|  |  |  |
| --- | --- | --- |
| Options | Voters | Non-voters |
| Yes | 584 | 99 |
| No | 89 | 23 |
| Don't Know | 147 | 32 |

From the above chart we can infer that 71% of the voters & 64% of the non-voters think that they have made a right choice for the Prime Minister of India after 100 days of Modi Government.

**CHI-SQUARE ANALYSIS AND MEASURE OF ASSOCIATION**

Chi-Square Test of Independence is used on discrete data that can be nominal or ordinal. It can be used to test the null hypothesis that the two categorical variables under consideration are independent of each other. The procedure involves comparing the observed cells frequencies with expected cell-frequencies. Expected frequencies are no. of cases that should fall in each cell if there is no relationship between the 2 categorical variables.

**Test statistic:**

**Χ2cal = Σ ((Oi – Ei)2 / Ei )**

Where Oi: - observed frequency

Ei :- (row total\*column total)/ N

N: - total number of observations

**Decision Criteria:**

Reject H0 if p-value < 0.05

If the tabulated chi- square value is less than the calculated chi-square value, then the null hypothesis is rejected and we conclude that the two variables under consideration are dependent.

* **In our survey, we wish to test independence between the following pairs of variables:**

1. Age of voters and their vote
2. Age of non-voters and their vote
3. Occupation of voters and their vote
4. Occupation of non-voters and their vote
5. Area of voters and their vote
6. Area of non-voters and their vote
7. Gender of voters and their vote
8. Gender of non-voters and their vote
9. Knowledge about RSS among voters and their vote
10. Knowledge about RSS among non-voters and their vote

**COHEN’S KAPPA:**

Cohen's kappa coefficient is a statistical measure of inter-rater agreement for qualitative (categorical) items. It is generally thought to be a more robust measure than simple percent agreement calculation since κ takes into account the agreement occurring by chance.

Cohen's kappa measures the agreement between two raters who each classify *N* items into *C* mutually exclusive categories. The first evidence of Cohen's Kappa in print can be attributed to Galton (1892).

The equation for κ is:

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Where

Pr(*a*) is the relative observed agreement among raters.

Pr(*e*) is the hypothetical probability of chance agreement .

κ = 1; If the raters are in complete agreement.

κ ≤ 0 ; If there is no agreement among the raters (other than what would be expected by chance).

If κ lies between 0 & 1 then the amount of agreement between the two raters can be interpreted by the resulting value of the kappa co-efficient.

**Cramer’s V****:**

Cramer's V is a way of calculating correlation in tables which have more than 2x2 (i.e. m x n) rows and columns. It is used as post-test to determine strengths of association after chi-square has determined significance.

V is calculated by first calculating chi-square, then using the following calculation:

V = SQRT (χ2 / (n (k - 1)))

where χ 2 is chi-square and k is the number of rows or columns in the table.

Chi-square says that there is a significant relationship between variables, but it does not say just how significant and important this is. Cramer's V is a post-test to give this additional information.

Cramer's V varies between 0 and 1. Close to 0 it shows little association between variables. Close to 1, it indicates a strong association. Cramer's V is named after the Swedish mathematician and statistician Harald Cramér.

## SIGNIFICANCE:

Landis and Koch gave the following table for interpreting K and V values. This table is however by no means universally accepted; Landis and Koch supplied no evidence to support it, basing it instead on personal opinion.

|  |  |
| --- | --- |
| Κ or V | Interpretation |
| < 0 | Less than chance agreement |
| 0.0 — 0.20 | Slight agreement |
| 0.21 — 0.40 | Fair agreement |
| 0.41 — 0.60 | Moderate agreement |
| 0.61 — 0.80 | Substantial agreement |
| 0.81 — 1.00 | Almost perfect agreement |

1. **Age of voters and their vote:**

Coding: X: age

X=0 if age group is 18-35

X=1 if age group is 35-60

X=2 if age group is 60 onwards

Y=0 if voted for modi

Y=1 if voted for others

To test:

H0 : There is no dependence between age of voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | X | | | Total |
| 0 | 1 | 2 |  |
| Y | 0 | 93 | 32 | 14 | 139 |
| 1 | 395 | 227 | 59 | 681 |
| Total |  | 488 | 259 | 73 | 820 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Chi-square | 2 | 5.681 | 0.0584 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that voting for Mr. Modi or others is irrelevant of their age-groups.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Likelihood Ratio Chi-sq | 2 | 5.952 | 0.051 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between age of voters and their vote of their age group.

|  |  |
| --- | --- |
| Cramer's V | 0.069281 |
| Kappa | 0.042479 |

Since V and K lies between 0.0 and 0.20 we can conclude that there is a slight agreement between age of the voters and their vote.

1. **Occupation of voters and their vote:**

Coding: X: occupation of the voters

X=0 if occupation is Service

X=1 if occupation is Business

X=2 if occupation is Student

X=3 if occupation is Housewife

X=4 if occupation is Retired

X=5 if occupation is others

Y=0 if voted for Modi

Y=1 if voted for others

To test:

H0: There is no dependence between occupation of voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | X | | | | | | Total |
| 0 | 1 | 2 | 3 | 4 | 5 |  |
| Y | 0 | 50 | 14 | 49 | 12 | 9 | 5 | 139 |
|  | 1 | 316 | 90 | 143 | 67 | 49 | 16 | 681 |
| Total |  | 366 | 104 | 192 | 79 | 58 | 21 | 820 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 5 | 14.69 | 0.012 |

Since the p-value is not greater than 0.05 hence reject H0  and conclude that there is dependence between occupation of voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi square | 5 | 13.785 | 0.017 |

Since the p-value is not greater than 0.05 hence we reject H0 and conclude that there is dependence between occupation of voters and their vote.

|  |  |
| --- | --- |
| Cramer's V | 0.017915 |
| Kappa | -0.01253 |

Since V is between 0.0 and 0.20 we can conclude that there is slight agreement and since K<0 we can conclude that there is no agreement about Occupation of voters and their vote.

1. **Area of voters and their vote:**

Coding: X: Area of the voters

X=0 if Ares is Western

X=1 if Area is Central

X=2 if Area is Harbour

Y=0 if voted for modi

Y=1 if voted for others

To test:

H0 : There is no dependence between Area of voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | X | | | Total |
| 0 | 1 | 2 |  |
| Y | 0 | 47 | 49 | 43 | 139 |
| 1 | 332 | 226 | 123 | 681 |
| Total |  | 379 | 275 | 166 | 820 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Chi-square | 2 | 15.171 | 0.001 |

Since the p-value is not greater than 0.05 hence reject H0 and conclude that there is dependence between Area of voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Likelihood ration chi-square | 2 | 14.591 | 0.001 |

Since the p-value is not greater than 0.05 hence we reject H0 and conclude that there is dependence between Area and their vote.

|  |  |
| --- | --- |
| Cramer's V | 0.018501 |
| Kappa | -0.03722 |

Since V is between 0.0 and 0.20 we can conclude that there is slight agreement and since K<0 we can conclude that there is no agreement about Occupation of voters and their vote.

1. **Gender of voters and their vote:**

Coding: X: Gender of the voters

X=0 if Gender is Male

X=1 if Gender is Female

Y=0 if voted for modi

Y=1 if voted for others

To test:

H0 : There is no dependence between Gender of voters and their vote

H1: Not Ho.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | X | | Total |
| 0 | 1 |  |
| Y | 0 | 81 | 58 | 139 |
| 1 | 393 | 288 | 681 |
| Total |  | 474 | 346 | 820 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 1 | 0.015 | 0.902 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between Gender of voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi-square | 1 | 0.015 | 0.902 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between Gender and their vote.

|  |  |
| --- | --- |
| Kappa | 0.0028796 |

Since K lies between 0.0 and 0.20 we can conclude that there is a slight agreement between age of the voters and their vote.

|  |  |
| --- | --- |
| Statistics | P-value |
| Fisher's exact test | 0.925169 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between Gender and their vote.

1. **Age of non-voters and their vote:**

Coding: X: age

X=0 if age group is 18-35

X=1 if age group is 35-60

X=2 if age group is 60 onwards

Y=0 if voted for modi

Y=1 if voted for others

To test:

H0 : There is no dependence between age of non-voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | X | | | Total |
| 0 | 1 | 2 |  |
| Y | 0 | 42 | 10 | 4 | 56 |
| 1 | 78 | 19 | 2 | 99 |
| Total |  | 120 | 29 | 6 | 155 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Chi-square | 2 | 2.525 | 0.283 |

Since the p-value is greater than 0.05 hence we do not reject H0  and conclude that there is no dependence between age of non-voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Likelihood Ratio Chi-sq | 2 | 2.401 | 0.301 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between age of non-voters and their vote.

|  |  |
| --- | --- |
| Cramer's V | 0.016291 |
| Kappa | -0.00942 |

Since V lies between 0.0 and 0.20 we can conclude that there is a slight agreement between age of the non-voters and their vote. While K<0 which shows no agreement to dependency.

1. **Occupation of non-voters and their vote:**

Coding: X: occupation of the non-voters

X=0 if occupation is Service

X=1 if occupation is Business

X=2 if occupation is Student

X=3 if occupation is Housewife

X=4 if occupation is Retired

X=5 if occupation is others

Y=0 if voted for modi

Y=1 if voted for others

To test:

H0 : There is no dependence between occupation of non-voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | X | | | | | | Total |
| 0 | 1 | 2 | 3 | 4 | 5 |  |
| Y | 0 | 22 | 7 | 20 | 3 | 4 | 0 | 56 |
|  | 1 | 42 | 10 | 35 | 7 | 2 | 3 | 99 |
| Total |  | 64 | 17 | 55 | 10 | 6 | 3 | 155 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 5 | 4.559 | 0.472 |

Since the p-value is greater than 0.05 hence do not reject H0 and conclude that there is no dependence between occupation of non-voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi square | 5 | 5.428 | 0.366 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between occupation of non-voters and their vote.

|  |  |
| --- | --- |
| Cramer's V | 0.029412 |
| Kappa | -0.01637 |

Since V is between 0.0 and 0.20 we can conclude that there is slight agreement and since K<0 we can conclude that there is no agreement between Occupation of non-voters and their vote.

1. **Area of non-voters and their vote:**

Coding: X: Area of the non-voters

X=0 if Ares is Western

X=1 if Area is Central

X=2 if Area is Harbour

Y=0 if voted for Modi

Y=1 if voted for others

To test:

H0 : There is no dependence between Area of non-voters and their vote

H1: Not Ho.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | X | | | Total |
| 0 | 1 | 2 |  |
| Y | 0 | 34 | 14 | 8 | 56 |
| 1 | 45 | 32 | 22 | 99 |
| Total |  | 79 | 46 | 30 | 155 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Chi-square | 2 | 30445 | 0.179 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between Area of non-voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Df | Value | p-value |
| Likelihood Ratio Chi-sq | 2 | 3.479 | 0.176 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between Area of non-voters and their vote.

|  |  |
| --- | --- |
| Cramer's V | 0.022223 |
| Kappa | 0.083206 |

Since V and K is between 0.0 and 0.20 we can conclude that there is slight agreement between area of non-voters and their vote.

1. **Gender of non-voters and their vote:**

Coding: X: Gender of the non-voters

X=0 if Gender is Male

X=1 if Gender is Female

Y=0 if voted for Modi

Y=1 if voted for others

To test:

H0 : There is no dependence between Gender of non-voters and their vote

H1: Not Ho.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | X | | Total |
| 0 | 1 |  |
| Y | 0 | 28 | 28 | 56 |
| 1 | 48 | 51 | 99 |
| Total |  | 76 | 79 | 155 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 1 | 0.033 | 0.856 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between Gender of non- voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi-square | 1 | 0.033 | 0.856 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between Gender and their vote.

|  |  |
| --- | --- |
| Kappa | 0.014061 |

Since K lies between 0.0 and 0.20 we can conclude that there is a slight agreement between gender of the non-voters and their vote.

|  |  |
| --- | --- |
| Statistics | P-value |
| Fisher's exact test | 0.868786 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between Gender and their vote.

1. **RSS knowledge among voters and their vote:**

Coding: X: RSS knowledge among voters

X=0 if voter knows about RSS

X=1 if voter does not know about RSS

Y=0 if voted for Modi

Y=1 if voted for others

To test:

H0 : There is no dependence between RSS knowledge among voters and their vote.

H1: Not Ho.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | X | | Total |
| 0 | 1 |  |
| Y | 0 | 89 | 50 | 139 |
| 1 | 480 | 201 | 681 |
| Total |  | 536 | 251 | 820 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 1 | 2.265 | 0.132 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between RSS knowledge of voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi-square | 1 | 2.213 | 0.137 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between RSS knowledge of voters and their vote.

|  |  |
| --- | --- |
| Kappa | -0.02894 |

Since K<0 we can conclude that there is no agreement between RSS knowledge of voters and their vote.

|  |  |
| --- | --- |
| Statistics | P-value |
| Fisher's exact test | 0.157136 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between RSS knowledge and their vote.

1. **RSS knowledge among non-voters and their vote:**

Coding: X: RSS knowledge among non-voters

X=0 if non-voter knows about RSS

X=1 if non-voter does not know about RSS

Y=0 if voted for Modi

Y=1 if voted for others

To test:

H0: There is no dependence between RSS knowledge among non-voters and their vote.

H1: Not Ho.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | X | | Total |
| 0 | 1 |  |
| Y | 0 | 23 | 33 | 56 |
| 1 | 49 | 50 | 99 |
| Total |  | 72 | 83 | 155 |

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Chi-square | 1 | 1.020 | 0.312 |

Since the p-value is greater than 0.05 hence we do not reject H0 and conclude that there is no dependence between RSS knowledge of non-voters and their vote.

|  |  |  |  |
| --- | --- | --- | --- |
| Statistics | Df | Value | P-value |
| Likelihood ratio chi-square | 1 | 1.024 | 0.312 |

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between RSS knowledge of non- voters and their vote.

|  |  |
| --- | --- |
| Kappa | -0.0793139 |

|  |  |
| --- | --- |
| Statistics | P-value |
| Fisher's exact test | 0.321122 |

Since K<0 we can conclude that there is no agreement between RSS knowledge of non-voters and their vote.

Since the p-value is greater than 0.05 hence we reject H0 and conclude that there is no dependence between RSS knowledge and their vote.

**Pareto Analysis**

Pareto Analysis is a statistical technique in decision making that is used for the selection of a limited number of tasks that produce significant overall effect. It uses the Pareto Principle. It is also known as the 80/20 rule. The idea is that by doing 20% of the work you can generate 80% of the benefit of doing the whole job. This is also known as the ‘vital few’ and the ‘trivial many’ effect.

The Pareto Principle has many applications in quality control. It is the basis for the Pareto diagram, one of the key tools used in total quality control and Six Sigma.

A Pareto chart is used to graphically summarize and display the relative importance of the differences between groups of data. The Pareto Chart is a very simple but effective tool for prioritizing problem causes, which is why it is widely used for problem-solving in the manufacturing industry. The Pareto Chart is basically a descending bar graph that shows the frequencies of occurrences or relative sizes of the various problems or causes of a particular problem. The problem categories or causes are shown on the x-axis of the bar graph. Aside from its main bar graph, the Pareto Chart may also include a line graph that indicates the cumulative percentage of occurrences at each bar of the bar graph.  This line graph, referred to as the 'cumulative percentage line', is used to determine which of the bars belong to the 'vital few' and which ones are relegated to the 'trivial many.'

1. **Positive reasons for Modi voters among voters**



**Conclusion**: From Pareto Analysis, we can come to a conclusion that among the 820 voters we have 681 who voted for Mr. Modi and their opinions about the major factors contributing to influencing their vote can be Struggle from Chaiwala to PM then his efficiency skills, Marketing skills and performance as a CM.

1. **Positive reasons for Modi voters among non-voters**



**Conclusion**: From Pareto Analysis, we can come to a conclusion that among the 155 non-voters we have 99 who voted for Mr. Modi and their opinions about the major factors contributing to influencing their vote can be Struggle from Chaiwala to PM then his efficiency skills, Marketing skills, performance as a CM.

1. **Negative reasons for not voting Modi among voters**



**Conclusion**: From Pareto Analysis, we can come to a conclusion that among the 820 voters we have 139 who didn’t vote for Mr. Modi and their opinions about the major factors contributing to influencing their vote can be his overemphasis about Gujarat, Keeping aside senior leaders of BJP for PM candidature, misleading UPA allegations, his tendency to be with specific people close, media transparency issues, Muslim topi case, working in a Gatbandan situation and his performance during Gujarat riots in 2002.

1. **Negative reasons for not voting Modi among non-voters**



**Conclusion**: From Pareto Analysis, we can come to a conclusion that among the 155 non-voters we have 56 who wish not to vote Mr. Modi and their opinions about the major factors contributing to influencing their vote can be overemphasis of Gujarat, close relations with specific people, keeping aside senior leaders for PM candidate, no transparency with media, negligence of poor in Gujarat, strong allegations about UPA-2, dictator image, Division of INDIA.

1. **Mode of technology influencing vote for Modi among voters**



**Conclusion**: From the above Pareto chart we can conclude that Newspaper and Newschannel and Social Media like Facebook, twitter to be the most influential mode of Technology to influence the Modi voters.

1. **Mode of technology influencing vote for Modi among non-voters**



**Conclusion**: From the above Pareto chart we can conclude that Newspaper and News channel and Social Media like Facebook, twitter to be the most influential mode of Technology to influence the Modi voters.

1. **Areas where technology can be used by Modi according to voters**.



**Conclusion**: From the above Pareto chart we can conclude that the collected sample of voters feel that Mr. Modi will use technology in the areas of Corruption, Education, Infrastructure and Safety for Women.

1. **Areas where technology can be used by Modi according to non-voters**.



**Conclusion**: From the above Pareto chart we can conclude that the collected sample of voters feel that Mr. Modi will use technology in the areas of Corruption, Education, Infrastructure and Agriculture.

**CHAID Tree Diagram**

CHI-SQUARED AUTOMATIC INTERACTION DETECTION (CHAID) at each step, CHAID chooses the independent (predictor) variable that has the strongest interaction with the dependent variable. Categories of each predictor are merged if they are not significantly different with respect to the dependent variable

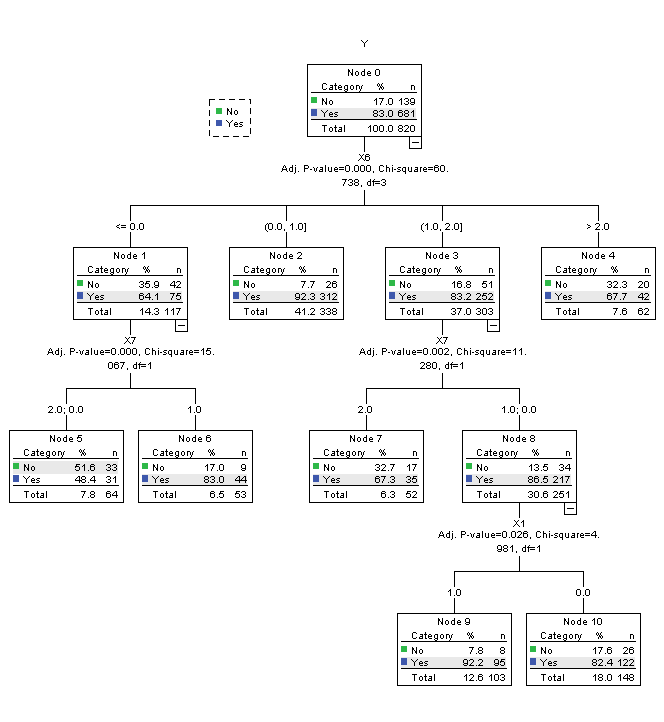
We have found out CHAID Tree for:

1. Positive Factors leading to vote for Modi among Voters
2. Negative Factors leading to vote for others than Modi among Voters
3. Positive Factors leading to vote for Modi among Non-Voters
4. Negative Factors leading to vote for others than Modi among Non-Voters

**Positive Factors leading to vote for Modi among Voters**

|  |  |
| --- | --- |
| **Risk** | |
| Estimate | Std. Error |
| .167 | .013 |
| Growing Method: CHAID  Dependent Variable: Y | |

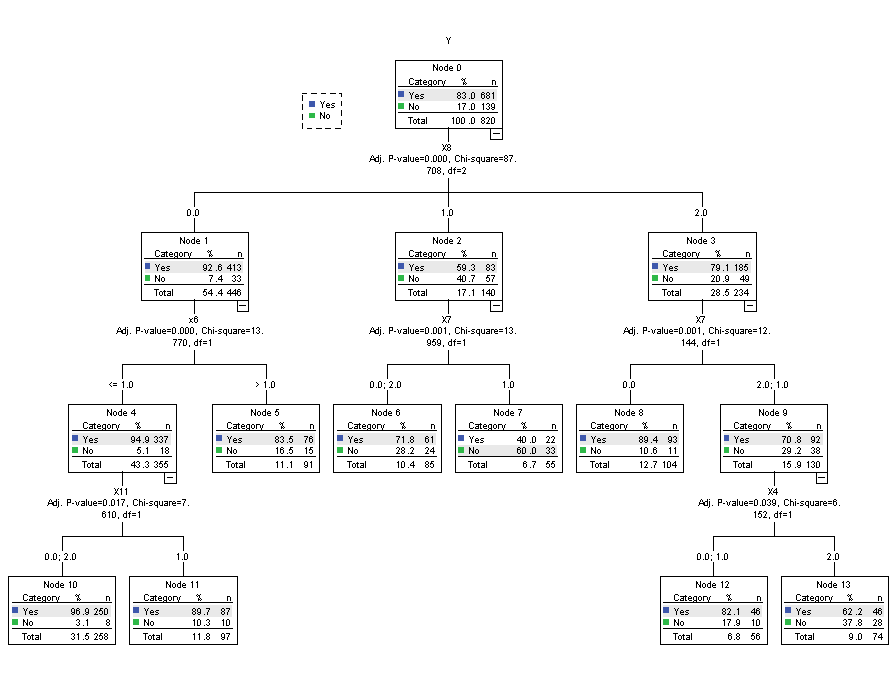
|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | | | |
| Observed | Predicted | | |
| no | yes | Percent Correct |
| no | 33 | 106 | 23.7% |
| yes | 31 | 650 | 95.4% |
| Overall Percentage | 7.8% | 92.2% | 83.3% |
| Growing Method: CHAID  Dependent Variable: Y | |  |  |

**Interpretation:** From the above CHAID chart, we conclude that 46% of the people who voted for Mr. Modi was solely on the basis of his excellent performance in Gujarat as CM. Out of those who voted for Mr. Modi, 37% think that his performance was good as a CM of Gujarat and it is dependent on the struggle that he put from Chaiwala to PM. Also, 11% of the voters who voted for Mr. Modi do not have any idea regarding his work in Gujarat and hence they ended up voting for him considering his struggle from Chaiwala to PM. Out of 37% who think Mr. Modi’s performance as CM of Gujarat was good, 86% consider his struggle as Chaiwala to PM. Furthermore, out of these 86%, 56% consider his Efficiency as a factor in voting him as PM. Hence as a summery, out of those who elected Mr. Modi, one who feels his good performance as CM is also dependent on the struggle from Chaiwala to PM and his Efficiency.

**Negative Factors leading to vote for others than Modi among Voters**

|  |  |
| --- | --- |
| **Risk** | |
| Estimate | Std. Error |
| .156 | .013 |
| Growing Method: CHAID  Dependent Variable: Y | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | | | |
| Observed | Predicted | | |
| Yes | No | Percent Correct |
| Yes | 659 | 22 | 96.8% |
| No | 106 | 33 | 23.7% |
| Overall Percentage | 93.3% | 6.7% | 84.4% |
| Growing Method: CHAID  Dependent Variable: Y | | | |



**Interpretation**: From the above CHAID chart, out of the voters who have not voted for Mr. Modi, 23% think that he is considered as the clean PM candidate. Out of these 23%, 54% think that his strong allegations against UPA-2 bad governance were misleading during the election campaign. Out of these 54%, 55% consider that he was covering up his past by overemphasizing the development of Gujarat. In short, the 23% voters who think that Mr. Modi was a clean candidate as PM did not vote Mr. Modi was mainly due to misleading allegations during election campaign and due to covering up his past by overemphasizing development of Gujarat.

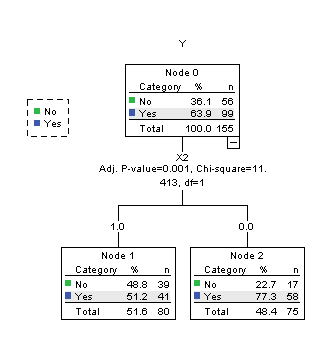
Similarly, 41% of the voters who have not voted for Mr. Modi do not consider that he is the clean PM candidate. Out of these 41%, 42% think that if Mr. Modi becomes PM then there will be division of India into Hindus and Muslims. In short, voters did not vote Mr. Modi was due to the reason that they do not think Mr. Modi as a clean PM and after being PM the nation will get divided into Hindus and Muslims.

Also, 36% of the voters who have not voted for Mr. Modi have a unbiased feeling regarding the Clean image as PM. Out of these 36%, 23% think that there will be division of India into Hindus and Muslims. Out of the remaining 77%, 27% think that the reason behind not voting Mr. Modi as PM was his powerful image. Hence as summery, we conclude that those having an unbiased nature regarding clean image as PM, they did not vote Mr. Modi mainly considering that it might result a division of the nation and also because of his powerful image may spoil international relations.

**Positive Factors leading to vote for Modi among Non-Voters**

|  |  |
| --- | --- |
| **Risk** | |
| Estimate | Std. Error |
| .361 | .039 |
| Growing Method: CHAID  Dependent Variable: Y | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | | | |
| Observed | Predicted | | |
| No | Yes | Percent Correct |
| No | 0 | 56 | 0.0% |
| Yes | 0 | 99 | 100.0% |
| Overall Percentage | 0.0% | 100.0% | 63.9% |
| Growing Method: CHAID  Dependent Variable: Y | | | |

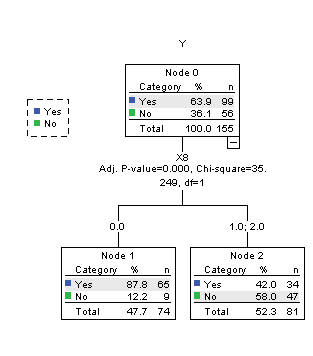


**Interpretation**: From the above CHAID chart, out of the non-voters if given a chance to vote, 41% will vote Mr. Modi on the basis of the Marketing done by Mr. Modi and BJP prior to the elections.

**Negative Factors leading to vote for others than Modi among Non-Voters**

|  |  |
| --- | --- |
| **Risk** | |
| Estimate | Std. Error |
| .277 | .036 |
| Growing Method: CHAID  Dependent Variable: Y | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | | | |
| Observed | Predicted | | |
| Yes | No | Percent Correct |
| Yes | 65 | 34 | 65.7% |
| No | 9 | 47 | 83.9% |
| Overall Percentage | 47.7% | 52.3% | 72.3% |
| Growing Method: CHAID  Dependent Variable: Y | | | |



**Interpretation**: From the above CHAID chart, out of the non-voters if given a chance to vote, 84% will not vote to Mr. Modi because they think that his image is not clean to become a PM or their not able to judge.

**Logistic Regression**

Logistic regression is used when the dependent variable in question is nominal and has two categories. The independent variables may be continuous or nominal

The goal of logistic regression is to find the best fitting (yet practically reasonable) model to describe the relationship between the dichotomous characteristic of interest (dependent variable = response variable) and a set of independent (predictor or explanatory) variables. Logistic regression generates the coefficients (and its standard errors and significance levels) of a formula to predict a logit transformation of the probability of presence of the characteristic of interest.

Our dependent variable is discrete and takes only two values 0 and 1 and hence conditional mean of y given x lies between 0 and 1 and not between -∞ to ∞. Hence in this case we use Logistic Regression.

Also some of our independent variables are continuous while others are dichotomous nominal variables.

We now illustrate further our application of logistic regression in our survey.

***Positive factors***

**Section 1: Voters**

Our dependent variable is:

Y: 1 if voted for Modi

Y: 0 if voted for others

Independent Variable is:

X1: Efficiency

X2: Marketing

X3: Personality

X4: UPA2 Bad Governance

X5: Selecting efficient candidate for polls

X6: Performance as a CM

X7: Struggle from Chaiwala to PM

**Stepwise Procedure:**

Stepwise method is a process of building a model by successively adding or removing variables.

Any stepwise procedure for selection or deletion of variables from a model is based on statistical algorithm which checks for the importance of variables, and either includes or excludes them on the basis of a fixed decision rule. The importance of the variable is defined in terms of a measure of the statistical significance of the coefficient for the variable. The significance is assessed via likelihood ratio chi square test. Thus, at any step in the procedure the most important variable, in statistical terms, will be the one that produces the greatest change in the log-likelihood relative to a model not containing the variable (i.e., the one that would result in the largest likelihood ratio statistic).

For the stepwise selection procedure, we kept sls and sle criteria at 5%.

We have tried to find out the most prominent reasons for voting Mr. Modi across Age, Occupation, Area and Gender and also the most prominent reasons for people to not vote for Mr. Modi across Age, Occupation, Area and Gender.

1. **Age:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Summary of Stepwise Selection | | | | | | | | |
| Step | Effect | | DF | Number IN | Score Chi-square | Wald | Pr> chi-sq | Var label |
| Entered | Removed | Chi-sq |  |
| 1 | X1 |  | 1 | 1 | 19.6629 |  | <.0001 | Efficiency |
| 2 | X3 |  | 1 | 1 | 8.3517 |  | 0.0039 | Personality |

1. **18-35 group**

From the above table we observe that, Efficiency and Personality of Mr. Modi have been the main reason for voting in the age group 18-35.

**Global Testing:**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

Test Statistic = (L1-L2) ~ χ2

L1= -2 log L for model without the independent variables

L2= -2 log L for model with all the independent variables

Where, L is the Likelihood Function.

Test Criterion:

Reject Ho if p-value < 0.05

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 29.2283 | 2 | <.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

The parameter (logit) estimates are nothing but the m.l.e. estimates obtained by partial differentiation of the likelihood function with respect to each of the unknown parameters and equating the resultant equations to zero. Iterative methods are used for computing the estimates. The standard interpretation of the logit function for the categorical variable is that for a unit change in the predictor variable, the logit of the outcome relative to the reference group is expected to change by its respective parameter estimate (which is in log-odds units) given the other variables in the model are held constant. Also for the unit change in the continuous independent variable, the logit will change by its respective parameter estimate (which is in log-odds units) given the other variables in the model are held constant.

Intercept - This is the logit estimate when the predictor variables in the model are evaluated at zero.

To test the hypothesis,

Ho: individual coefficients of independent variables are zero.  
H1: Not Ho

To test the above hypotheses, Wald’s statistic is used. It is defined as the ratio of estimated coefficient to its estimated standard error.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.7924 | 0.1579 | 25.3154 | <0.0001 |
| X1 | 1 | 1.0724 | 0.2566 | 17.4689 | <.0001 |
| X3 | 1 | 0.7878 | 0.2771 | 8.0846 | 0.0045 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 1.2142 | 2 | 0.5445 |

Here we observe that p-value=0.5445>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.7924+1.0724X1+0.7878X3

X1:- Efficiency

X3:- Personality

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

Odds ratio is a measure of association between the outcome variable and the independent variable.

In general, for logistic regression model, the odds ratio for X = a versus

X = b is given as follows:

Ψ(a,b) = P(Y=1**/**X=a) / P(Y=0**/**X=a)

P(Y=1**/**X=b) / P(Y=0**/**X=b)

The odds ratio approximates how much more likely it is for the outcome to be present among those with X = a, than among those with X = b.

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 2.922 | 1.767 | 4.832 |
| **X3** | 2.198 | 1.277 | 3.784 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR):**

1. OR for the efficiency variable is 2.922, this implies that the people who feel that Modi’s really efficient are 2.922 times more likely to vote for him over voting others.
2. OR for the Personality variable is 2.198, this implies that people voting who feel Modi’s personality as best is 2.198 times more likely to vote for him over voting others.

**Classification Table:**

The classification table is a cross-tabulation of the frequencies of observed against the predicted category for the dependent variable (Y).This table gives the predictive ability of the fitted model.

The final fitted model is used to get the predicted values for the dependent variable (Y).

g(x)= 0.7924+1.0724X1+0.7878X3

Using the above given logit function , the conditional probability is given as follows:

p = P(Y=1/X) = Exp {g(x)} **/** [1+Exp{g(x)}]

If p > 0.7, then we take predicted value for Y as 1 i.e. Y=1

Else predicted value for Y is 0 i.e. Y=0.

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 94 | 94 |
| 1 | 0 | 395 | 395 |
| Total | 0 | 489 | 489 |

Here we observe that our predictions are correct in 395 cases out of 489 ie. In 80.8% of the cases our predicted value matches with the observed value.

1. **35-60 group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X3** |  | 1 | 1 | 6.8366 |  | 0.0089 | Personality |
| **2** | **X2** |  | 1 | 2 | 8.5609 |  | 0.0034 | Marketing |

From the above table we can conclude that among the age-group of 35-60 the Modi voters believe to have voted due to his Personality factor and marketing and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 16.2859 | 2 | 0.0003 |

Here we observe that p-value is 0.0003 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 2.1837 | 0.3081 | 50.2449 | <0.0001 |
| X2 | 1 | -1.1304 | 0.3989 | 8.0310 | 0.0046 |
| X3 | 1 | 1.5104 | 0.5606 | 7.2598 | 0.0071 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0069 | 2 | 0.9965 |

Here we observe that p-value=0.9965>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 2.1837-1.1304X2+1.5104X3

X2:-Marketing X3:- Personality

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 0.323 | 0.148 | 0.706 |
| **X3** | 4.528 | 1.509 | 13.586 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Marketing variable is 0.323, this implies that the people who feel that Modi’s marketing skills are good are 0.323 times more likely to vote for him over voting others.
2. OR for Personality variable is 4.528, this implies that the people who were influenced by Modi’s marketing skills are 4.528 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 32 | 32 |
| 1 | 0 | 227 | 227 |
| Total | 0 | 259 | 259 |

Here we observe that our predictions are correct in 227 cases out of 259 ie. In 87.6% of the cases our predicted value matches with the observed value.

1. **60 onwards group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 9.2424 |  | 0.0024 | Efficiency |

From the above table we can conclude that among the age-group of 60 onwards the Modi voters believe to have voted due to his efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 9.4251 | 1 | 0.0021 |

Here we observe that p-value <0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.5978 | 0.3754 | 2.5365 | 0.1112 |
| X1 | 1 | -1.1304 | 0.3989 | 8.0310 | 0.0054 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.5978-1.1304X1

X1:- Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 7.150 | 1.788 | 28.584 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the efficiency variable is 7.150, this implies that the people who feel that Modi’s really efficient are 7.150 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 14 | 14 |
| 1 | 0 | 59 | 59 |
| Total | 0 | 73 | 73 |

Here we observe that our predictions are correct in 59 cases out of 73 ie. In 80.8% of the cases our predicted value matches with the observed value.

1. **Occupation**
2. **Service group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X2** |  | 1 | 1 | 18.8289 |  | <.0001 | Marketing |
| **2** | **X3** |  | 1 | 2 | 11.3281 |  | 0.0008 | Personality |
| **3** | **X5** |  | 1 | 3 | 4.8428 |  | 0.0278 | Selecting Efficient candidate for polls |

From the above table we can conclude that among the Service group the Modi voters believe to have voted due to his Marketing factor, Personality and selecting efficient candidate for polls and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 36.1629 | 3 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 2.5183 | 0.3076 | 67.0056 | <.0001 |
| X2 | 1 | -1.5685 | 0.3542 | 19.6160 | <.0001 |
| X3 | 1 | 1.5732 | 0.4705 | 11.1820 | 0.0008 |
| X5 | 1 | -1.0035 | 0.4710 | 4.5384 | 0.0331 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every co-efficient of variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 1.3813 | 4 | 0.8474 |

Here we observe that p-value=0.8474>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 2.5183-1.5685X2+1.5732X3-1.0035X5

X2:-Marketing X3:-Personality X5:-Selecting efficient candidate for polls

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 0.208 | 0.104 | 0.417 |
| **X3** | 4.822 | 1.918 | 12.126 |
| **X5** | 0.367 | 0.146 | 0.925 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Marketing variable is 0.208, this implies that the people who are influenced by Modi’s Marketing skills are 0.208 times more likely to vote for him over voting others.
2. OR for the Personality variable is 4.822, this implies that the people who were influenced by Modi’s Personality are 4.822 times more likely to vote for him over voting others.
3. OR for the Selecting Efficient candidate for Polls variable is 0.367, this implies that the people who were influenced by Modi’s skill of selecting efficient candidate for polls are 0.367 times more likely to vote for him over voting others

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 3 | 47 | 50 |
| 1 | 2 | 314 | 316 |
| Total | 5 | 361 | 366 |

Here we observe that our predictions are correct in 317 cases out of 366 i.e. in 86.6% of the cases our predicted value matches with the observed value.

1. **Business group: No results**
2. **Student group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 9.8656 |  | 0.0017 | Efficiency |

From the above table we can conclude that among the Student group the Modi voters believe to have voted due to his Efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 10.1480 | 1 | 0.0014 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.6190 | 0.2097 | 8.7180 | 0.0032 |
| X1 | 1 | -1.5685 | 1.0986 | 0.3581 | 0.0022 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.6190-1.5685X1

X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.000 | 1.487 | 6.052 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Efficiency variable is 3, this implies that the people who are influenced by Modi’s Efficiency are 3 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 49 | 49 |
| 1 | 0 | 143 | 143 |
| Total | 0 | 192 | 192 |

Here we observe that our predictions are correct in 143 cases out of 192 i.e. In 74.48% of the cases our predicted value matches with the observed value.

1. **Housewife group: No results**
2. **Retired Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X4** |  | 1 | 1 | 4.2792 |  | 0.0386 | UPA-2 bad governance |

From the above table we can conclude that among the Retired group the Modi voters believe to have voted due to his UPA-2 bad governance and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 4.1119 | 1 | 0.0426 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 2.4277 | 0.6023 | 16.2482 | <0.0001 |
| X4 | 1 | -1.5114 | 0.7721 | 3.8235 | 0.0503 |

Since all the p-values are not less than 0.05 we do not reject the null hypothesis and conclude that every independent variable is individually not significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 2.4277-1.5224X4

X4:-UPA 2 Bad governance

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 0.221 | 0.049 | 1.002 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the UPA 2 bad governance variable is 0.221, this implies that the people who are influenced by UPA 2 bad governance are 0.221 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 9 | 9 |
| 1 | 0 | 49 | 49 |
| Total | 0 | 49 | 58 |

Here we observe that our predictions are correct in 49 cases out of 58 i.e. In 84.48% of the cases our predicted value matches with the observed value.

1. **Others Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X6** |  | 1 | 1 | 4.3174 |  | 0.0377 | Performance as a CM |

From the above table we can conclude that among the others group the Modi voters believe to have voted due to his Performance as a CM and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 4.3818 | 1 | 0.0363 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 4.5318 | 2.1119 | 4.6046 | 0.0319 |
| X6 | 1 | -2.0805 | 1.1296 | 3.1619 | 0.0754 |

Since all the p-values are not less than 0.05 we do not reject the null hypothesis and conclude that every independent variable is individually not significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.3328 | 1 | 0.5640 |

Here we observe that p-value=0.5640>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 4.5318-2.0805X6

X4:-UPA 2 Bad governance

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X6** | 0.134 | 0.015 | 1.228 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Performance as a CM variable is 0.134, this implies that the people who are influenced by Modi’s performance as CM are 0.134 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 1 | 4 | 5 |
| 1 | 0 | 16 | 16 |
| Total | 1 | 20 | 21 |

Here we observe that our predictions are correct in 17 cases out of 21 ie. In 80.095% of the cases our predicted value matches with the observed value.

**C. Area**

**1. Western Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 14.8550 |  | 0.0001 | Efficiency |
| **2** | **X7** |  | 1 | 2 | 8.8613 |  | 0.0029 | Struggle from Chaiwala to PM |

From the above table we can conclude that among the Western area group the Modi voters believe to have voted due to his Efficiency and Struggle from Chaiwala to PM, hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 23.9642 | 2 | <.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 2.2264 | 0.3644 | 37.3391 | <.0001 |
| X6 | 1 | 1.2215 | 0.3417 | 12.7762 | 0.0004 |
| X7 | 1 | -0.7975 | 0.2721 | 8.5930 | 0.0034 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 29.9464 | 4 | <0.0001 |

Here we observe that p-value <0.05 hence we reject H0 and conclude that the model is a NOT good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 2.2264+1.2215x6-0.7975x7

X6:-Performance as a CM X7:-struggle from Chaiwala to PM

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.392 | 1.736 | 6.628 |
| **X7** | 0.45 | 0.264 | 0.768 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for Efficiency variable is 3.392, this implies that the people who are influenced by Modi’s Efficiency are 3.392 times more likely to vote for him over voting others.
2. OR for Struggle from a Chaiwala to a PM variable is 0.45, this implies that the people who are influenced by Modi’s Struggle from Chaiwala to PM are 0.45 times more likely to vote for him over voting others

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 48 | 48 |
| 1 | 0 | 332 | 332 |
| Total | 0 | 380 | 380 |

Here we observe that our predictions are correct in 332 cases out of 380 ie. In 87.37% of the cases our predicted value matches with the observed value.

1. **Central Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 10.5697 |  | 0.0011 | Efficiency |

From the above table we can conclude that among the Central area group the Modi voters believe to have voted due to his efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 11.0999 | 1 | 0.0009 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 1.1165 | 0.1894 | 34.7442 | <.0001 |
| X1 | 1 | 1.1260 | 0.3579 | 9.9005 | 0.0017 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 1.1165+1.1260X1

X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.083 | 1.529 | 6.217 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for Efficiency variable is 3.083, this implies that the people who are influenced by Modi’s Efficiency are 3.083 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 49 | 49 |
| 1 | 0 | 226 | 226 |
| Total | 0 | 275 | 275 |

Here we observe that our predictions are correct in 226 cases out of 275 ie. In 82.18% of the cases our predicted value matches with the observed value.

1. **Harbour Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X3** |  | 1 | 1 | 21.3914 |  | <.0001 | Personality |
| **2** | **X2** |  | 1 | 2 | 5.7649 |  | 0.0163 | Marketing skills |
| **3** | **X4** |  | 1 | 3 | 5.3563 |  | 0.0206 | UPA2 Bad governance |

From the above table we can conclude that among the Harbour area group the Modi voters believe to have voted due to his Persoanlity, Marketing skills and UPA2 bad governance and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 37.2943 | 3 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.9152 | 0.3640 | 6.3218 | 0.0119 |
| X2 | 1 | -0.9973 | 0.4239 | 5.5337 | 0.0187 |
| X3 | 1 | 2.1670 | 0.6370 | 11.5719 | 0.0007 |
| X4 | 1 | 1.2091 | 0.5423 | 4.9709 | 0.0258 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 4.7825 | 4 | 0.3104 |

Here we observe that p-value>0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.9152-0.9973X2+2.1670X3-1.2091X4

X2:-Marketing Skills X3:-Personality X4:-UPA2 bad governance

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 0.369 | 0.161 | 0.847 |
| **X3** | 8.732 | 2.505 | 30.432 |
| **X4** | 3.350 | 1.157 | 9.698 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for marketing skills variable is 0.369, this implies that the people who are influenced by Modi’s Marketing skills are 0.369 times more likely to vote for him over voting others.
2. OR for Personality variable is 8.732 this implies that the people who are influenced by Modi’s Personality are 8.732 times more likely to vote for him over voting others.
3. OR for UPA2 Bad governance variable is 3.350, this implies that the people who are influenced by UPA 2 bad governance are 3.350 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 30 | 13 | 43 |
| 1 | 22 | 101 | 123 |
| Total | 52 | 114 | 156 |

Here we observe that our predictions are correct in 131 cases out of 156 ie. In 83.974% of the cases our predicted value matches with the observed value.

**d. Gender**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Summary of Stepwise Selection | | | | | | | | |
| Step | Effect | | DF | Number IN | Score Chi-square | Wald | Pr> chi-sq | Var label |
| Entered | Removed | Chi-sq |  |
| 1 | X1 |  | 1 | 1 | 18.3051 |  | <.0001 | Efficiency |
| 2 | X3 |  | 1 | 2 | 6.5436 |  | 0.0105 | Personality |

**1. Male group**

From the above table we observe that, Efficiency and Personality of Mr. Modi have been the main reason for voting in the entire male group.

**Global Testing:**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 25.7230 | 1 | <.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.9285 | 0.1661 | 31.2636 | <0.0001 |
| X1 | 1 | 1.0625 | 0.2654 | 16.0256 | <.0001 |
| X3 | 1 | 0.778 | 0.3095 | 6.3182 | 0.0120 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 1.6158 | 2 | 0.4378 |

Here we observe that p-value=0.4378>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.9285+1.0625X1+0.778X3

X1:- Efficiency

X3:- Personality

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 2.893 | 1.720 | 4.868 |
| **X3** | 2.177 | 1.187 | 3.994 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR):**

1. OR for the efficiency variable is 2.893, this implies that the people who feel that Modi’s really efficient are 2.893 times more likely to vote for him over voting others.
2. OR for the Personality variable is 2.177, this implies that people voting who feel Modi’s personality as best is 2.177 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 82 | 82 |
| 1 | 0 | 393 | 393 |
| Total | 0 | 475 | 475 |

Here we observe that our predictions are correct in 393 cases out of 475 ie. In 82.73% of the cases our predicted value matches with the observed value.

**2. Female Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 13.6673 |  | 0.0002 | Efficiency |
| **2** | **X3** |  | 1 | 2 | 7.1061 |  | 0.0077 | Personality |
| **3** | **X6** |  | 1 | 3 | 3.9861 |  | 0.0459 | Performance as a CM |

From the above table we can conclude that among the Female gender group the Modi voters believe to have voted due to his Efficiency, Personality and performance as a CM and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 25.6244 | 3 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.4448 | 0.2913 | 2.3318 | 0.1268 |
| X1 | 1 | 1.0504 | 0.3168 | 10.9943 | 0.0009 |
| X3 | 1 | 0.9967 | 0.3644 | 7.4823 | 0.0062 |
| X6 | 1 | 0.3206 | 0.1657 | 3.9351 | 0.0473 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 4.7825 | 4 | 0.3104 |

Here we observe that p-value=0.3104>0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.4448+1.0504X1+0.9967X3+0.3286X6

X1:-Efficiency X3:-Personality X6:-Performance as a CM

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 2.859 | 1.536 | 5.319 |
| **X3** | 2.709 | 1.326 | 5.534 |
| **X6** | 1.389 | 1.004 | 1.922 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for Efficiency variable is 2.859, this implies that the people who are influenced by Modi’s Efficiency are 2.859 times more likely to vote for him over voting others.
2. OR for Personality variable is 2.709 this implies that the people who are influenced by Modi’s Personality are 2.709 times more likely to vote for him over voting others.
3. OR for Performance as a CM is 1.389, this implies that the people who are influenced by Performance as a CM are 1.389 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 58 | 58 |
| 1 | 0 | 288 | 288 |
| Total | 0 | 346 | 346 |

Here we observe that our predictions are correct in 288 cases out of 346 ie. In 83.234% of the cases our predicted value matches with the observed value.

**Section 2. Non-Voters**

1. **Age**
2. **18-35 group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X2** |  | 1 | 1 | 10.8885 |  | 0.0010 | Marketting |
| **2** | **X1** |  | 1 | 2 | 8.2162 |  | 0.0042 | Efficiency |

From the above table we can conclude that among the age-group of 18-35 the Modi voters believe to have voted due to his Marketing factor and efficiency and hence these variables are included in the model

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 19.9544 | 2 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 1.0579 | 0.3961 | 7.1326 | 0.0076 |
| X1 | 1 | 1.2702 | 0.4558 | 7.7661 | 0.0053 |
| X2 | 1 | -1.3754 | 0.4532 | 9.2118 | 0.0024 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.9365 | 2 | 0.6261 |

Here we observe that p-value=0.6261>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 1.0579+1.2702X1-1.3754X2

X2:-Marketing X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.562 | 1.458 | 8.703 |
| **X2** | 0.253 | 0.104 | 0.614 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Efficiency variable is 3.562, this implies that the people who feel that Modi’s efficiency is good are 3.562 times more likely to vote for him over voting others.
2. OR for Marketing variable is 0.253, this implies that the people who were influenced by Modi’s marketing skills are 0.253 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 27 | 15 | 42 |
| 1 | 18 | 60 | 78 |
| Total | 45 | 75 | 120 |

Here we observe that our predictions are correct in 87 cases out of 120 ie. In 72.5% of the cases our predicted value matches with the observed value.

**2. 35-60 group: no results found**

**3.** **60 onwards group: No results found**

**b.** **Occupation**

**1. Service Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 7.9209 |  | 0.0049 | Efficiency |

From the above table we can conclude that among the Service group the Modi voters believe to have voted due to his efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 8.4490 | 1 | 0.0037 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.0541 | 0.3289 | 0.0270 | 0.8694 |
| X1 | 1 | 1.6950 | 0.6338 | 7.1534 | 0.0075 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.0541+1.6950X1

X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 5.447 | 1.573 | 18.862 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Efficiency variable is 5.447, this implies that the people who feel that Modi’s Efficiency is good are 5.447 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 22 | 22 |
| 1 | 0 | 42 | 42 |
| Total | 0 | 64 | 64 |

Here we observe that our predictions are correct in 42 cases out of 64 ie. In 65.6% of the cases our predicted value matches with the observed value.

1. **Business Group: No Results found**
2. **Students Group:**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X2** |  | 1 | 1 | 13.3599 |  | 0.0003 | Marketing |

From the above table we can conclude that among the Students group the Modi voters believe to have voted due to his Marketing skills and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 15.8995 | 1 | <.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation and Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 2.9444 | 1.0260 | 8.2362 | 0.0041 |
| X2 | 1 | -3.1163 | 1.0806 | 8.3161 | 0.0039 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 2.9444-3.1163X2

X2:-Marketing

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 0.044 | 0.005 | 0.369 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for Marketing variable is 0.044, this implies that the people who are influenced by Modi’s Marketing skills are 0.044 times more likely to vote for him over voting others.

**Classification Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 19 | 1 | 20 |
| 1 | 16 | 19 | 35 |
| Total | 35 | 20 | 55 |

Here we observe that our predictions are correct in 38 cases out of 55 ie. In 69.09% of the cases our predicted value matches with the observed value.

1. **Housewife Group: No Results Found**
2. **Retired Group: No results found**
3. **Others Group: No Results found**
4. **Area**
5. **Western Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 8.2292 |  | 0.0041 | Efficiency |

From the above table we can conclude that among the Western area group of the Modi voters believe to have voted due to his Efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 8.7665 | 1 | 0.0031 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.1278 | 0.2923 | 0.1912 | 0.6619 |
| X1 | 1 | 1.5585 | 0.5679 | 7.5320 | 0.0061 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.1278+1.5585X1

X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 4.752 | 1.561 | 14.462 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Efficiency variable is 4.752, this implies that the people who feel that Modi’s Efficiency is good are 4.752 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 17 | 17 | 34 |
| 1 | 8 | 37 | 45 |
| Total | 25 | 54 | 79 |

Here we observe that our predictions are correct in 54 cases out of 79 ie. In 68.35% of the cases our predicted value matches with the observed value.

1. **Central group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X1** |  | 1 | 1 | 4.5720 |  | 0.0325 | Efficiency |

From the above table we can conclude that among the Central area group the Modi voters believe to have voted due to his efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**: - The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 4.6763 | 1 | 0.0306 |

Here we observe that p-value is 0.0306 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -0.0870 | 0.4174 | 0.0435 | 0.8349 |
| X1 | 1 | 1.3679 | 0.6556 | 4.3558 | 0.0369 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -0.0870+1.3679X1

X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.927 | 1.087 | 14.195 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Efficiency variable is 3.927, this implies that the people who feel that Modi’s Efficiency is good are 3.927 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 14 | 14 |
| 1 | 0 | 32 | 32 |
| Total | 0 | 46 | 46 |

Here we observe that our predictions are correct in 32 cases out of 46 ie. In 69.56%% of the cases our predicted value matches with the observed value.

1. **Harbour Area: No Results found**
2. **Gender**
3. **Male**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1**  **2** | **X1**  **X2** |  | 1  1 | 1  2 | 6.9853  6.3784 |  | 0.0082  0.0116 | Efficiency  Marketing |

From the above table we can conclude that among the Male gender the Modi voters believe to have voted due to his Marketing factor and efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 13.7791 | 2 | 0.0010 |

Here we observe that p-value0.0010 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.8099 | 0.4869 | 2.9840 | 0.0841 |
| X1 | 1 | -1.3448 | 0.5476 | 6.0312 | 0.0141 |
| X2 | 1 | -1.3448 | 0.5476 | 6.0312 | 0.0141 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0743 | 1 | 0.7851 |

Here we observe that p-value=0.7851>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.8099-1.3448X1-1.3448X2

X2:-Marketing X1:-Efficiency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X1** | 3.838 | 1.312 | 11.225 |
| **X2** | 0.261 | 0.089 | .762 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for Efficiency variable is 3.838, this implies that the people who were influenced by Modi’s Efficiency is 3.838 times more likely to vote for him over voting others.
2. OR for the Marketing variable is 0.261, this implies that the people who feel that Modi’s marketing skills are good are 0.261 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 18 | 10 | 28 |
| 1 | 19 | 39 | 58 |
| Total | 37 | 49 | 86 |

Here we observe that our predictions are correct in 57cases out of 86 ie. In 66.28% of the cases our predicted value matches with the observed value.

**2. Female group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X2** |  | 1 | 1 | 4.5509 |  | 0.0329 | Marketing |

From the above table we can conclude that among the Female gender group the Modi voters believe to have voted due to his Marketing skills and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 4.5952 | 1 | 0.0321 |

Here we observe that p-value 0.0321 < 0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 1.1314 | 0.3637 | 9.6786 | 0.0019 |
| X2 | 1 | -1.0260 | 0.4877 | 4.4268 | 0.0354 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.0000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 1.1314-1.0260X2

X2:-Marketing

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 0.358 | 0.138 | 0.932 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Marketing variable is 0.358, this implies that the people who feel that Modi’s marketing skills are good are 0.358 times more likely to vote for him over voting others.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 0 | 28 | 28 |
| 1 | 0 | 51 | 51 |
| Total | 0 | 79 | 79 |

Here we observe that our predictions are correct in 51 cases out of 79 ie. In 64.55% of the cases our predicted value matches with the observed value.

***Negative Factors***

**Section 1: Voters**

Our dependent variable is:

Y: 1 if voted for Modi

Y: 0 if voted for others

Independent Variable is:

X1: Terrorism

X2: Gujarat riots

X3: Negligence of Poor

X4: Powerful Image

X5: relations with specific people

X6: allegations against UPA-2

X7: Division of India

X8: Media transparency

X9: Muslim Topi case

X10: Gatbandan situation

X11: Overemphasis of Gujarat Development

X12: senior leaders of BJP

1. **Age Group**
2. **18-35 onwards group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X4** |  | 1 | 1 | 25.8060 |  | <0.0001 | Powerful Image |
| **2**  **3** | **X7**  **X2** |  | 1  1 | 2  3 | 9.2320  5.1779 |  | 0.0024  0.0229 | Division of India  Gujarat riots |

From the above table we can conclude that among the age-group of 18-35 the Modi non-voters believe to not have voted due to his Powerful Image, Division of India and Gujarat riots and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 39.9973 | 9 | <.0001 |

Here we observe that p-value <.0001 hence we do not reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.5829 | 0.2476 | 108.8158 | <.0001 |
| X2 | 1 | 0.3327 | 0.1472 | 5.1064 | 0.0238 |
| X4 | 1 | 0.4903 | 0.1501 | 10.6743 | 0.0011 |
| X7 | 1 | 0.3319 | 0.1410 | 5.5418 | 0.0186 |

Since almost all the p-values are less than 0.05 we do not reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 10.6047 | 7 | 0.1568 |

Here we observe that p-value is >0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.5829+0.3327X2 +0.4903X4 +0.3319X7

X2:-Gujarat riots X4:-Powerful Image X7:-Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 1.395 | 1.045 | 1.861 |
| **X4** | 1.633 | 1.217 | 2.191 |
| **X7** | 1.394 | 1.057 | 1.837 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Gujarat riots variable is 1.395, this implies that the people who are influenced by Gujarat riots are 1.395 times more likely to vote for others over voting Modi.
2. OR for the Powerful Image variable is 1.633, this implies that the people who are influenced by his powerful Image are 1.633 times more likely to vote for others over voting Modi.
3. OR for the Division of India variable is 1.394, this implies that the people who are influenced by his Division of India are 1.394 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 395 | 0 | 395 |
| 1 | 93 | 0 | 93 |
| Total | 488 | 0 | 488 |

Here we observe that our predictions are correct in 395 cases out of 488 ie. In 80.94% of the cases our predicted value matches with the observed value.

1. **35-60 onwards group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X5** |  | 1 | 1 | 19.2031 |  | <0.0001 | Relations with specific people |
| **2** | **X7** |  | 1 | 2 | 5.9393 |  | 0.0148 | Division of India |

From the above table we can conclude that among the 35-60 age groups the Modi non-voters believe to have voted due to his relations with specific people and division of India and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 24.4737 | 2 | <.0001 |

Here we observe that p-value<.0001hence we do not reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -3.1520 | 0.3843 | 67.2568 | <.0001 |
| X5 | 1 | 0.7721 | 0.2748 | 7.8955 | 0.0050 |
| X7 | 1 | 0.5913 | 0.2466 | 5.7469 | 0.0165 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 20.3864 | 5 | 0.0011 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -3.1520 + 0.7721X5 + 0.5913X7

X5:-Relations with specific people X7:-Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X5** | 2.164 | 1.263 | 3.709 |
| **X7** | 1.806 | 1.114 | 2.929 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Relations with Specific people variable is 2.164, this implies that the people who are influenced by his relations with specific people are 2.164 times more likely to vote for others over voting Modi.
2. OR for the Division of India variable is 1.806, this implies that the people who are influenced by his Division of India are 1.806 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 227 | 0 | 227 |
| 1 | 32 | 0 | 32 |
| Total | 259 | 0 | 259 |

Here we observe that our predictions are correct in 227 cases out of 259 ie. In 87.6% of the cases our predicted value matches with the observed value.

1. **60 onwards group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X7** |  | 1 | 1 | 13.2663 |  | 0.0003 | Division of India |
| **2** | **X10** |  | 1 | 2 | 5.3642 |  | 0.0206 | Gatbandan situation |

From the above table we can conclude that among the age-group of 60 onwards the Modi voters believe to have voted due to division of India factor and Gatbandan situation and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 17.4422 | 2 | 0.0002 |

Here we observe that p-value 0.0002 hence we do not reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -3.2686 | 0.7143 | 20.9405 | <.0001 |
| X7 | 1 | 1.1892 | 0.3900 | 9.2992 | 0.0054 |
| X10 | 1 | 0.9213 | 0.4160 | 4.9055 | 0.0268 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 17.9628 | 4 | 0.0013 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -3.2686+1.1892X7+0.9213X10

X7:- Division of India X10:- Gatbandan situation

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X7** | 3.284 | 1.529 | 7.053 |
| **X10** | 2.513 | 1.112 | 5.678 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Division of India variable is 3.284, this implies that the people who are influenced by Division of India factor are 3.284 times more likely to vote for others over voting Modi.
2. OR for the Gatbandan situation 2.513, this implies that the people who are influenced by Gatbandan situation factor factor are 2.513 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 56 | 3 | 59 |
| 1 | 9 | 5 | 14 |
| Total | 65 | 8 | 73 |

Here we observe that our predictions are correct in 61 cases out of 73 ie. In 83.56% of the cases our predicted value matches with the observed value.

1. **Occupation**
2. **Service Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X6** |  | 1 | 1 | 31.9114 |  | <.0001 | Allegations against UPA2 |
| **2** | **X7** |  | 1 | 2 | 6.4144 |  | 0.0113 | Division of India |

From the above table we can conclude that among the Service group the Modi non-voters believe to not have voted due to his allegations against UPA2 and Division of India factor and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 38.6410 | 2 | <.0001 |

Here we observe that p-value<.0001 hence we do not reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.8708 | 0.3055 | 89.4893 | <.0001 |
| X6 | 1 | 0.8815 | 0.2035 | 18.7592 | 0.0001 |
| X7 | 1 | 0.4417 | 0.1756 | 6.2965 | 0.0121 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 10.2651 | 5 | 0.0681 |

Here we observe that p-value is >0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.8708 + 0.8815X6 + 0.4417X7

X7:-Division of India X6:- allegations against UPA2

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X6** | 2.414 | 1.620 | 3.598 |
| **X7** | 1.554 | 1.101 | 2.192 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the allegations against UPA 2 variables is 2.414, this implies that the people who are influenced by allegations against UPA2 factor are 3.284 times more likely to vote for others over voting Modi.
2. OR for the Division of India variable is 1.554, this implies that the people who are influenced by Division of India factor are 1.554 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 316 | 0 | 316 |
| 1 | 50 | 0 | 50 |
| Total | 366 | 0 | 366 |

Here we observe that our predictions are correct in 316 cases out of 366 ie. In 86.34% of the cases our predicted value matches with the observed value.

**2.Business group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X5** |  | 1 | 1 | 15.3273 |  | <.0001 | Relations with specific people |

From the above table we can conclude that among the Business the Modi non-voters believe to have voted due to his Relations with specific people and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 15.0928 | 1 | <.0001 |

Here we observe that p-value<.0001 hence we do not reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.6312 | 0.5185 | 25.7478 | <.0001 |
| X5 | 1 | 1.2368 | 0.3419 | 13.0832 | 0.0003 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.8750 | 1 | 0.3496 |

Here we observe that p-value is >0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.6312 + 1.2368X5

X5:-relations with specific people

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X5** | 3.445 | 1.762 | 6.733 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the relation with specific people variable is 3.445, this implies that the people who are influenced by relations with specific people are 3.445 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 90 | 0 | 90 |
| 1 | 14 | 0 | 14 |
| Total | 104 | 0 | 104 |

Here we observe that our predictions are correct in 90 cases out of 104 ie. In 86.54% of the cases our predicted value matches with the observed value

**3.Student group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X5** |  | 1 | 1 | 6.2136 |  | 0.0127 | Relations with specific people |

From the above table we can conclude that among the Students group the Modi non-voters believe to have voted due to his relations with specific people and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 6.2410 | 1 | 0.0125 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.1881 | 0.3434 | 40.5907 | <.0001 |
| X5 | 1 | 0.5880 | 0.2409 | 5.9596 | 0.0146 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 4.3259 | 1 | 0.0375 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.1881 + 0.5880X5

X5:-relations with specific people

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X5** | 1.800 | 1.123 | 2.887 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the relation with specific people variable is 1.800, this implies that the people who are influenced by relations with specific people factor are 1.80 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 143 | 0 | 143 |
| 1 | 49 | 0 | 49 |
| Total | 192 | 0 | 192 |

Here we observe that our predictions are correct in 143 cases out of 192 ie. In 74.48% of the cases our predicted value matches with the observed value

1. **Housewife voters**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X10** |  | 1 | 1 | 12.0095 |  | 0.0005 | Gatbandan situation |
| **2** | **X2** |  | 1 | 2 | 5.8293 |  | 0.0158 | Gujarat riots |

From the above table we can conclude that among the housewife group the Modi non-voters believe to not have voted due to Gatbandan situation and Gujarat riots and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 19.8365 | 2 | <.0001 |

Here we observe that p-value<.0001 hence we hence reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -5.0500 | 1.2592 | 16.0835 | <.0001 |
| X2 | 1 | 1.0726 | 0.4837 | 4.9174 | 0.0266 |
| X10 | 1 | 1.4673 | 0.6092 | 5.8008 | 0.0160 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 2.9385 | 5 | 0.7095 |

Here we observe that p-value is >0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -5.0500 + 1.0726X2 + 1.4673X10

X2:-Gujarat riots X10:-Gatbandan situation

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 2.923 | 1.133 | 7.543 |
| **X10** | 4.338 | 1.314 | 14.316 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Gujarat riots variable is 2.923, this implies that the people who are influenced by Gujarat riots are 2.923 times more likely to vote for others over voting Modi.
2. OR for the Gatbandan situation variable is 4.338, this implies that the people who are influenced by gatbandan situation factor are 4.338 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 67 | 0 | 67 |
| 1 | 12 | 0 | 12 |
| Total | 79 | 0 | 79 |

Here we observe that our predictions are correct in 67 cases out of 79 i.e. in 84.8% of the cases our predicted value matches with the observed value

1. **Retired group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X7** |  | 1 | 1 | 5.2652 |  | 0.0218 | Division of India |
|  |  |  |  |  |  |  |  |  |

From the above table we can conclude that among the Retired group of the Modi non-voters believe to not have voted due to Division of India factor and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 5.1075 | 1 | 0.0238 |

Here we observe that p-value<0.05 hence we hence we reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.6520 | 0.6700 | 15.6679 | <.0001 |
| X7 | 1 | 0.9758 | 0.4539 | 4.6214 | 0.0316 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 3.0084 | 1 | 0.0828 |

Here we observe that p-value is >0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.6520 + 0.9758X7

X7:-Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X7** | 2.653 | 1.090 | 6.458 |
|  |  |  |  |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Division of India variable is 2.653, this implies that the people who are influenced by Division of India factor are 2.653 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 45 | 4 | 49 |
| 1 | 7 | 2 | 9 |
| Total | 52 | 6 | 58 |

Here we observe that our predictions are correct in 47 cases out of 58 ie. In 81% of the cases our predicted value matches with the observed value.

1. **Others group: No result found**
2. **Area**
3. **Western group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X2** |  | 1 | 1 | 24.7332 |  | <.0001 | Gujarat riots |
| **2** | **X5** |  | 1 | 2 | 12.8260 |  | 0.0003 | Relation with specific people |
| **3** | **X6** |  | 1 | 3 | 5.5158 |  | 0.0188 | Allegations against UPA2 |

From the above table we can conclude that among the Western area of the Modi non-voters believe to not have voted due to Gujarat riots, his relations with specific people and his allegations against UPA2 and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 43.2482 | 3 | <.0001 |

Here we observe that p-value<.0001 hence we hence we reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -3.1963 | 0.3373 | 89.80196 | <.0001 |
| X2 | 1 | 0.5514 | 0.1756 | 9.8580 | 0.0017 |
| X5 | 1 | 0.4623 | 0.1987 | 5.4154 | 0.0200 |
| X6 | 1 | 0.4807 | 0.2069 | 5.3966 | 0.0202 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 16.1120 | 7 | 0.0241 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -3.1963 + 0.5514X2 + 0.4623X5 + 0.4808X6

X2:- Gujarat riots X5:-relation with specific people X6:-allegations against UPA2

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 1.736 | 1.230 | 2.449 |
| **X5** | 1.588 | 1.076 | 2.343 |
| **X6** | 1.617 | 1.078 | 2.426 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Gujarat riots variable is 1.736, this implies that the people who are influenced by Gujarat riots factor are 1.736 times more likely to vote for others over voting Modi.
2. OR for the relation with specific people variable is 1.588, this implies that the people who are influenced by his relations with specific people factor are 1.588 times more likely to vote for others over voting Modi.
3. OR for the allegation against UPA2 variable is 1.617, this implies that the people who are influenced by allegations against UPA2 factor are 1.617 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 332 | 0 | 332 |
| 1 | 47 | 0 | 47 |
| Total | 332 | 0 | 379 |

Here we observe that our predictions are correct 332 cases out of 379 ie. In 87.6% of the cases our predicted value matches with the observed value.

1. **Central group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X7** |  | 1 | 1 | 22.8801 |  | <0.0001 | Division of India |

From the above table we can conclude that among the Central group the Modi non-voters believe to not have voted due to division of India factor hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 11.0999 | 1 | 0.0005 |

Here we observe that p-value<0.05 hence we reject H0 and conclude atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.0766 | 0.2395 | 75.1923 | <.0001 |
| X7 | 1 | 0.8137 | 0.1776 | 20.9877 | <.0001 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.000 | 0 | 1 |

Here we observe that p-value=1>0.05 hence we reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.0766 + 0.8137X7

X7:-Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X7** | 2.256 | 1.593 | 3.196 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Division of India variable is 2.256, this implies that the people who are influenced by Division of India factor are 2.256 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 226 | 0 | 226 |
| 1 | 49 | 0 | 49 |
| Total | 275 | 0 | 275 |

Here we observe that our predictions are correct in 226 cases out of 275 ie. In 82.19% of the cases our predicted value matches with the observed value.

**3. Harbour Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X7** |  | 1 | 1 | 11.7436 |  | 0.0006 | Division of India |
| **2** | **X5** |  | 1 | 2 | 4.7687 |  | 0.0290 | Relations with specific people |

From the above table we can conclude that among the harbor group the Modi non-voters believe to not have voted due to division of India factor and relations with specific people and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 15.3808 | 2 | 0.0005 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that there is altleast one variable which is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -3.1873 | 0.4906 | 42.2131 | <.0001 |
| X5 | 1 | 0.6778 | 0.3182 | 4.5371 | 0.0332 |
| X7 | 1 | 0.6905 | 0.2814 | 6.0200 | 0.0141 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 9.7260 | 4 | 0.0453 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -3.1873 +0.6778X5 + 0.6905X7

X5:- close relations with specific people X7:- Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X5** | 1.970 | 1.056 | 3.675 |
| **X7** | 1.995 | 1.149 | 3.463 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the relation with specific people variable is 1.970, this implies that the people who are influenced by relations with specific people are 1.970 times more likely to vote for others over voting Modi.
2. OR for the Division of India variable is 1.995, this implies that the people who are influenced by Division of India factor are 1.995 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 112 | 11 | 123 |
| 1 | 32 | 11 | 43 |
| Total | 144 | 22 | 166 |

Here we observe that our predictions are correct in 123 cases out of 166 ie. In 74.09% of the cases our predicted value matches with the observed value.

1. **Gender**
2. **Male group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X7** |  | 1 | 1 | 23.4471 |  | <.0001 | Division of India |
| **2** | **X2** |  | 1 | 2 | 10.9621 |  | 0.0009 | Gujarat Riots |
| **3** | **X5** |  | 1 | 3 | 6.4583 |  | 0.0110 | Relations with specific people |

From the above table we can conclude that among the Male group Modi non-voters believe to have voted due to division of India factor, Gujarat riots and relations with specific people and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 32.8665 | 2 | <.0001 |

Here we observe that p-value<.0001 hence we reject H0 and conclude that there is atleast one variable that is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.6540 | 0.2580 | 105.7919 | <.0001 |
| X2 | 1 | 0.4086 | 0.1490 | 7.5141 | 0.0061 |
| X5 | 1 | 0.4059 | 0.1611 | 6.3473 | 0.0118 |
| X7 | 1 | 0.3952 | 0.1485 | 7.0808 | 0.0078 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0:Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 32.8758 | 7 | <0.0001 |

Here we observe that p-value is <0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.6540 + 0.4086X2 + 0.4059X5 + 0.3952X7

X2:-Gujarat Riots X5:-relation with specific people X7:- Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X2** | 1.505 | 1.123 | 2.015 |
| **X5** | 1.501 | 1.094 | 2.058 |
| **X7** | 1.485 | 1.110 | 1.986 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Gujarat riots variable is 1.505, this implies that the people who are influenced by Gujarat riots variable are 1.505 times more likely to vote for others over voting Modi.
2. OR for the relations with specific people variable is 1.501, this implies that the people who are influenced by relations with specific people factor are 1.501 times more likely to vote for others over voting Modi.
3. OR for the Division of India variable is 1.485, this implies that the people who are influenced by Division of India factor are 1.485 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 393 | 0 | 393 |
| 1 | 81 | 0 | 81 |
| Total | 474 | 0 | 474 |

Here we observe that our predictions are correct in 393 cases out of 474 ie. In 82.91% of the cases our predicted value matches with the observed value

**2. Female Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X4** |  | 1 | 1 | 29.1414 |  | <.0001 | Powerful Image |
| **2** | **X7** |  | 1 | 2 | 10.2393 |  | 0.0014 | Division of India |
| **3** | **X6** |  | 1 | 3 | 5.6176 |  | 0.0178 | Allegations against UPA2 |

From the above table we can conclude that among the Female Modi non-voters believe to have voted due to his powerful image, division of India variable and allegations against UPA2 and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 43.6629 | 3 | <.0001 |

Here we observe that p-value<.0001 hence we reject H0 and conclude that there is atleast one variable that is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -3.2821 | 0.3594 | 83.3903 | <.0001 |
| X4 | 1 | 0.6011 | 0.2042 | 8.6668 | 0.0032 |
| X6 | 1 | 0.5465 | 0.2338 | 5.4640 | 0.0194 |
| X7 | 1 | 0.4663 | 0.1949 | 5.7262 | 0.0167 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable are significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 10.0644 | 6 | 0.1220 |

Here we observe that p-value is >0.05 hence we reject H0 and conclude that the model is a not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -3.2821 + 0.6011X4 + 0.5465X6 + 0.4663X7

X4:-Powerful Image X6:-allegations against UPA2 X7:- Division of India

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 1.824 | 1.223 | 2.722 |
| **X6** | 1.727 | 1.092 | 2.731 |
| **X7** | 1.594 | 1.088 | 2.336 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the Powerful Image variable is 1.824, this implies that the people who are influenced by Powerful Image are 1.824 times more likely to vote for others over voting Modi
2. OR for the allegation against UPA2 variable is 1.727, this implies that the people who are influenced by allegations against UPA2 variable are 1.727 times more likely to vote for others over voting Modi.
3. OR for the Division of India variable is 1.594, this implies that the people who are influenced by Division of India factor are 1.594 times more likely to vote for others over voting Modi.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 288 | 0 | 288 |
| 1 | 58 | 0 | 58 |
| Total | 346 | 0 | 346 |

Here we observe that our predictions are correct in 288 cases out of 346 ie. In 83.23% of the cases our predicted value matches with the observed value

**Section 2: Non-voters**

1. **Age**

**1.18-35 group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X8** |  | 1 | 1 | 12.7915 |  | 0.0003 | Clean PM |
| **2** | **X4** |  | 1 | 2 | 7.8870 |  | 0.005 | Powerful Image |
| **3** | **X9** |  | 1 | 3 | 9.5663 |  | 0.002 | Muslim Topi case |
| **4** | **X11** |  | 1 | 4 | 5.1766 |  | 0.0229 | Overemphasis of Guj |

From the above table we can conclude that among the age-group of 18-35 the Modi non-voters believe to not have voted due to his above reasons and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 36.0492 | 4 | 0.0001 |

Here we observe that p-value=0.0001 hence we do not reject H0 and conclude that all the variables are insignificant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -0.7104 | 0.4848 | 2.1477 | 0.1428 |
| X4 | 1 | 1.0288 | 0.3005 | 11.7202 | 0.0006 |
| X8 | 1 | 1.1096 | 0.2929 | 14.3492 | 0.0002 |
| X9 | 1 | -0.8880 | 0.3173 | 7.8362 | 0.0051 |
| X11 | 1 | -0.7573 | 0.3417 | 4.9121 | 0.0267 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 9.3443 | 7 | 0.2289 |

Here we observe that p-value=0.2289>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -0.7104+1.0288X4+1.1096X8-0.8880X9-0.7573X11

X4:- Clean PM X8:- Powerful Image X9:- Muslim Topi case X11:- Overemphasis of Guj

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 2.798 | 1.552 | 5.042 |
| **X8**  **X9**  **X11** | 3.033  0.411  0.469 | 1.708  0.221  0.240 | 5.386  0.706  0.916 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X4 variable is 2.798, this implies that the people who are influenced by X4 are 2.798 times more likely to vote for other than him.
2. OR for the X8 variable is 3.033, this implies that the people who are influenced by X8 are 3.033 times more likely to vote for other than him.
3. OR for the X9 variable is 0.411, this implies that the people who are influenced by X9 are 0.411 times more likely to vote for other than him.
4. OR for theX11 variable is 0.469, this implies that the people who are influenced by X11 are 0.469 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 66 | 12 | 78 |
| 1 | 22 | 20 | 42 |
| Total | 88 | 32 | 120 |

Here we observe that our predictions are correct in 86 cases out of 120 ie. In 71.667% of the cases our predicted value matches with the observed value

**2.35-60 group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X8** |  | 1 | 1 | 6.3931 |  | 0.0115 | Clean PM |

From the above table we can conclude that among the age-group of 35-60 the Modi non-voters believe to not have voted due to his X8 and efficiency and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 6.4050 | 1 | 0.0114 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -1.5577 | 0.6092 | 6.5370 | <0.0106 |
| X8 | 1 | 1.2223 | 0.5202 | 5.5200 | 0.0188 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 4.0277 | 1 | 0.0448 |

Here we observe that p-value=0.0448<0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -1.5577+1.2223X8

X8:-Media Transparency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X8** | 3.395 | 1.225 | 9.411 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X8 variable is 3.395, this implies that the people who are influenced by X8 are 3.395 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 16 | 3 | 19 |
| 1 | 6 | 4 | 10 |
| Total | 22 | 7 | 29 |

Here we observe that our predictions are correct in 20 cases out of 29 ie. In 69% of the cases our predicted value matches with the observed value.

**3.60 Onwards:No results found**

1. **Occupation**
2. **Service group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X8** |  | 1 | 1 | 12.4588 |  | 0.0004 | Media Transparency |

From the above table we can conclude that among the Service group the Modi non-voters believe to not have voted due to his X8 and hence the variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 13.0583 | 1 | 0.0003 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 1.8101 | 0.5058 | 12.8060 | <0.0003 |
| X8 | 1 | -1.1425 | 0.3441 | 11.0244 | 0.0009 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 5.9892 | 1 | 0.0144 |

Here we observe that p-value=0.0144<0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 1.8101-1.1425X10

X8:-Media Transparency

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X8** | 0.319 | 0.163 | 0.626 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X8 variable is 0.319, this implies that the people who are influenced by X8 are 0.319 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 37 | 5 | 42 |
| 1 | 12 | 10 | 22 |
| Total | 49 | 15 | 64 |

Here we observe that our predictions are correct in 47 cases out of 64 i.e. In 73% of the cases our predicted value matches with the observed value

**2.Business**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X10** |  | 1 | 1 | 4.8040 |  | 0.0284 | Gatbandan situation |

From the above table we can conclude that among the business group of the Modi non-voters believe to not have voted due to above variable and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 5.2937 | 1 | 0.0214 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.9449 | 1.1861 | 0.6346 | 0.4257 |
| X10 | 1 | -2.2702 | 1.227 | 3.4234 | 0.0643 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 0.2846 | 1 | 0.5937 |

Here we observe that p-value=0.5937>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.9449-2.2702X10

X10:-Gatbandan situation

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X10** | 0.103 | 0.009 | 1.144 |

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X10 variable is 0.103, this implies that the people who are influenced by X10 are 0.103 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 10 | 0 | 10 |
| 1 | 0 | 7 | 7 |
| Total | 10 | 7 | 17 |

Here we observe that our predictions are correct in 17 cases out of 17 i.e. In 100% of the cases our predicted value matches with the observed value

1. **Students**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X9** |  | 1 | 1 | 7.6442 |  | 0.0057 | Muslim Topi case |
| **2** | **X4** |  | 1 | 2 | 10.3933 |  | 0.0013 | Powerful Image |
| **3** | **X6** |  | 1 | 3 | 6.5561 |  | 0.0105 | Allegations against UPA 2 |
| **4** | **X11** |  | 1 | 4 | 4.3932 |  | 0.0361 | Overemphasis of Guj |
| **5** | **X8** |  | 1 | 5 | 5.5318 |  | 0.0187 | Media transparency |

From the above table we can conclude that among the Students group the Modi non-voters believe to not have voted due to above variables and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 35.4575 | 5 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -0.2313 | 0.9902 | 0.0546 | 0.8153 |
| X4 | 1 | 1.7121 | 0.6579 | 6.7732 | 0.0093 |
| X6 | 1 | 2.0241 | 0.7667 | 6.9693 | 0.0083 |
| X8 | 1 | 1.2582 | 0.5806 | 4.6964 | 0.0302 |
| X9 | 1 | -2.7334 | 0.8385 | 10.6277 | 0.0011 |
| X11 | 1 | -1.8650 | 0.7819 | 5.6891 | 0.0171 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 9.8494 | 6 | 0.1311 |

Here we observe that p-value=0.1311>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -0.2313+1.7121X4+2.0241X6+1.2582X8-2.7334X9-1.8650X11

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 5.541 | 1.526 | 20.116 |
| **X6** | 7.569 | 1.684 | 34.015 |
| **X8** | 3.519 | 1.128 | 10.981 |
| **X9** | 0.065 | 0.013 | 0.336 |
| **X11** | 0.155 | 0.033 | 0.717 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X4 variable is 5.541, this implies that the people who are influenced by X4 are 5.541 times more likely to vote for other than him.

2. OR for the X6 variable is 7.569, this implies that the people who are influenced by X6 are 7.569 times more likely to vote for other than him.

3. OR for the X8 variable is 3.519, this implies that the people who are influenced by X8 are 3.519 times more likely to vote for other than him.

4. OR for the X9 variable is 0.065, this implies that the people who are influenced by X9 are 0.065 times more likely to vote for other than him.

5. OR for the X11 variable is 0.155, this implies that the people who are influenced by X11 are 0.155 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 25 | 0 | 25 |
| 1 | 30 | 0 | 30 |
| Total | 55 | 0 | 55 |

Here we observe that our predictions are correct in 25 cases out of 55 ie. In 63% of the cases our predicted value matches with the observed value.

**4. Housewife Group: No Result found**

**5. Retired Group: No result Found**

**6. Others group: No result found**

1. **Area**
2. **Western Group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X8** |  | 1 | 1 | 12.7565 |  | 0.0004 | Media Transparency |
| **2** | **X7** |  | 1 | 2 | 7.0227 |  | 0.008 | Division of India |

From the above table we can conclude that among the Western group the Modi non-voters believe to not have voted X8 and X7 and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 13.0347 | 1 | 0.0003 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.339 | 0.5665 | 17.0404 | <0.0001 |
| X7 | 1 | 0.8505 | 0.3346 | 6.4608 | 0.011 |
| X8 | 1 | 1.0529 | 0.3242 | 10.5476 | 0.0012 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 14.4489 | 5 | 0.013 |

Here we observe that p-value=0.013<0.05 hence we reject H0 and conclude that the model is not a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.339+0.8505X7+1.0529X8

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X7** | 2.341 | 1.215 | 4.51 |
| **X8** | 2.866 | 1.518 | 5.41 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X7 variable is 2.341, this implies that the people who are influenced by X7 are 2.341 times more likely to vote for other than him.
2. OR for the X8 variable is 2.866, this implies that the people who are influenced by X8 are 2.866 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 35 | 10 | 45 |
| 1 | 7 | 27 | 34 |
| Total | 42 | 37 | 79 |

Here we observe that our predictions are correct in 62 cases out of 79 ie. In 78.4% of the cases our predicted value matches with the observed value.

**2.Central group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X4** |  | 1 | 1 | 13.2456 |  | 0.0003 | Powerful Image |
| **2** | **X8** |  | 1 | 2 | 4.4312 |  | 0.0353 | Media Transparency |

From the above table we can conclude that among the central group the Modi non-voters believe to not have voted due to his above factors and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 18.0761 | 2 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -2.9800 | 0.8599 | 12.0105 | <0.0005 |
| X4 | 1 | 1.5955 | 0.5366 | 8.8407 | 0.0029 |
| X8 | 1 | 0.9694 | 0.4881 | 3.9448 | 0.0470 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 3.7055 | 5 | 0.5925 |

Here we observe that p-value=0.5925>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -2.9800+1.5955X4+0.9694X8

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 4.931 | 1.723 | 14.116 |
| **X8** | 2.636 | 1.013 | 6.862 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X4 variable is 4.931, this implies that the people who are influenced by X4 are 4.931 times more likely to vote for other than him.
2. OR for the X8 variable is 2.636, this implies that the people who are influenced by X8 are 2.636 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 26 | 6 | 32 |
| 1 | 8 | 6 | 14 |
| Total | 34 | 12 | 46 |

Here we observe that our predictions are correct in 32 cases out of 46 i.e. in 69.5% of the cases our predicted value matches with the observed value

**3.Harbour group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X9** |  | 1 | 1 | 4.3112 |  | 0.0379 | Muslim Topi case |
| **2** | **X6** |  | 1 | 2 | 3.8685 |  | 0.0492 | Allegations against UPA2 |

From the above table we can conclude that among the Harbour group the Modi non-voters believe to not have voted due above reasons and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 8.59 | 2 | 0.0136 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | 0.8121 | 0.8917 | 0.8294 | 0.3624 |
| X6 | 1 | 1.0803 | 0.5791 | 3.4803 | 0.0621 |
| X9 | 1 | -1.7047 | 0.7415 | 5.2855 | 0.0215 |

Since not all the p-values are less than 0.05 we do not reject the null hypothesis and conclude that every independent variable is not individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 3.6348 | 5 | 0.6031 |

Here we observe that p-value=0.6031>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= 0.8121+1.0803X6-1.7047X9

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X6** | 2.946 | 0.947 | 9.164 |
| **X9** | 0.182 | 0.043 | 0.778 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X6 variable is 2.946, this implies that the people who are influenced by X6 are 2.946 times more likely to vote for other than him.
2. OR for the X9 variable is 0.182, this implies that the people who are influenced by X9 are 0.182 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 20 | 2 | 22 |
| 1 | 3 | 5 | 8 |
| Total | 23 | 7 | 29 |

Here we observe that our predictions are correct in 25 cases out of 29 ie. In 86% of the cases our predicted value matches with the observed value.

1. **Gender**
2. **Male**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X8** |  | 1 | 1 | 15.5915 |  | 0.0001 | Media Transparency |
| **2** | **X9** |  | 1 | 2 | 8.7923 |  | 0.003 | Muslim Topi case |

From the above table we can conclude that among Male gender the Modi non-voters believe to not have voted due to above reasons and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 25.1454 | 2 | <0.0001 |

Here we observe that p-value<0.0001 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -0.6216 | 0.4924 | 1.5936 | 0.2068 |
| X8 | 1 | 1.5323 | 0.3823 | 16.0689 | <0.0001 |
| X9 | 1 | -1.1419 | 0.4033 | 8.0167 | 0.0046 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 2.3698 | 5 | 0.7960 |

Here we observe that p-value=0.7960>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -0.6216+1.5323X8-1.1419X9

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X8** | 4.629 | 2.188 | 9.791 |
| **X9** | 0.319 | 0.145 | 0.704 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X8 variable is 4.629, this implies that the people who are influenced by X8 are 4.629 times more likely to vote for other than him.
2. OR for the X9 variable is 0.319, this implies that the people who are influenced by X9 are 4.629 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 41 | 7 | 48 |
| 1 | 8 | 21 | 29 |
| Total | 49 | 28 | 77 |

Here we observe that our predictions are correct in 62 cases out of 77 ie. In 80.15% of the cases our predicted value matches with the observed value.

**2. Female group**

**Stepwise Regression**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Summary of Stepwise Selection** | | | | | | | | |
| **Step** | **Effect** | | **DF** | **Number** | **Score** | **Wald** | **Pr > ChiSq** | **Variable** |
| **Entered** | **Removed** | **In** | **Chi-Square** | **Chi-Square** | **Label** |
| **1** | **X4** |  | 1 | 1 | 13.2552 |  | 0.0003 | Powerful Image |

From the above table we can conclude that among female group the Modi non-voters believe not to have voted due to above reasons and hence these variables are included in the model.

**Global Testing**

Here we test the overall significance of the model.

To Test,

H**o**:- The variables entered into the model by stepwise procedure are insignificant

H**1**:- Not H0

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Global Null Hypothesis: BETA=0** | | | |
| **Test** | **Chi-Square** | **DF** | **Pr > ChiSq** |
| **Likelihood Ratio** | 13.1418 | 11 | 0.0003 |

Here we observe that p-value<0.05 hence we reject H0 and conclude that atleast one variable is significant.

**Parameter Estimation And Individual Testing:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Analysis Of maximum Likelihood Estimates | | | | | |
| Parameter | DF | Estimate | Standard Error | Wald Chi-sq | Pr>chisq |
| Intercept | 1 | -1.2939 | 0.3329 | 15.1035 | <0.0001 |
| X4 | 1 | 1.155 | 0.3405 | 11.5029 | 0.0007 |

Since almost all the p-values are less than 0.05 we reject the null hypothesis and conclude that every independent variable is individually significant.

**Hosmer Lemeshow Goodness of Fit Test:**

To Test,

H0: Model is a good fit for the data   
 H1: Not H0

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow Goodness-of-Fit** | | |
| **Test** | | |
| **Chi-Square** | **DF** | **Pr > ChiSq** |
| 3.4854 | 1 | 0.0619 |

Here we observe that p-value=0.0619>0.05 hence we do not reject H0 and conclude that the model is a good fit for our data.

**Fitted Model:**

Our fitted model is as follows:-

g(x)= -1.2939+1.155X4

We now use this fitted model to evaluate odds ratio for each of the significant factor as well as to prepare classification table to find out the efficiency of the model.

**ODD’S Ratio:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Odds Ratio Estimates** | | | |
| **Effect** | **Point Estimate** | **95% Wald** | |
| **Confidence Limits** | |
| **X4** | 3.174 | 1.628 | 6.187 |

We now interpret the results obtained in the above table.

**Interpretation of ODD’s Ratio (OR)**

1. OR for the X4 variable is 3.174, this implies that the people who are influenced by X4 are 3.174 times more likely to vote for other than him.

**Classification Table:**

The cross-tabulation of frequencies for the observed & the predicted Y values is given in the form of classification table as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Tables of Observed v/s Predicted | | | |
| Observed | Predicted | | Total |
| 0 | 1 |  |
| 0 | 43 | 8 | 51 |
| 1 | 16 | 12 | 28 |
| Total | 59 | 20 | 79 |

Here we observe that our predictions are correct in 55 cases out of 79 ie. In 69.62% of the cases our predicted value matches with the observed value

**Conclusion**

Out of the 1000 samples collected and 975 data retrieved after cleaning we have then bifurcated the data into Voters and non-voters among which we further have tried to find out the most prominent reasons to why did people vote for him and for the people who haven’t voted we tried to find out the reason why they didn’t.

We conclude by stating the reasons in a diagrammatic form.

***Voters- Positive Aspects***

Among all the voters as we bifurcated their **age groups** with their prominent reasons as:

1. **18-35** has the significant factors as **Efficiency** and **Personality** of Mr. Modi to be the main reason for voting.
2. **35-60** has significant factors as **Marketing** and **Personality** of Mr. Modi to be the main reason for voting.
3. **60 onwards** have significant factors as **Efficiency** of Mr. Modi to be the main reason for voting.

Among all the voters as we bifurcated their **Occupation** with their prominent reasons as:

1. **Service**- has the significant factors as **Marketing,Selecting efficient candidate for polls** and **Personality** of Mr. Modi to be the main reason for voting.
2. **Business**-No result found.
3. **Student** has the significant factors as **Efficiency** of Mr. Modi to be the main reason for voting
4. **Housewife** –No results found
5. **Retired** has the significant factors as **UPA-2 bad governance** of Mr. Modi to be the main reason for voting
6. **Others** has the significant factors as **Performance as CM** of Mr. Modi to be the main reason for voting

Among all the voters as we bifurcated their **Area** wise with their prominent reasons as:

1. **Western** has the significant factors as **Efficiency and Struggle from Chaiwala to P.M** of Mr. Modi to be the main reason for voting.
2. **Central** has significant factors as **Efficiency** of Mr. Modi to be the main reason for voting.
3. **Harbour** has significant factors as **Personality, Marketing and UPA-2 bad governance** of Mr. Modi to be the main reason for voting.

Among all the voters as we bifurcated Gender wise with their prominent reasons as:

1. **Male Gender** has the significant factors as **Efficiency and Personality of Mr. Modi** to be the main reason for voting.
2. **Female Gender** has significant factors as **Efficiency, Performance as a CM and Personality** of Mr. Modi to be the main reason for voting.

***Non-Voters- Positive Aspects***

Among all the voters as we bifurcated their **age groups** with their prominent reasons as:

1. **18-35** has the significant factors as **Marketing and Efficiency** of Mr. Modi to be the main reason for voting.
2. **35-60**- No result
3. **60 onwards**- No result

Among all the voters as we bifurcated their **Occupation** with their prominent reasons as:

1. **Service**- has the significant factors as **Efficiency** of Mr. Modi to be the main reason for voting.
2. **Business**-No result found.
3. **Student** has the significant factors as **Marketing** of Mr. Modi to be the main reason for voting
4. **Housewife** –No results found
5. **Retired** –No Result found
6. **Others** – No result found

Among all the voters as we bifurcated **Area wise** with their prominent reasons as:

1. **Western** has the significant factors as Efficiency of Mr. Modi to be the main reason for voting.
2. **Central** has significant factors as Efficiency of Mr. Modi to be the main reason for voting.
3. **Harbour** –No result found

Among all the voters as we bifurcated **Gender wise** with their prominent reasons as:

1. **Male Gender** has the significant factors as Efficiency and Marketing of Mr. Modi to be the main reason for voting.
2. **Female Gender** has significant factors as Marketing of Mr. Modi to be the main reason for voting.

***Voters- Negative Aspects***

Among all the voters as we bifurcated their **age groups** with their prominent reasons as:

1. **18-35** has the significant factors as **Powerful Image, Division of India and Gujarat riots** of Mr. Modi to be the main reason for not voting.
2. **35-60** has significant factors as **Relations with Specific people and Division of India** of Mr. Modi to be the main reason for not voting.
3. **60 onwards** have significant factors as **Division of India and Gatbandhan situation** of Mr. Modi to be the main reason for not voting.

Among all the voters as we bifurcated their **Occupation** with their prominent reasons as:

1. **Service**- has the significant factors as **Allegation against UPA2 and DIVISION of India** of Mr. Modi to be the main reason for not voting.
2. **Business**-- has the significant factors as **Relation with Specific people** of Mr. Modi to be the main reason for not voting.
3. **Student** has the significant factors as **Relation with Specific people** of Mr. Modi to be the main reason for not voting**.**
4. **Housewife** – has the significant factors as **Gatbandhan and Gujarat riots** of Mr. Modi to be the main reason for not voting**.**
5. **Retired** has the significant factors as **Division of India** of Mr. Modi to be the main reason for not voting
6. **Others** : No results found

Among all the voters as we bifurcated their **Area** wise with their prominent reasons as:

1. **Western** has the significant factors as **Gujarat riots, relations with specific people and allegations against UPA2** of Mr. Modi to be the main reason for not voting.
2. **Central** has significant factors as **Division of India** of Mr. Modi to be the main reason for not voting.
3. **Harbour** has significant factors as **Division of India and relation with specific people** of Mr. Modi to be the main reason for not voting.

Among all the voters as we bifurcated **Gender wise** with their prominent reasons as:

1. **Male Gender** has the significant factors as **Division of India, Gujarat riots and relation with specific people** to be the main reason for not voting.
2. **Female Gender** has significant factors as **Powerful image, allegations against UPA2** of Mr. Modi to be the main reason for not voting.

***Non-Voters- Negative Aspects***

Among all the voters as we bifurcated their **age groups** with their prominent reasons as:

1. **18-35** has the significant factors as **Media transparency, Powerful Image, Muslim Topi and Overemphasis of Gujarat of** Mr. Modi to be the main reason for not voting.
2. **35-60**- has the significant factors as **Media Transparency** of Mr. Modi to be the main reason for not voting.
3. **60 onwards**- No result

Among all the voters as we bifurcated their **Occupation** with their prominent reasons as:

1. **Service** has the significant factors as **Media Transparency** of Mr. Modi to be the main reason for not voting.
2. **Business** has the significant factors as **Gatbandhan situation** of Mr. Modi to be the main reason for not voting**.**
3. **Student** has the significant factors as **Muslim Topi, Powerful image, allegation against UPA2, overemphasis of Gujarat and Media Transparency** of Mr. Modi to be the main reason for not voting**.**
4. **Housewife** –NO RESULT FOUND
5. **Retired** No result found
6. **Others** : No results found

Among all the voters as we bifurcated **Area wise** with their prominent reasons as:

1. **Western** has the significant factors as **Media Transparency and Division of India** of Mr. Modi to be the main reason for not voting.
2. **Central** has significant factors as **Powerful Image and Media Transparency** of Mr. Modi to be the main reason for not voting.
3. **Harbour** has significant factors as **Muslim Topi and Allegations against UPA2** of Mr. Modi to be the main reason for not voting.

Among all the voters as we bifurcated **Gender wise** with their prominent reasons as:

1. **Male Gender** has the significant factors as **Muslim Topi and Media Transparency** of Mr. Modi to be the main reason for not voting.
2. **Female Gender** has significant factors as **Powerful Image** of Mr. Modi to be the main reason for voting.

**Bibliography**

**Books Referred:**

1. A course in Linear model

* Anant M. Kshirsagar

1. Applied Multivariate Statistical Analysis

* Richard A. Johnson & Dean W. Wicheren

1. Marketing analysis

* Naresh Malhotra and Satyabhusan Dash

4, Applied Logistic Regression

* Hosmer D. & Lemeshow S.

**Sites Referred:**

We used various websites in our project work

**Previous Project Work Referred:**

“The Credit System” Boon or Bane? (2012-13)

Parenting in Style (2013-14)

University Of Mumbai

Department of Statistics

Kalina, Mumbai 400 098

**Questionnaire**

**Purpose**-We are doing a research project as a requirement of Masters in Science(Statistics) for studying the reasons of Mr. Narendra Modi being elected as a Prime Minister. The questionnaire is designed for the collection of the data on these traits. The information so collected will be used only for research project purpose. We assure you that the details will be kept confidential.

1. **Demographic Details:**

|  |
| --- |
|  |
|  |
|  |

1. **Age Group**: 18-35

35-60

60 onwards

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |

2. **Occupation**: Service

Business

Student

Housewife

Retired

Others

|  |
| --- |
|  |
|  |
|  |

3. **Area**: Central Railway

Western Railway

Harbour Railway

|  |
| --- |
|  |
|  |

4. **Gender**: Male

Female

Q1. **Did you vote?**

Yes No

Q2. **If yes, whom did you vote?**

ModiOthers

Q3. **If not, given a chance, whom would you vote?**

ModiOthers

Q4. **After being elected as Prime Minister, do you think Mr. Narendra Modi will stick to his promises & work on it?**

YesNoDon’t know

Q5. **Was Mr. Modi’s personality an influential factor on your decision to vote for him?**

YesNoNot Applicable

Q6. **How do you find Mr. Narendra Modi’s personality?**

Excellent Good Average Bad

Q7. **Which factor do you think will play a major role of Mr. Modi being selected as a Prime Minister of India? (Multiple answers allowed)**

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

Efficiency

Marketing

Personality

UPA-2 bad governance

Selecting efficient candidates for polls

Q8. **Do you know about RSS (Rashtriya Swayamsevak Sangh)?**

YesNo

Q9. **Do you think, voting for Mr. Modi (an RSS volunteer in the past) would encourage HINDUTVA leading to terrorism?**

YesNoDon’t know

Q10**. Are you aware of Mr. Modi’s performance as a Chief Minister in Gujarat**?

YesNo

Q11. **If yes, rate his performance as a CM:**

ExcellentGoodAverageBad

Q12. **Do you know about Gujarat Model?**

YesNo

Q13.**If yes, what do you know about it;**

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Cleanliness

Water Supply

Electricity

Education

Agriculture

Safety for Women

Roads & Highways

Q14**. After being in a position of Chief Minister, why couldn’t he curb (Control) the 2002, Gujarat riots (Godhara Hatyakand etc.) at the root other than allowing it to prolong. If he failed at such situation in a state, do you think India is in safe hands by electing him as a PM?**

Yes NoDon’t know

Q15. **Has “BAD GOVERNENCE by UPA-2” affected your decision to vote?**

YesNo Not Applicable

Q16. **If yes, order your reason for failure from the options below**

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |

Scams & Corruption

More dependence on import from international market

Lack of co-ordination among the ministers

Farmer suicides

Inflation

Silent Nature of Past Prime Minister

Q17. **Has his alliance with top industrialist in Gujarat led to negligence of poor there?**

YesNoDon’t know

Q18. **Will his “Powerful Image” affect our international relations in negative way?**

Yes NoDon’t know

Q19.**Will his close relation with specific people affect smooth governance in negative way?**

YesNoDon’t know

Q20. **Isn’t Mr. Modi’s strong allegations/Accusation against UPA-2 highly misleading during his campaign?**

YesNo Don’t know

Q21. **Being a “Technosavy Politician” till now, do you think Mr. Modi can use technology in improvement of the country in the following areas?**

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |

Corruption

Safety for Women

Infrastructure

Agriculture

Intelligence & Defense

Education

Q22. **Which mode of technology has influenced your vote for Mr. Modi the most?**

|  |
| --- |
|  |
|  |
|  |
|  |

Newspaper and News channel

Advertisements

Social Media (Facebook, Whatsapp, Google, Twitter, etc.)

Not Applicable

Q23. **Do you think, voting Mr. Modi will lead to the “Division of INDIA” into Hindus & Muslims?**

YesNoDon’t know

Q24. **Since Mr. Modi has not been transparent enough while interacting with media, Can he yet be considered as a CLEAN Prime ministerial candidate?**

YesNoDon’t know

Q25. **Mr. Modi refused to put on ‘Muslim Topi’ offered by a muslim cleric during his ‘Sadbhavana Fast’, can such a person who has no respect for any other religion except Hindu rule our secular country?**

YesNoDon’t know

Q26. **After ruling Gujarat with absolute majority, do you think Mr. Modi can govern in a ‘Gatbandhan situation’ (tie-up) with other political parties?**

YesNo Don’t know

Q27. **Isn’t Mr. Modi covering up his past by overemphasizing the development of Gujarat?**

YesNo Don’t know

Q28. **Hasn’t Mr. Modi been the reason in creating rift by promoting self for Prime Ministerial candidate keeping aside senior leaders of BJP?**

YesNoDon’t know

Q29. **Has his struggle from a ‘Chaiwala to P.M.’, helped him be a Prime Minister according to you?**

YesNoDon’t know

Q30. **After 100 days of Modi Government, do you still think he has been a right choice for the Prime Minister of India**?

YesNoDon’t know

**Softwares Used:-**

* **Graphical Representation (Excel)**
* **Chi Square Analysis and Measure of Association (SAS & SPSS)**
* **Pareto Analysis (Minitab)**
* **CHAID Analysis (SPSS)**
* **Logistic Regression (SAS & SPSS)**

**SAS Codes:-**

1. **SAS PROGRAM FOR CHI-SQUARE ANALYSIS**

proc FREQ data=data-nr;

Tables Y \*X/All;

run;

1. **SAS PROGRAM FOR LOGISTIC REGRESSION**
   1. **Positive factors for voters:**

proc logistic data=nr descending ;

model Y=X1 X2 X3 X4 X5 X6 X7;

selection = stepwise

slstay = 0.2

ctable

lackfit

risklimits;

output out=predic p=phat reschi=resi;

run ;

* 1. **Positive factors for non-voters:**

proc logistic data=nr descending ;

model Y=X1 X2 X3 X4 X5 X6 X7;

selection = stepwise

slstay = 0.2

ctable

lackfit

risklimits;

output out=predic p=phat reschi=resi;

run ;

* 1. **Negative factors for voters:**

proc logistic data=nr descending ;

model Y=X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12;

selection = stepwise

slstay = 0.2

ctable

lackfit

risklimits;

output out=predic p=phat reschi=resi;

run ;

* 1. **Negative factors for non-voters:**

proc logistic data=nr descending ;

model Y=X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12;

selection = stepwise

slstay = 0.2

ctable

lackfit

risklimits;

output out=predic p=phat reschi=resi;

run ;