Crimes Against Women In India Over The Years 2001 – 2010

- ***Dataset :-*** https://www.kaggle.com/code/aryanml007/crime-against-women-in-india-2001-to-2014

- ***Data Description :-*** The dataset has state-wise and district level data on the various crimes committed against women between 2001 to 2014. The crimes that are included are Rape, Kidnapping and Abduction, Dowry Deaths, Assault on women, Insult to modesty of women, Cruelty on women by husband and their relatives, Importation of girls etc.

  For sake of computation and analysis I have extract out the data from 2001 to 2010. The variables of the dataset are:-
  (1) Rape **(2)**Kidnapping and Abduction **(3)** Dowry Deaths **(4)**Assault on women **(5)** Insult to modesty of women **(6)** Cruelty on women by husband and their relatives.
  Also I have classified the states of India based on zone-wise classification.

Zonewise Classification

- **Southern Zone:-** Andhra Pradesh, Telangana, Karnataka, Tamil-Nadu , Kerala.

- **Northern Zone :-** Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Delhi, Chandigarh.

- **Eastern Zone :-** Bihar, Jharkhand, West Bengal, Odisha.

- **Western Zone :-** Rajasthan, Gujarat, Maharashtra, Goa.

- **North-East Zone :-** Assam, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Sikkim.

- **Central Zone :-** Madhya Pradesh, Chhattisgarh

ABSTRACT :

Violence against women in India refers to physical or sexual violence committed against Indian women, typically by a man. Common forms of violence against women in India include acts such as domestic abuse, sexual assault, and murder. Crime against women such as rape, acid throwing, dowry killings, honour killings, and the forced prostitution of young girls has been reported in India. Police records in India show a high incidence of crimes against women. The survey itself has been criticized for bias. Women belonging to any class, caste, creed or religion can be victims of this cruel form of violence and disfigurement. In India, domestic violence toward women is considered as any type of abuse that can be considered a threat; it can also be physical, psychological, or sexual abuse to any current or former partner. In 1961, the Government of India passed the Dowry Prohibition Act making dowry demands in wedding arrangements illegal. However, many cases of dowry-related domestic violence, suicides and murders have been reported. In the l980s, numerous such cases were reported.

INTRODUCTION :

Women's rights are human rights. Millions of women around the world face discrimination and abuse just because they are women. Every woman deserves the rights to realize and enjoy her freedom and potential, and is equally entitled to personal freedoms, from the right of personal security to the right to determine freely the number and spacing of the children they bear. However, due to gender-based discrimination and inequities that remains so common around the world, many women are not given the proper education or care they need, their experiences go unnoticed, unheard, they are being forced into prostitution, and their lives are threatened by violence, including violence in their own homes. However, women constitute 50 % of the world population and the development of every country is impossible if women and their rights are ignored.

The human rights of Indian women are violated every day. The recent past have seen Indians protesting throughout the country on a series of highly-publicized rape and murder cases involving young female victims.

**Why Crime Against Women is an extremely crucial proposition in Indian diaspora ?

In the ancient Indian women held a high place of respect in the society as mentioned in Rigveda and other scriptures. Volumes can be written about the status of our women and their heroic deeds from the vedic period to the modern times. But later on, because of social, political and economic changes, women lost their status and were relegated to the background. Many evil customs and traditions stepped in which enslaved the women and tied them to the boundaries of the house.

- **Prevalence and Severity:** Reported crimes against women in India have shown a worrying increase. This includes acts of rape, domestic violence, dowry-related violence, acid attacks, and human trafficking. These crimes not only cause physical and emotional harm, but can also shatter lives and limit opportunities.
- **Social and Cultural Factors:** Gender inequality and patriarchal attitudes contribute significantly to this issue. Traditional practices like child marriage and dowry demands create vulnerabilities for women. Societal silence and victim-blaming further discourage reporting.
- **Impact on Development:** Crimes against women impede India's social and economic progress. Women who face violence are less likely to participate in education, employment, and public life. This hinders overall development and creates a climate of fear.
- **Need for Change:** Addressing this issue requires a multi-pronged approach. Strengthening laws, improving law enforcement, and ensuring speedy justice are crucial. Social awareness campaigns, educational initiatives, and economic empowerment programs can also play a vital role in changing attitudes and promoting gender equality.

## <u>Sensitivity of the Topic:</u>

The topic is sensitive due to the nature of the crimes and the trauma faced by victims. It's important to approach it with empathy and respect, ensuring the safety and privacy of survivors. Focusing on solutions and empowering women is key to fostering positive change.
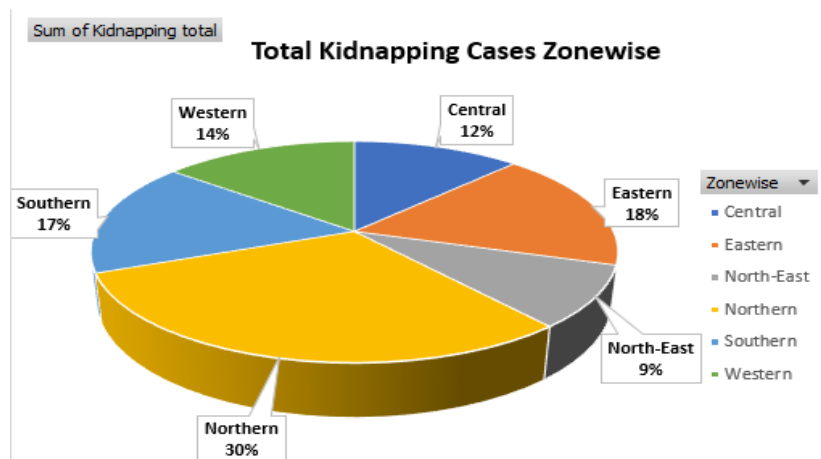
Analysis Of the Data

1)Data Visualization :-

PIE-DIAGRAM

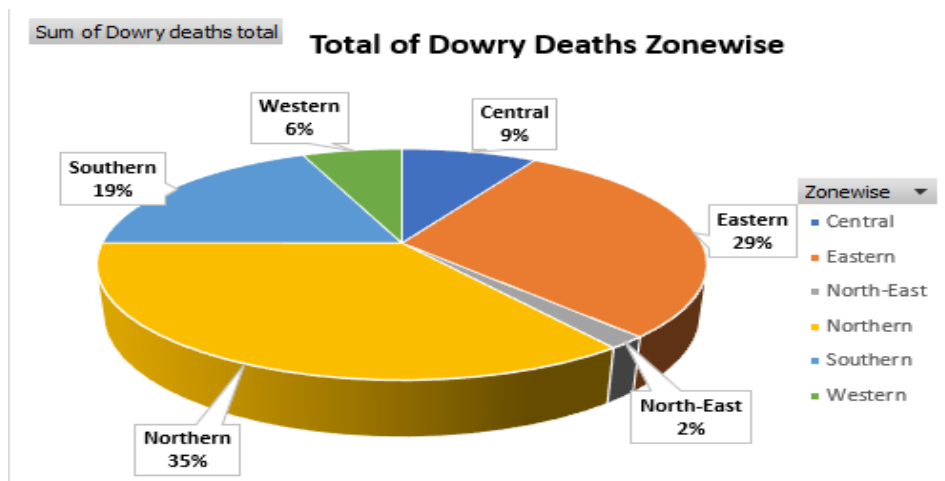### 1)An overview of Rape Cases in all zones :-
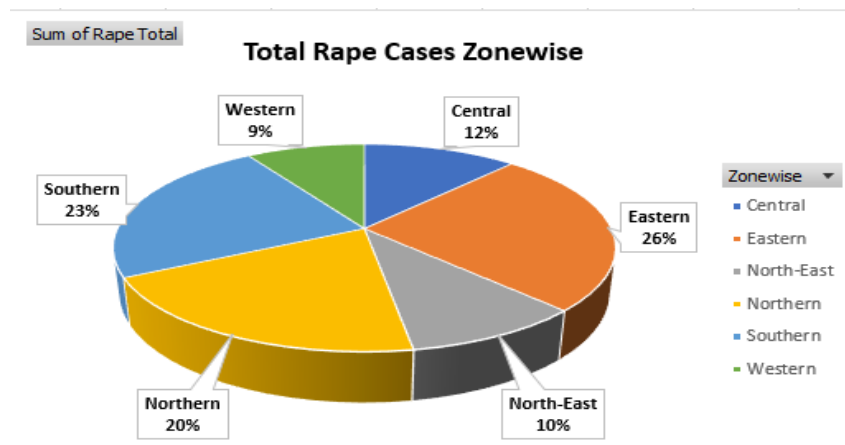
From the above pie diagram we can see that maximum rape cases have occurred in the **Eastern Zone (26%)** and minimum rape cases occurred in the **Western Zone (9%).**

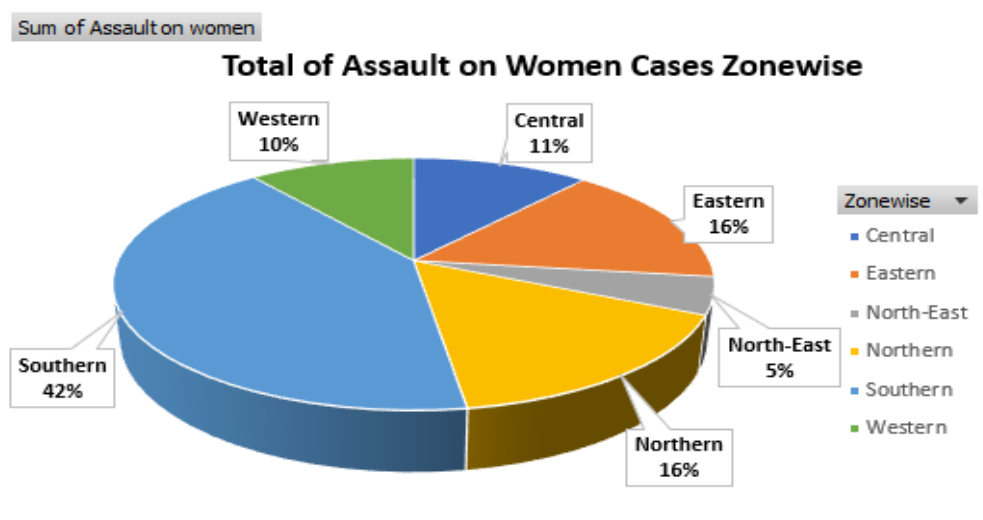### 2)An overview of Kidnapping cases in all zones :-

From the above pie diagram we can see that a large proportion of Kidnapping cases occurred in **Northern Zone (30%)** and minimum proportion of cases occurred in the **North-East Zone (9%).**

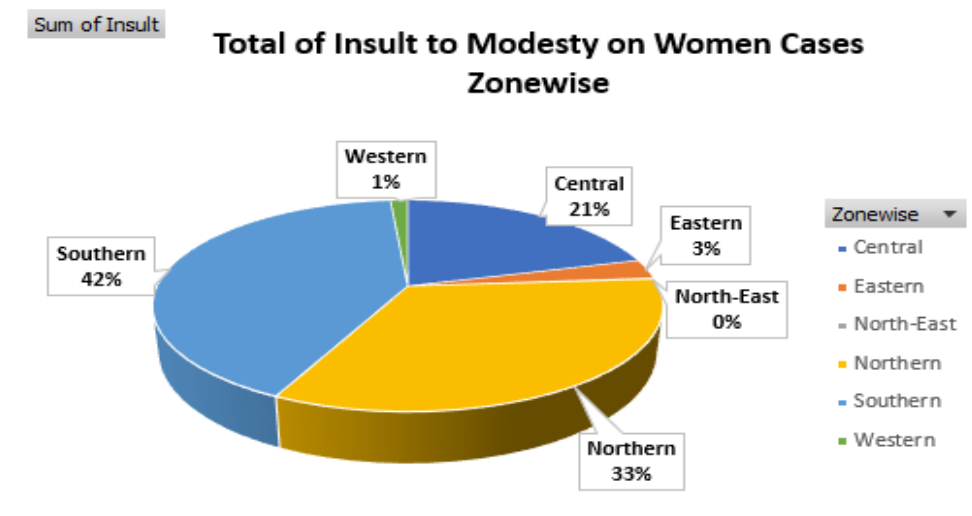## 3) An overview of Dowry Deaths cases in all zones :-

From the above pie diagram we can see that maximum of Dowry Deaths cases occurred in **Northern Zone (35%)** and minimum cases occurred in the **North-East Zone (2%).**

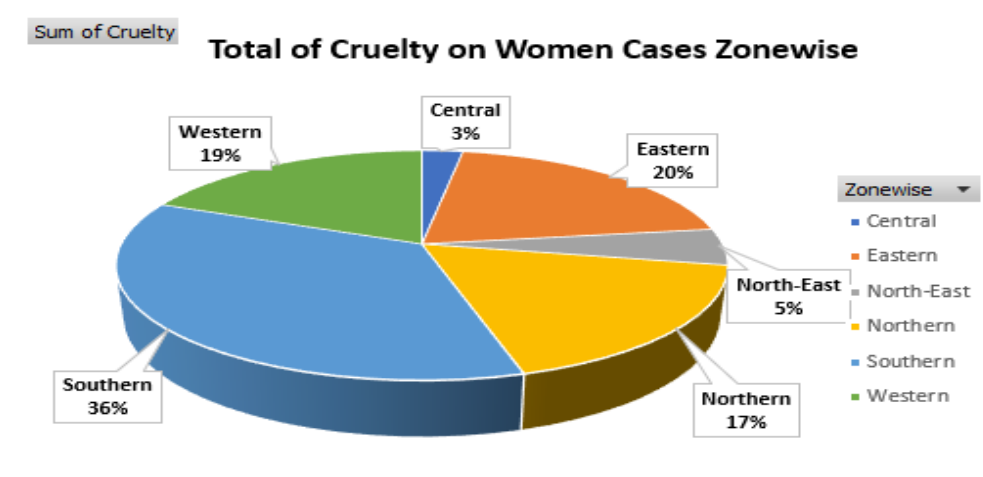## 4) An overview of Assault on women cases in all zones :-

From the above pie diagram we can see that maximum of Assault on women cases occurred in **Southern Zone (42%)** and minimum cases occurred in the **North-East Zone (5%).**

5)An overview of Insult to modesty on women cases in all zones:-

From the above pie diagram we can see that a very large proportion of Insult to modesty on women cases take place in **Southern Zone (42%)** and remarkably no Insult to modesty on women cases take place in **North-East Zone (0%).**

6)An overview of Cruelty on women cases in all zones:-

From the above pie diagram we can see that maximum of Cruelty on women cases occurred in **Southern Zone (36%)** and minimum cases occurred in the **Central Zone (3%).**

MULTIPLE BAR DIAGRAM

Multiple Bar Diagram of Crimes on Women Zonewise

■ Southern ■ Northern ■ Eastern ■ Western ■ North-East ■ Central
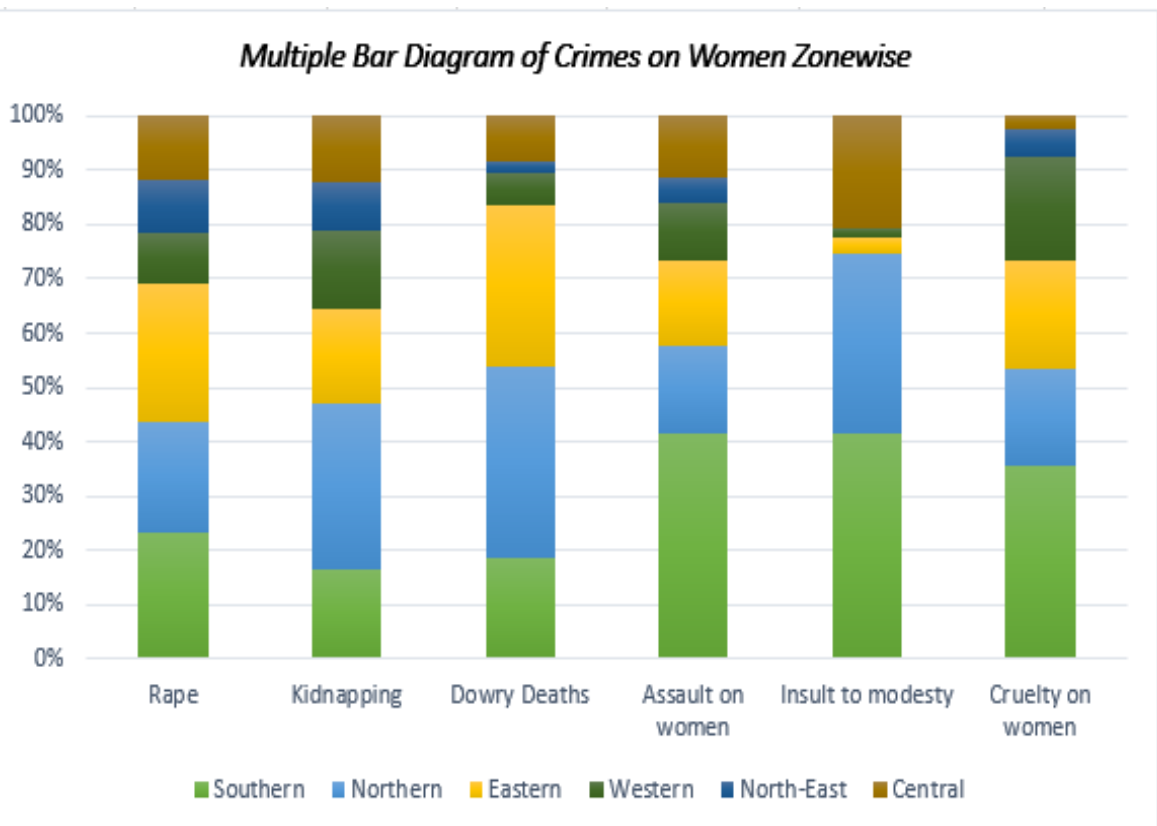
From the above Multiple Bar Diagram we see that –

- **Eastern zone** has more rape cases than any other zones.

- Kidnapping case is higher in **Northern zone**.

- Dowry Deaths case is also higher in the **Northern zone.**

- Assault on women cases are more in the **Southern zone.**

- Insult to modesty cases are also higher in the **Southern zone.**

- Cruelty on women cases are also higher in the **Southern zone**.

2) Test Of Independence & Effect Size:

Now we are interested to know does the different zones have impact on crimes against women in India ?

For this we are going to perform a **Pearson's chi-squared test** between the zones and the types of crimes (Rape, Kidnapping etc).

Pearson's chi-squared test:- Pearson's chi-squared test is used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in one or more categories of a contingency table. For contingency tables with smaller sample sizes, a Fisher's exact test is used instead.

Test Statistic of Chi-Square Test is :-

$$x_c^2 = \frac{\Sigma \, (O_i - E_i)^2}{E_i}$$

Where,

c = Degrees of freedom

O = Observed Value

E = Expected Value

The null and alternative hypothesis of Chi-Square test is given below:

The null hypothesis (H0) is that there is no association between the two variables.

The alternative hypothesis (H1) is that there is an association of any kind.

After performing the Pearson's Chi-Square Test between the zones and crimes against women we get the result as :-

Pearson's Chi-squared test

data: y
X-squared = 415002, df = 25, p-value < 2.2e-16

So, we can see that the p-value is less than 2.2e-16 , which is less than significance level

($\alpha = 0.05$), it means we reject the null hypothesis.

So there is an association between the zones and different types of crimes against women.

Now we will test whether the association between zones and crimes are strong or weak .

For this we are going to perform **Cramer'sV test** .

Cramer'sV Test :- In statistics and data analysis, Cramer's V is a vital measure for assessing the strength of association between two categorical variables. Originating from the chi-square statistic, this coefficient provides a normalized value between 0 and 1, where 0 indicates no association and 1 signifies a perfect relationship. Its significance extends beyond theoretical interest, offering practical applications in various research and data-driven decision-making contexts.

The Test Statistic of Cramer'sV is :-

Cramer's V = $\sqrt{(X^2/n) / \min(c-1, r-1)}$

where:

- X^2: The Chi-square statistic
- n: Total sample size
- r: Number of rows
- c: Number of columns

After calculating the Cramer'sV test we get the value as 0.46553

It clearly indicates that there is moderately strong association is present between the zones and types of crimes against women.

3) Residual Analysis :-

Let's visualize Pearson residuals by correlation plot of the residuals :-

The figures inside the circle represent the amount of residuals when we perform linear regression between the row variables and the column variables.

1)Positive residuals are in blue. Positive values in cells specify an attraction (positive association) between the corresponding row and column variables.

2)Negative residuals are in red. This implies a repulsion (negative association) between the corresponding row and column variables.

From the above plot we clearly see that-

- There is **very strong positive association** between **Southern region** and assault on women cases and **high negative association** between **Southern region** and kidnapping case.

- **Northern region** has strong **positive association** with insult to modesty of women cases and **high negative association** with cruelty on women cases .

- **Eastern region** has **very strong positive association** with rape cases and **high negative association** with assault on women cases.

- **Western region** has **very strong association** with cruelty on women cases and **high negative association** with insult to modesty of women cases.

- **North-East region** has **very strong association** with rape cases and **high negative association** with insult to modesty of women cases.

- **Central region** has **very strong association** with insult to modesty of women cases and **high negative association** with cruelty on women cases .

4) Trend analysis:

Profile Analysis of Rape Cases, Dowry Deaths, Cruelty on Women Cases

As per the psycho analysis Rape , Dowry, Cruelty are the most triggering infliction to womenhood. These crimes against women hampers the dignity of the women in the society. Rape which is a heinous crime , can have several and dangerous consequences such as physical & mental harm, mental distress, severe depression etc. Same thing can happen for Dowry and cruelty on women.Rape cases, dowry deaths, and cruelty against women represent deeply entrenched issues in India, posing significant dangers to individuals and society as a whole. Beyond being grave violations of human rights, these crimes inflict profound physical, emotional, and psychological harm on victims, often leaving lasting scars. They are symptomatic of a broader societal problem rooted in patriarchal attitudes that perpetuate gender inequality and view women as objects to be controlled or exploited. Moreover, the culture of silence and shame surrounding these crimes discourages victims from seeking justice, perpetuating impunity for perpetrators. Despite legal frameworks in place, challenges in implementation and enforcement persist, further exacerbating the problem. The prevalence of such violence not only creates an atmosphere of fear and insecurity for women and girls but also tarnishes India's international reputation.

Here I have shown the trend or pattern of the crimes like rape cases , dowry deaths and cruelty on women over the years 2001 to 2010 in all the 6 regions.

1)Rape Cases:-


Total Rape Cases in All Zones over 2001-2010
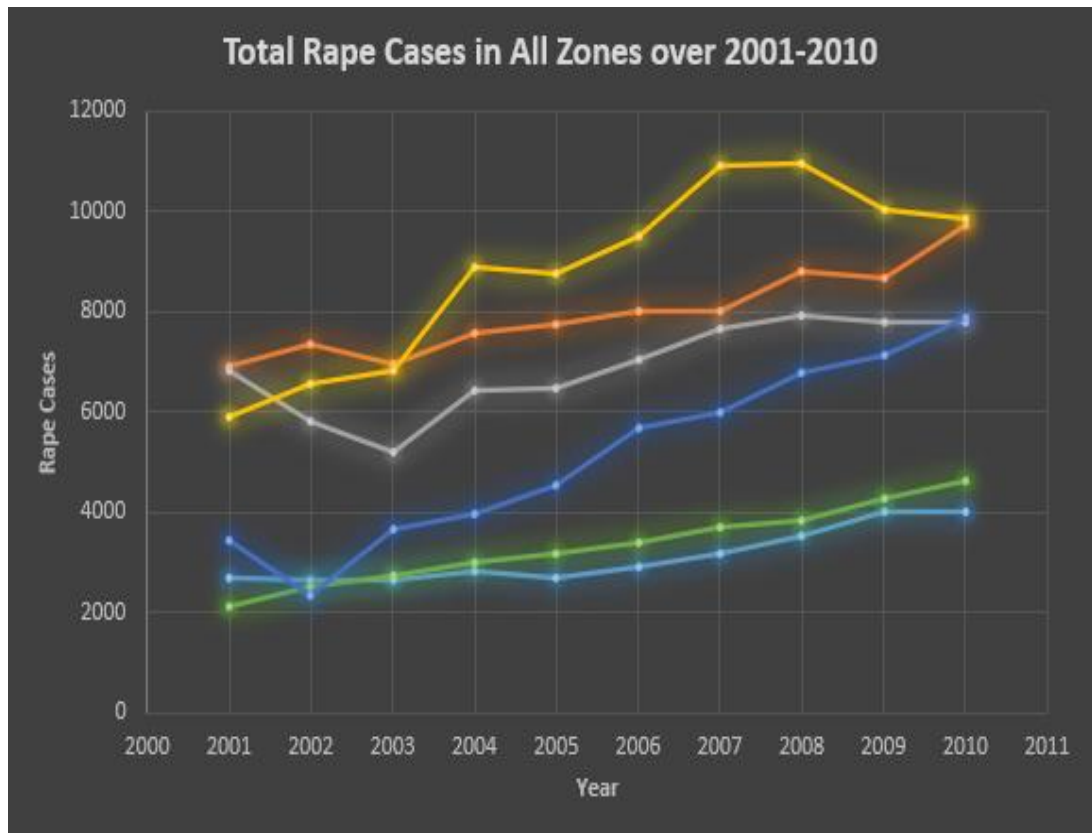
- ***Profile Analysis :-*** Over the years number of rape cases reported increased all over the zones. More specifically the increase rate is similar for each of the zone. Pathetically Northern region exhibits sharp hike within 2006 to 2010 and more specifically the North-East zone shows lower trend of rape against women .

2)Dowry Deaths :-

Total Dowry Deaths Cases in All Zones over 2001-2010
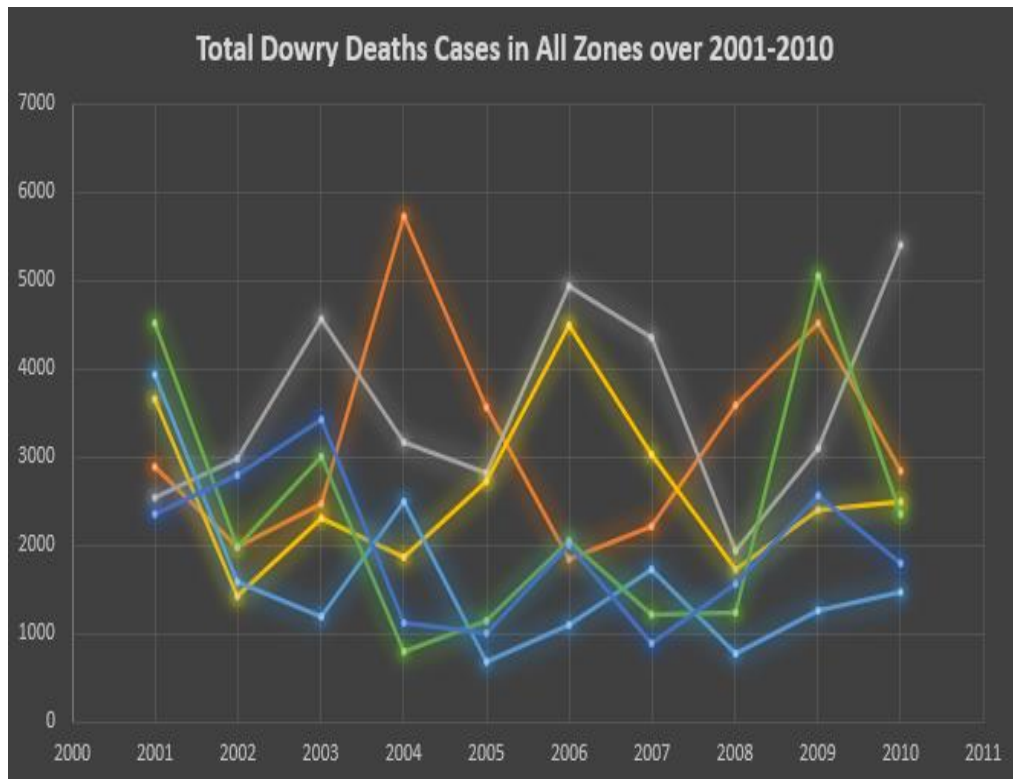
- ***Profile Analysis :-*** In Dowry Deaths Cases the lines for different zones are criss-crossing and the peak and the drop of each graph do not match each other. Alarmingly in North-East region dowry deaths shows a sharp increasing after 2009, while for other zone such deaths are lowering.

• *Cruelty on Women Cases :-*

Total Cruelty on Women Cases in all zones over 2001 - 2010
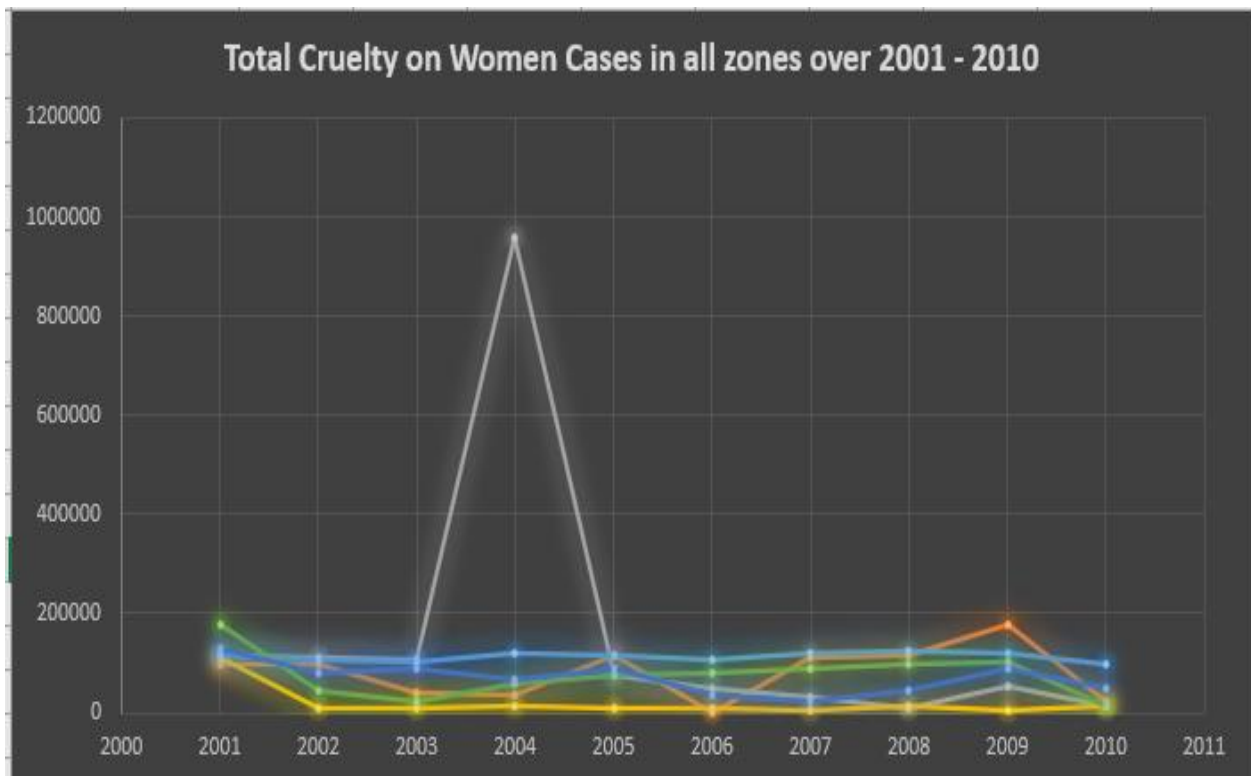
- • *Profile Analysis :-* On 2004 , the total cases of cruelty on women shows an outlier. Overall total cruelty on women from 2001 to 2010 for other regions remains same.

Next for our analysis , we are interested to know does really zones or regions have any impact on the crimes like Rape Cases , Dowry Deaths etc ?

Ans :- To get the answer of this question we have to perform **Pearson's chi-squared test** between the zones and the Rape Cases and the Dowry Deaths Cases respectively.

- • *Rape Cases :-*

The null and alternative hypothesis of Chi-Square test is given below :-

The null hypothesis (H0) is that there is no association between the zones and rape cases.

The alternative hypothesis (H1) is that there is an association between the zones and the rape cases.

After performing the **Pearson's chi-squared test** between the zones and the Rape Cases we   get the results as –

```
> y1<-chisq.test(y)
> y1

        Chi-squared test for given probabilities

data:  y
X-squared = 91343, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the rape cases.

To find out how strong or weak the association is we are performing *Cramer'sV test.*

After calculating the *Cramer'sV test statistic* we get the value as **0.4963187**, which indicates that there is a very strong association present between the zones and the rape cases.

- ## *Dowry Deaths Cases:-*

The null and alternative hypothesis of Chi-Square test is given below :-

The null hypothesis (H0) is that there is no association between the zones and Dowry deaths cases.

The alternative hypothesis (H1) is that there is an association between the zones and the dowry deaths cases.

After performing the **Pearson's chi-squared test** between the zones and the Dowry Deaths Cases we get the results as –

```
> y3<-chisq.test(y2)
> y3

        Chi-squared test for given probabilities

data:  y2
X-squared = 78454, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the Dowry Deaths cases.

To find out how strong or weak the association is we are performing *Cramer'sV test.*

After calculating the *Cramer'sV test statistic* we get the value as **0.4599669**, which indicates that there is a very strong association present between the zones and the rape cases.

• *Kidnapping Cases :-*

The null and alternative hypothesis of Chi-Square test is given below :-

The null hypothesis (H0) is that there is no association between the zones and Kidnapping cases.

The alternative hypothesis (H1) is that there is an association between the zones and the Kidnapping cases.

After performing the **Pearson's chi-squared test** between the zones and the Kidnapping Cases we get the results as –

```
> y6<-chisq.test(y5)
> y6

        Chi-squared test for given probabilities

data:  y5
X-squared = 66573, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the Kidnapping cases

• *Assault on Women Cases :-*

The null and alternative hypothesis of Chi-Square test is given below :-

The null hypothesis (H0) is that there is no association between the zones and Assault on Women cases.

The alternative hypothesis (H1) is that there is an association between the zones and the Assault on Women cases.

After performing the **Pearson's chi-squared test** between the zones and the Assault on Women Cases we get the results as –

```
> y9<-chisq.test(y8)
> y9

        Chi-squared test for given probabilities

data:  y8
X-squared = 319221, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the Assault on Women cases.

• *Insult to modesty on Women :-*

The null and alternative hypothesis of Chi-Square test is given below:

The null hypothesis (H0) is that there is no association between the zones and Insult to modesty on Women cases.

The alternative hypothesis (H1) is that there is an association between the zones and the Insult to modesty on Women cases.

After performing the **Pearson's chi-squared test** between the zones and the Insult to modesty on Women cases we get the results as –

```
> y13<-chisq.test(y12)
> y13

        Chi-squared test for given probabilities

data:  y12
X-squared = 236365, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the Insult to modesty on Women cases.

• *Cruelty on Women Cases :-*

The null and alternative hypothesis of Chi-Square test is given below:

The null hypothesis (H0) is that there is no association between the zones and Cruelty on Women cases.

The alternative hypothesis (H1) is that there is an association between the zones and the Cruelty on Women cases.

After performing the **Pearson's chi-squared test** between the zones and the Cruelty on Women cases we get the results as –

```
> y16<-chisq.test(y15)
> y16

        Chi-squared test for given probabilities

data:  y15
X-squared = 551821, df = 5, p-value < 2.2e-16
```

So we can see the p-value is very less than the level of significance α (5%) , it means we reject the null hypothesis.

So we conclude that there is an association present between the zones and the Cruelty on Women cases.

After performing all the **Pearson's chi-squared test** between the zones and all the crimes respectively we come to the conclusion that each of the crimes have strong association with the regions.

CONCLUSION

Violence against women and girls is one of the most pervasive human rights violations in the world, affecting one in three women. Addressing and eradicating it requires more than just reacting to violence when it happens; it mandates proactive and innovative solutions.

A key to these solutions lies in investing in and empowering women's rights organizations. They possess the knowledge, tools, and determination to reshape societies to be safer, more inclusive

1. Increase funding to end violence against women and girls

Tragically, the safety of women and girls is not prioritized globally. In 2023, just 18.9% of all expressed funding needs for gender-based violence prevention and response were met. In comparison, 40% of all funding requirements were met—indicating that gender-based violence prevention and response programming remains disproportionately underfunded.

Governments can make a difference for women and girls impacted by crises by increasing funding for local women's rights organizations and investing in lifesaving programs, such as IRC Safe Spaces.

2. Keep girls in school

marriages, teenage pregnancy, or social norms that require girls to sacrifice their education in order to take on household responsibilities.

Barriers that prevent girls from pursuing an education must be addressed. With education Girls are less likely to finish schooling in crisis-affected contexts due to early comes greater safety, security, health and self-determination.

3. Women's economic empowerment

The economic marginalization of women diminishes freedoms and opportunities. It is accelerated by violence, crisis and displacement which create trauma, restrict women's movement, and adversely impact the ability of women to access the labor market and financial services.

4. Speak out

Governments must be held accountable in their commitments to gender equality. Transparency concerning the amount of aid directed towards the safety, resilience and wellbeing of girls—including those also facing discrimination on the basis of their age, sexuality or ethnicity—is a vital component in making the world safer for women and girls.

5. Right Against Being Stalked

The IPC's Section 354D allows for legal action to be taken against an offender who follows a woman, makes repeated attempts to get in touch with her to foster personal interaction despite obvious disinterest, or keeps tabs on how she uses the internet, email, or any other form of electronic communication.

6. Right Against Workplace Harassment

A woman has the right to report any form of sexual harassment at her place of employment under the Sexual Harassment of Women at Workplace Act. She has three months from the date of the act's passage to file a written complaint with an Internal Complaints Committee (ICC) at a branch office.

7. Right Against Domestic Violence

A woman who is a wife, or a woman who lives in a household with a man, such as a mother or sister, is protected under Section 498 of the Indian Constitution from domestic violence (including verbal, economic, emotional, and sexual abuse) committed by a husband, male live-in partner, or family members. The accused will receive a fine in addition to a period of non-bailable imprisonment that can last up to three years.

8. Right Against Dowry

According to the Dowry Prohibition Act of 1961, dowries cannot be given or accepted by brides, grooms, or their parents during, before, or after marriage. Any property or valuable security supplied or agreed to be granted by one party to the other, directly or indirectly, is defined as "dowry" under the Act, although it specifically excludes dower or mahr in the case of people to whom the Muslim Personal Law (Shariat) applies. If you provide, take, or assist someone else in giving or taking dowry, you will receive at least five years in prison and a fine of Rs.15,000 as punishment.