

Exploratory Data Analysis on “Crime against Women in India from year 2001– 2021”

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ABSTRACT:

The purpose of this study is to conduct a thorough exploratory data analysis on "Crime Against Women in India 2001–2021," looking into seven major categories of crimes: rape, abduction, dowry deaths, assaults on women intended to offend their modesty, insults to women's modesty, cruelty by husbands or his relatives, and the importation of girls. The study is also being extended to determine the rate of crime against women for the years 2020 and 2021, as well as calculating the correlation between the rate of crime and the charge sheet rate for the corresponding years 2020 and 2021. One of the most important societal problems in India is crime against women. In the twenty-first century, women's situation in traditional Indian society is abhorrent.

Despite the plethora of laws and penalties, instances of rape, murder, dowry deaths, human trafficking, kidnapping, and abductions targeting women are increasing. The actual scale of violence against Indian women surpasses what official statistics suggest, with many incidents either not classified as crimes, unreported, or lacking documentation. This paper endeavours to delve into the issue of crimes against women across the 28 major states in India, utilizing data from the National Crime Records Bureau and other sources spanning from 2001-02 to 2021-22. It is important to note that every sixteen minutes, a woman in India is raped, and every four minutes, a woman is subjected to abuse by her in-laws.

KEYWORDS: EDA Analysis, Crime against Women in India, Rate of Crime Vs Chargesheeting Rate, Violence, Correlation, Rape, Cruelty by husband and his relatives, Dowry Deaths, Kidnapping & Abduction, Importation & Sexual Harassment.

METHODOLOGY:

This study employs a mixed-method approach to analyse the various types of crimes committed against women in India. It relies on quantitative data sourced from Crime in India reports by the National Crime Records Bureau as the main reference point. This data is complemented by materials from governmental and non-governmental entities, along with published literature including books, journals, articles, and legal documents. Initially, the study aims to establish a conceptual framework for comprehending crimes against women and scholarly viewpoints on the matter. Additionally, it aims to dismantle historical perceptions of women's subordinate position in society and theoretically explore the correlation between crime and women, as well as the link between male dominance and violence against women, elucidating how the former perpetuates such violence.

MEANING OF CRIME / VIOLENCE AGAINST WOMEN

Direct or indirect physical or mental abuse of women is the semantic definition of "crime against women." Crimes against women are defined as those that target women exclusively and in which they are the only victims. It's equally critical to define the term "violence against women." Abuse, which encompasses any form of physical hostility or misbehaviour, is another name for violence. Domestic violence is defined as violence performed against family members, including parents, spouses, children, and servants. A variety of techniques, including biting, shoving, kicking, striking, restraining, and hurling things, can be used in domestic violence. Threats, emotional and sexual abuse, domineering or controlling behaviour, intimidation, stalking, passive-covert abuse, and economic abuse are all included in general.

Table 1: Descriptions of the Three Components of Crime against Women

Crime against Women	Descriptions
Sexual crimes	Rape, Attempt to commit Rape, Assault on women with intent to outrage her modesty and Insult to the modesty of women
Offence related to Dowry	Dowry Death, Cruelty by husband or his relatives, Dowry prohibition act and Protection of women from domestic violence
Other Crimes against women	Kidnapping and abduction, Immoral traffic and Importation of girls

The United Nations defined “Violence against Women” in 1993 in Declaration on the Elimination of Violence against Women. It defines it as any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life.

Result of Analysis for Total number of reported Crimes against Women in India from 2001 to 2021:

Total number of reported Crimes Against Women in India from 2001 to 2021	
Year	Total Number of Crimes
2001	261450
2002	262224
2003	262728
2004	287230
2005	287046
2006	308316
2007	349842
2008	373232
2009	389670
2010	410018
2011	438284
2012	465056
2013	591792
2014	634722
2015	415353
2016	434675
2017	417297
2018	429804
2019	440005
2020	405598
2021	445890
Total	8310232

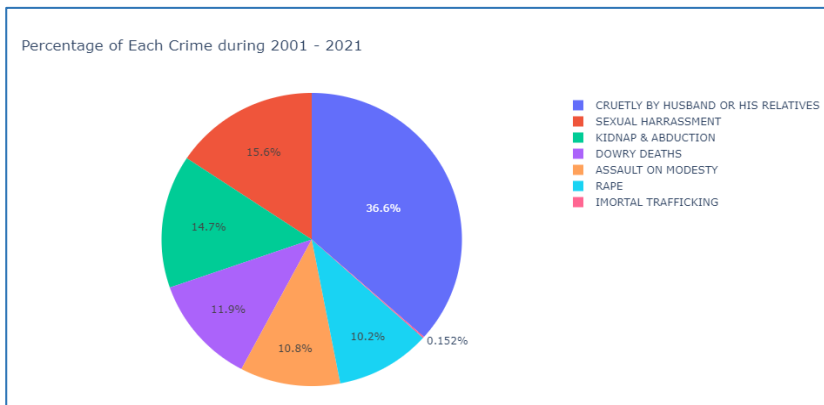


Figure 1: Pie Chart showing the percentage of Crime of each type during years 2001 to 2021

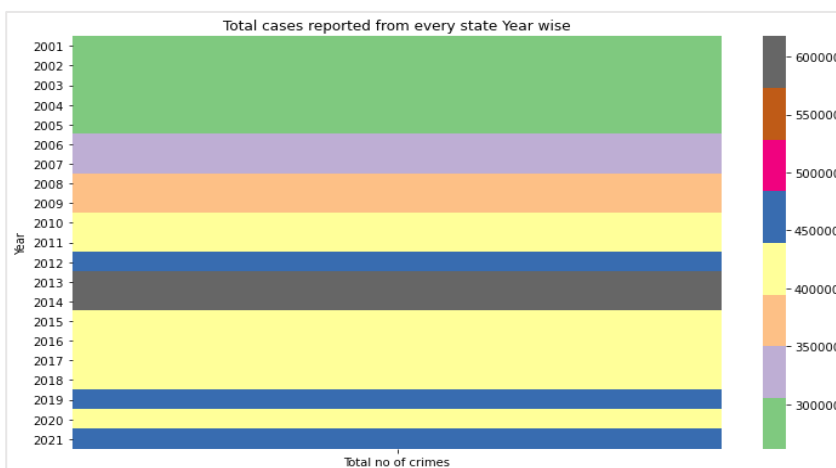


Figure2: Heat map for representing Total number of Crimes reported from every state year wise with different colours

This above analysis portrays a heartbreaking situation of women in our society, as around 8 million number of females, over the years 2001-2021, have been a victim of assault, violence, rape or even death, in India alone.

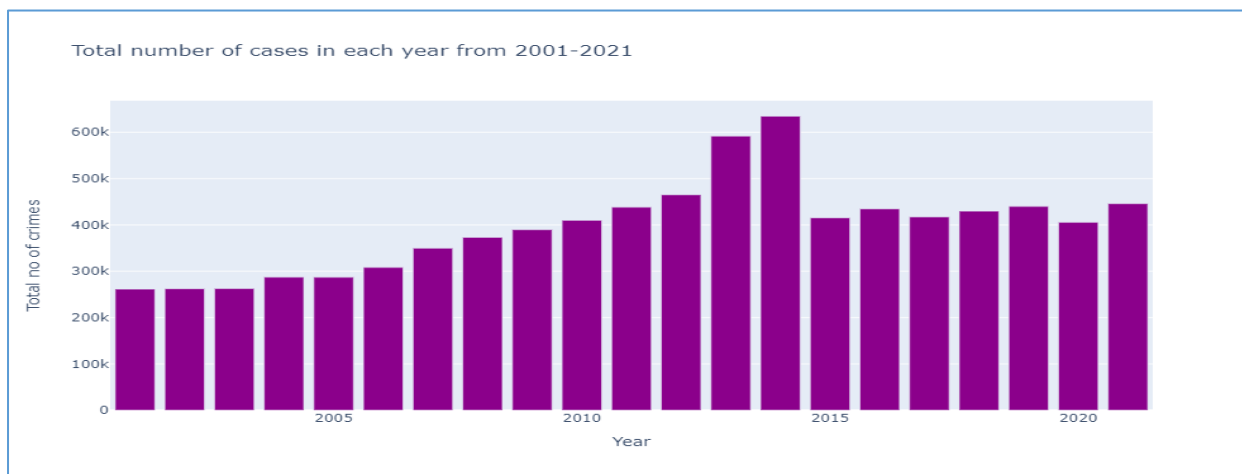


Figure 3: Bar graph of Total number of cases reported each year from 2001 to 2021

Analysis on total Number of Crimes of each category- Rape, Cruelty by husband and his relatives, Dowry Deaths, Kidnapping & Abduction, Importation & Sexual Harassment for years 2001- 2021:-

Year	Rape	Kidnap & Abduction	Dowry Deaths	Cruelty by Husband or His Relatives	Assault on Modesty	Sexual Harassment	Immortal Trafficking
2001	32150	29290	13702	98340	19492	68248	228
2002	32746	29012	13644	98474	20310	67886	152
2003	31694	26592	12416	101406	24650	65878	92
2004	36466	31156	14052	116242	20002	69134	178
2005	36718	31500	13574	116638	19968	68350	298
2006	38696	34828	15236	126256	19932	73234	134
2007	41474	40832	16186	151860	21900	77468	122
2008	42934	45878	16344	162688	24428	80826	134
2009	42794	51482	16766	179092	22018	77422	96
2010	44344	59590	16782	188082	19922	81226	72
2011	48412	71130	17236	198270	17140	85936	160
2012	49846	76524	16466	213054	18346	90702	118
2013	67414	103762	16166	237732	25178	141478	62
2014	73470	114622	16910	245754	19470	164470	26
2015	34651	59277	99135	113403	82422	24041	2424
2016	38947	64519	106527	110378	84746	27344	2214
2017	32559	66333	118866	104551	86001	7451	1536
2018	33356	72751	122877	103272	89097	6992	1459
2019	32033	72780	113403	125298	88367	6939	1185
2020	28046	62300	110378	111549	85392	7065	868
2021	31677	75369	104551	136234	89200	7788	1071

The following bar graphs shows the analysis of number of crimes for each category from 2001-2021

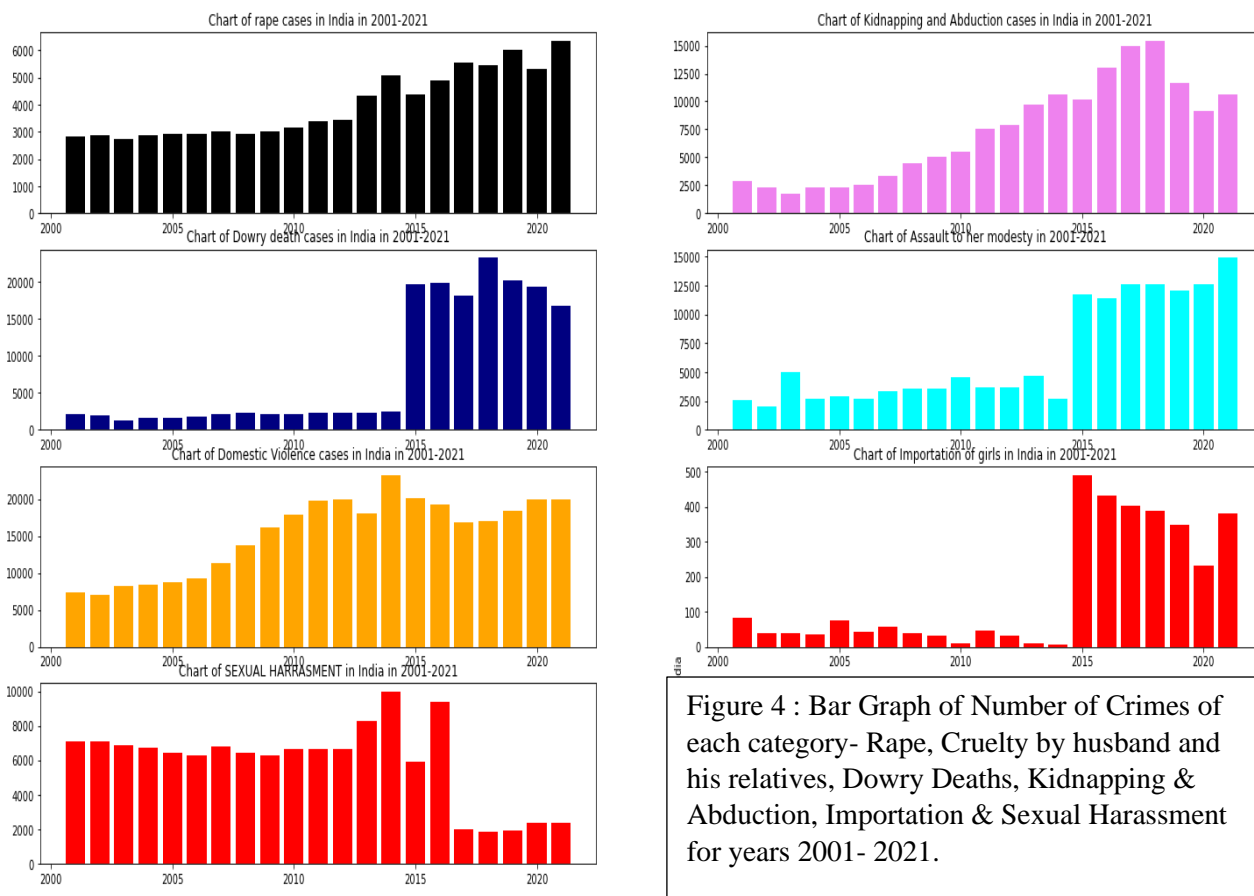


Figure 4 : Bar Graph of Number of Crimes of each category- Rape, Cruelty by husband and his relatives, Dowry Deaths, Kidnapping & Abduction, Importation & Sexual Harassment for years 2001- 2021.

According to Press Information Bureau (PIB, New Delhi) on February 11, 2022, the majority of crimes against women in 2022 involved the violation of the women's right to dignity, and the National Commission for Women (NCW) obtained the most complaints in 2022 compared to any other year since 2014. In a written response to the Lok Sabha, Smt. Smriti Zubin Irani, the Minister of Women and Child Development, stated that the women's panel had received 33,906 complaints in 2014, with approximately 31000 complaints of crimes against women being the highest since 2014.

Analysis on Rate of Total Crime against women Vs Charge sheeting Rate for years 2020 and 2021:

Sr. No.	State/UT	Rate of Total Crime against Women (2020)	Charge sheeting Rate (2020)	Rate of Total Crime against Women (2021)	Charge sheeting Rate (2021)
1	Andhra Pradesh	65	91.6	67.2	93.5
2	Arunachal Pradesh	38	72.5	49.1	77.6
3	Assam	154.3	63.8	168.3	52.9
4	Bihar	26.3	79.7	30.2	69.4
5	Chhattisgarh	50.7	87.7	49.8	88.5
6	Goa	28.5	76.5	28.9	77.4
7	Gujarat	24.4	94.6	22.1	93.3
8	Haryana	94.7	57.9	119.7	57.1
9	Himachal Pradesh	44.5	78.9	43.8	76.5
10	Jharkhand	41	78.8	43	79.7
11	Karnataka	38.7	84.7	43.8	87.2
12	Kerala	55.1	94.1	73.3	94.6
13	Madhya Pradesh	63.3	83.8	74.7	83.7
14	Maharashtra	53.8	82	66	82.4
15	Manipur	15.8	56.1	19.1	48.4
16	Meghalaya	34.9	66	41.7	76.1
17	Mizoram	28.8	98.8	29.1	94.9
18	Nagaland	3.7	67.6	5.1	80.4
19	Odisha	112.9	82	137.8	80.1
20	Punjab	33.8	77	39.2	75.3
21	Rajasthan	90.5	55	105.4	54.5
22	Sikkim	44.2	91.4	40.6	98.3
23	Tamil Nadu	17.4	86.5	22.2	87.5
24	Telangana	95.4	90.1	111.2	87.8
25	Tripura	44	82.5	40.2	84.7
26	Uttar Pradesh	45.1	77.1	50.5	76.5
27	Uttarakhand	51.6	79.9	61.5	81.5
28	West Bengal	76.2	88.2	74.6	93.7
	Total State(S)	55.9	78.7	63.3	77.3
1	A & N Islands	76.1	97.4	89.4	97.1
2	Chandigarh	54.8	64.2	61.7	51
3	D&n Haveli and Daman & Diu	16.3	96.6	25.3	74
4	Delhi UT	106.4	75	147.6	71.2
5	Jammu & Kashmir	53.7	75.1	61.6	72.5
6	Lakshadweep	45.5	100	27.3	80
7	Puducherry	14	100	18.5	97.6
	Total UT(S)	79	75.3	104.5	71.6
	Total All India	56.5	78.6	64.5	77.1

Comparison of Rate of Crime against women in years 2020 and 2021

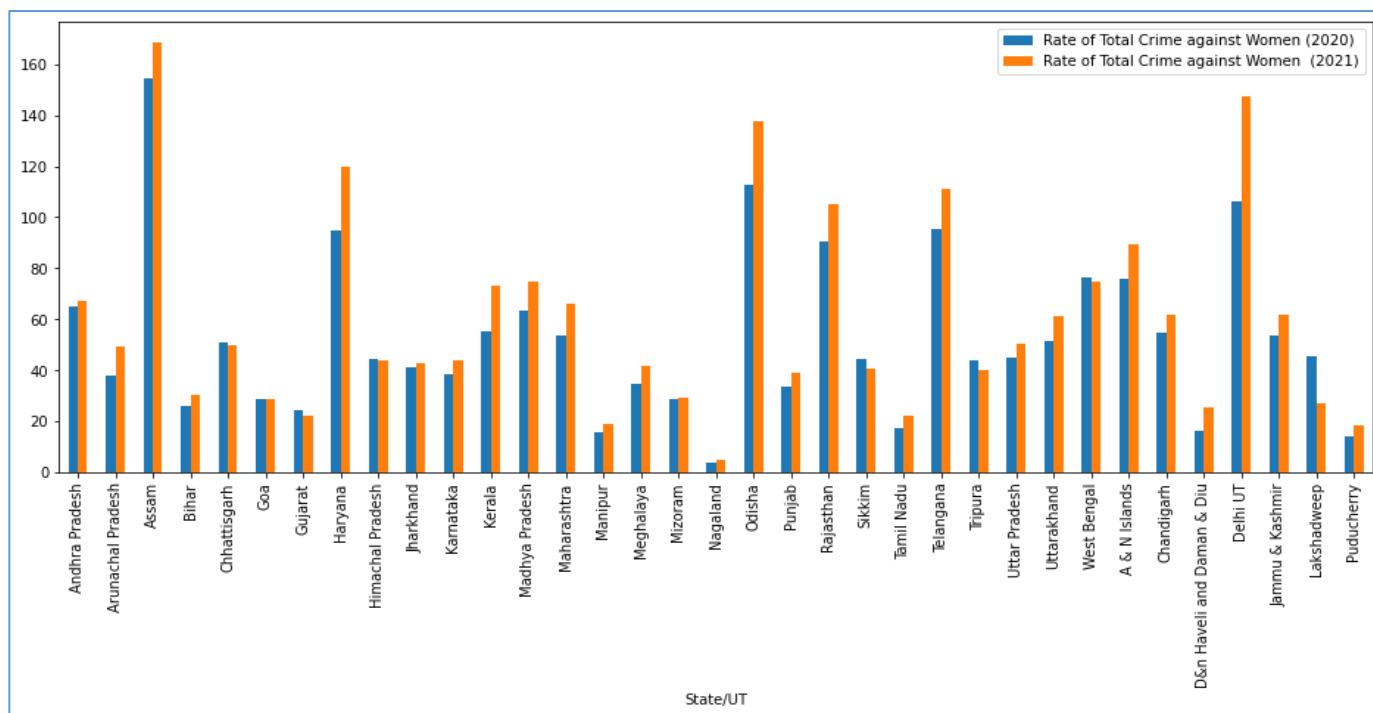


Figure 5: Multiple Bar graph showing Rate of Crime against women in year 2020 and 2021.

From the above graph, it is observed that the rate of crime is increased in 2021 compared to 2020 for almost every state in India.

Chargesheet Rate Vs Total Crime against Women

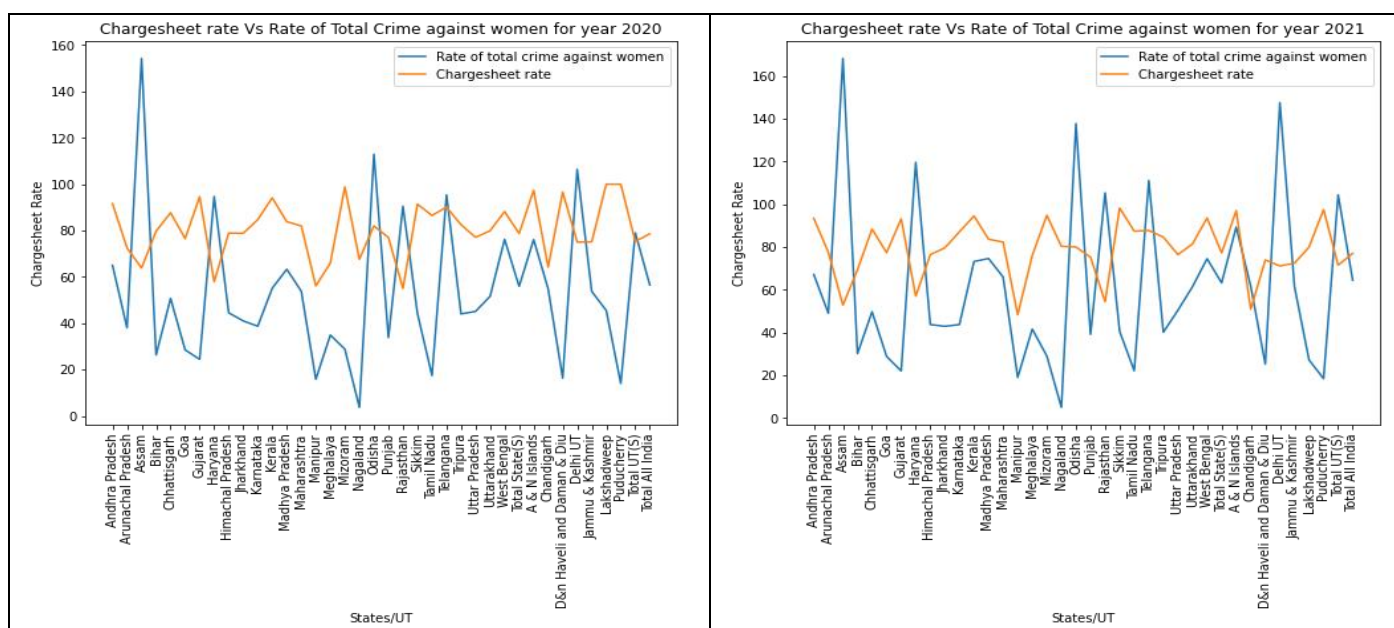


Figure 6: Correlation graph showing the relationship between Chargesheet rate Vs Rate of Crime against women for year 2020 and 2021

It is observed that there is negative correlation between Rate of crime and Rate of Charge sheet ; as Rate of Total Crime against women is increasing , the charge sheeting rate is decreasing. It implies that we still face the challenges to address the issues related to crime against women– domestic or public, many reported and a lot many unreported due to society concerns and on the name of adjustments, sacrifices or compromises that Indian women is doing since ages.

Conclusion and Inferences:

The main aim of the project was to analyse the situation of women in the year 2001-2021.

The dataset is collected from various sources as per the availability of data like Indian government websites like NCRB, <https://data.gov.in> and kaggle.com and deep analysis is done in python dataframes through charts and following inferences are made :-

- 1) More than 8 million females have been a victim of some or other type of Violence, based on their gender, varying from rape to importing them for business.
- 2) It is concluded from the series of bar graphs that 2014 was the year, when crimes were reported the highest under each category. The same has been reported in *NCRB Report: Crime Against Women*
- 3) Top 6 states, where the maximum number of cases has been reported in TOTAL in the span of 2001-2021, each category-wise:

State/UT	Rape	Kidnap & Abduction	Dowry Deaths	Domestic Violence	Assault On Modesty	Sexual Harassment	Immortal Trafficking	Total Cases
Uttar Pradesh	71269	201809	123759	259931	110629	106765	188	874350
West Bengal	53424	82321	149604	434297	25271	69482	703	815102
Andhra Pradesh	39499	38959	81793	328964	120421	139731	903	750270
Rajasthan	66641	88459	108085	332588	29415	84621	344	710153
Madhya Pradesh	118306	75289	57893	146929	81890	203893	447	684647
Maharashtra	63739	61706	61924	229958	86595	126603	1290	631815

4) When compared Rate of Crime against women for year 2020 vs Rate of Crime against women for year 2021 - It is observed there is increase in Rate of crime for every state.

5) When the relation between "Rate of Total Crime against Women" and the "Chargesheeting Rate" for years 2020 & 2021 is found using statistical analysis and it is observed that there is negative correlation between Rate of total crime and Charge sheeting rate which indicates that as the total crime rate against women increases, the charge sheeting rate tends to decrease.

6) It implies that in regions with higher crime rates, there might be challenges in effectively addressing and resolving cases related to Crime against Women.

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