

Crime against Women in India: An Empirical Discussion

Deepshikha

Assistant Professor, Department of Geography, Tika Ram Girls College, Sonipat, Haryana

ABSTRACT

Crime against women is a major societal issue in India. Crimes against women show a concerning increasing pattern in India, which is higher than in many other countries. This present paper attempts to analyze the spatio-temporal distribution of crimes against women in India (1991-2020) and forecast the crime rate of the decade (2021-2030). The analysis shows that crimes against women in India have risen more than doubled in the last three decades. The prediction model indicates a further rise in crimes against women. Patriarchal society, societal norms, women empowerment, and education of women have an impact on crimes against women. It was also found that in more than 80 percent of rape incidences, the offender was known to the victim. The government across the world, and especially India, should deal with crimes against women as their critical priority.

Keywords: Crimes against women, Women empowerment, Forecasting, ARIMA, India.

INTRODUCTION

Crime against women is a worldwide phenomenon. It is a significant problem that a woman faces throughout her lifespan. Crimes against women may range from simple stalking to rape and murder. The impact of crimes against women is profound on society. According to the World Health Organization, violence against women is a foremost public and clinical health problem and abuse of women's human rights. Violence against women is defined as any act of gender-based violence that causes physical, sexual, or psychological damage or suffering to women, including threats of such acts, constraints, or arbitrary deprivation of liberty, whether in private or public life (World Health Organization, 2021a).

Globally, one in three women experience physical or sexual violence in their lifetime, mainly by an intimate partner. It is a reminder of the scale of gender inequality and discrimination against women. Gender disparities are based on and perpetuated by an intimate partner and account for most of this violence. 33 percent of women in South Asia have experienced intimate partner violence in their lifetime. In India it is even high as 35 percent, which is among the highest in the world (World Health Organization, 2021b). A study based on National Family Health Survey found that a third (27%) of ever-married women had experience some short of violence in their lifetime (Ahmad et al., 2021).

Several studies were conducted in India on various aspects of crimes against women. For example, Wani et al. (2021) study the socio-economic indicators, religious diversification, literacy and their relationship with crime against women in Jammu & Kashmir. Vicente et al. (2020) study dowry death between 2001-2014 in Uttar Pradesh. Kumar et al. (2018) forecasting crime rate of India with ARIMA model. Rajeshwari and Preeti (2020) show the correlation between socio-economic characteristics, caste, age, educational qualification, living space and crimes against women in Haryana. Borah et al. (2017) analyze the crime against women in Brahmaputra valley and shows that crime against women is negatively correlated with female literacy and sex ratio. Researchers have also suggested reducing the crime rate against women in India.

Apatinga et al. (2021) highlight that victim suffered bodily injuries, psychological issues, sexual and reproductive health, and suicidal tendencies due to sexual violence and abuse. Sexual assault directly impacts women's economic freedom and income. For nearly two years world has been facing unprecedented difficulty because of COVID-19. During the lockdown,

reporting of family violence incidences is also reduced (Campbell, 2021). In this scenario, COVID-19 enlarged and introduced mental health challenges that cause more problems in women's lives. There are no mental health services specialized to domestic abuse victims. Reporting of crimes against women also goes unreported (Su et al., 2021).

Many other studies of crimes against women and intimate partner violence in India have scrutinized the socio-demographic and psychological aspects of crimes. In the present context, different studies suggest unemployment, illiterate, less workforce participation (Kumar & Kuncharam, 2020), caste factor (Rajeshwari & Preeti, 2020), age factor, attitude, alcohol, other relationships (Abramsky et al., 2011) and late action and reluctance to launch FIR (Ministry of Women and Child Development, 2017) are the major risk factors of crime against women.

This study is significant in the way that it analyzes the pattern and determinants of crimes against women in India over the last 30 years and uses appropriate models to project the crime rate for the next decade. These findings will be helpful in further research, and it was hoped that these findings might be relevant for healthcare planning and crime prevention measures.

Database:

This study is based on secondary data. Statistics of crimes against women have been collected from National Crime Record Bureau (NCRB) reports on Crime in India, which are freely available in NCRB archives. However, it should be noted that data from 1991 to 2000 is only accessible with the total number of crimes, and socio-demographic data were added in subsequent years with the addition of new and different characteristics from time to time. So, for forecasting purposes, the current study considers data from 1991 to 2020, while extensive demographic data on various features, such as age groups and the victim's relation to the offender, was evaluated from 2001 onwards. Population statistics have been taken from population projection reports of the census of India.

METHODOLOGY

This paper consists of three major parts, i.e., the first deals with the decadal trend of crimes and crime rates. The crime rate of individual crimes against women is calculated per lakh of the female population. For mapping, Geoda software is used. The second section explores the prediction of the crime rate for the next decade using the Time Series Modeler in SPSS. Time Series Modeler is the most advanced method used to create a model for time series data. Time Series Modeler contains an Expert Modeler that determines the best-fit model for data series (IBM, 2012). The Expert Modeler has been used in our study because of its simple structure, immediate applicability, and capacity to explain the data set. An expert modeler is the best method to determine the forecasts because it automatically considers all other models. The final section includes the major findings and conceptualizes previous observations and evidence to highlight the socio-cultural implications.

RESULTS

Table 1 shows the distribution of different crime variables against women in India, viz., crimes, age group wise victims of rape, relationship with the rapist of the victim, age, and its average decadal trend over the last two decades. It can be observed that the incidences of crimes against women have been increasing throughout the past three decades. However, in the decade 2011–2020, crimes against women nearly doubled compared to the decade 2001–2010. The highest average decadal growth in the number of incidences happened in kidnapping and abduction cases, which increased by 205.65% during 2011–2020. Cases under the Dowry Prohibition Act and Molestation also show an increase in average decadal incidences with 144.24% and 107.58%, respectively.

Table 1. Distribution of different variables along with the average decadal trend of crimes against women

Variables	Decade			% Change in Decadal Average
	1991-2000	2001-2010	2011-2020	
Crimes				
All India	1093607	170528.2	330223.7	93.65
Rape		19000.8(11.14%)	31916.3 (9.66%)	67.97
Attempt to Commit Rape			3033.1 (0.91%)	
Kidnapping and Abduction		19008(11.15%)	58097.8 (17.59%)	205.65
Dowry Deaths		7435.1(4.36%)	7735.7 (2.34%)	4.04
Molestation		36483.6(21.4%)	75731.8 (22.93%)	107.58
Sexual Harassment		10631.1(6.23%)	8450.4 (2.55%)	-20.51
Cruelty by Husband and Relatives		66953.9(39.28%)	111585.6 (33.79%)	66.66
Immoral Traffic Act		5294.5(3.1%)	1933.4 (0.58%)	-63.48
Ind. Rep. of Women Act		1442.5(0.84%)	116.3 (0.03%)	-91.94
Dowry Prohibition Act		4203.2(2.46%)	10267.1 (3.1%)	144.27
Abetment of Suicides of Women			4966.8 (1.5%)	
Protection of Children from Sexual Violence Act (Girl Child)			40649.5 (12.3%)	
Age-Group-Wise Victims of Rape				
18 and below 18		4575.8(24.06%)	9969.1(30.96%)	117.87
18 - 30 years		11179.2(58.79%)	16320.8(50.68%)	45.99
30 and above		3260.4(17.14%)	5908.6(18.35%)	81.22
Total		19015.4(100%)	32198.5(100%)	69.33
Relationship with the Rapist				
Family members		1545.8(9.17%)	2892.7(9.65%)	87.13
Family Friends/ Neighbours/ Employer or Other Known		5823.9(34.57%)	13148.5(43.89%)	125.77
Other Known Persons		9475.5(49.86%)	14015(46.78%)	47.91
Cases in Which Offenders Known to Victim		16845.2(88.65%)	29956.2(93.85%)	67.97

Source: Calculated by researcher from Crimes in India Reports, NCRB

Note. Ind.Rep.= Indecent Representation; Abetment of Suicides of women, Protection of children from sexual violence act data was available from 2016, 2017 onwards respectively.

Table 2. The trend of Crime rates in different states /UTs of India over the last two decades

State/UT	Average Decadal Crime Rate		% Change in Average Decadal Crime Rate
	(2001-10)	(2011-2020)	
A & N Islands	24.54	49.61	102.16
Andhra Pradesh	54.26	66.53	22.61
Arunachal Pradesh	30.18	47.09	56.05
Assam	49.85	132.38	165.56
Bihar	16.44	27.49	67.19
Chandigarh	38.62	62.12	60.83
Chhattisgarh	38.40	48.98	27.58
D & N Haveli	19.61	13.50	-31.15
Daman & Diu	13.01	20.48	57.42
Delhi	52.82	133.06	151.92
Goa	15.82	38.29	142.00
Gujarat	26.71	30.33	13.55
Haryana	42.73	79.76	86.65
Himachal Pradesh	28.07	38.84	38.34
Jammu & Kashmir	43.94	54.14	23.21
Jharkhand	19.70	36.44	84.99
Karnataka	23.82	40.86	71.52
Kerala	41.75	59.55	42.61
Lakshadweep	5.37	29.62	451.00
Madhya Pradesh	48.04	65.67	36.71
Maharashtra	27.36	49.37	80.42
Manipur	14.44	20.16	39.60
Meghalaya	12.23	28.97	136.81
Mizoram	30.07	36.88	22.65
Nagaland	3.55	6.01	69.02
Odisha	34.22	81.23	137.37
Puducherry	23.89	13.61	-43.03
Punjab	19.93	34.92	75.20
Rajasthan	46.54	80.76	73.52
Sikkim	16.12	37.15	130.41
Tamil Nadu	25.25	17.47	-30.81
Tripura	57.69	65.79	14.03
Uttar Pradesh	21.28	41.09	93.08
Uttarakhand	21.84	34.88	59.71
West Bengal	34.80	70.49	102.59
Total (All -India)	30.54	53.4	22.61

Source: Calculated by researcher from Crimes in India Reports, NCRB

At the same time, the cases of crimes under the crime head of Indecent Representation of Women Act and Immoral Traffic Act show a decrease in average decadal crime incidences by 91.94% and 63.48%, respectively.

Sexual harassment cases also declined 20 percent during 2011-2020 compared to cases in 2001-2010. Cases under the Protection of Children from Sexual violence act also account significant incidences in the 2011-2020. It is important to note that one-third of the incidences in both the decades happened under the crime head of Cruelty by Husband and Relatives, which constituted 39.28% in 2001-2010 and 32.21% in 2011-2020. The second highest incidences reported under crime head of molestation constitute more than one-fifth of all crimes against women. Age-wise victims of rape, longitudinal trend (from 2001-2010 to 2011–2020) show an observable division within individuals committing crimes against women in three age groups: up to 18 years, 18 years to 30 years, and 30 years and above. The average number of decadal victims doubled during 2011-2020 compared to the 2001-2010 decade.

The age group of children shows the highest increase in the decadal average rape incidences during 2011-2020, which account for more than a 117.87% increase. This group is followed by the old age group, which also shows a significant

increase in crime incidences by 81.22 % during the 2011-2020 decade compared to the 2001-2010 decade. This highlights an alarming situation of rape incidences in India.

It is also noted that in the decade 2011-2020, in 93.85 % of cases of rape incidences offender was known to the victim as compared to 88.65% in 2001-2010. The highest increase in rape incidences was found in the Family Friends/ Neighbors/ Employer category, which registered an increase of 125.77 percent over the last decade. It is also very concerning that the second-highest increase in rape cases was found to be in family members known to the victim, which shows an 87.13 % increase in the decade 2011-2020.

Table 2 shows the crime rate trend in different states/UTs of India over the last two decades. Based on the trend pattern of crime rate, states of India were grouped into four categories viz. the first category with the slightest rise of crime rate, the second category with the moderate rise of crime rate; a third category crime rate increased highest and fourth category whose crime rate decreased during past two decades 2001-2010 and 2011-2020. Hence, we have focused on the states belonging to the third and fourth categories.

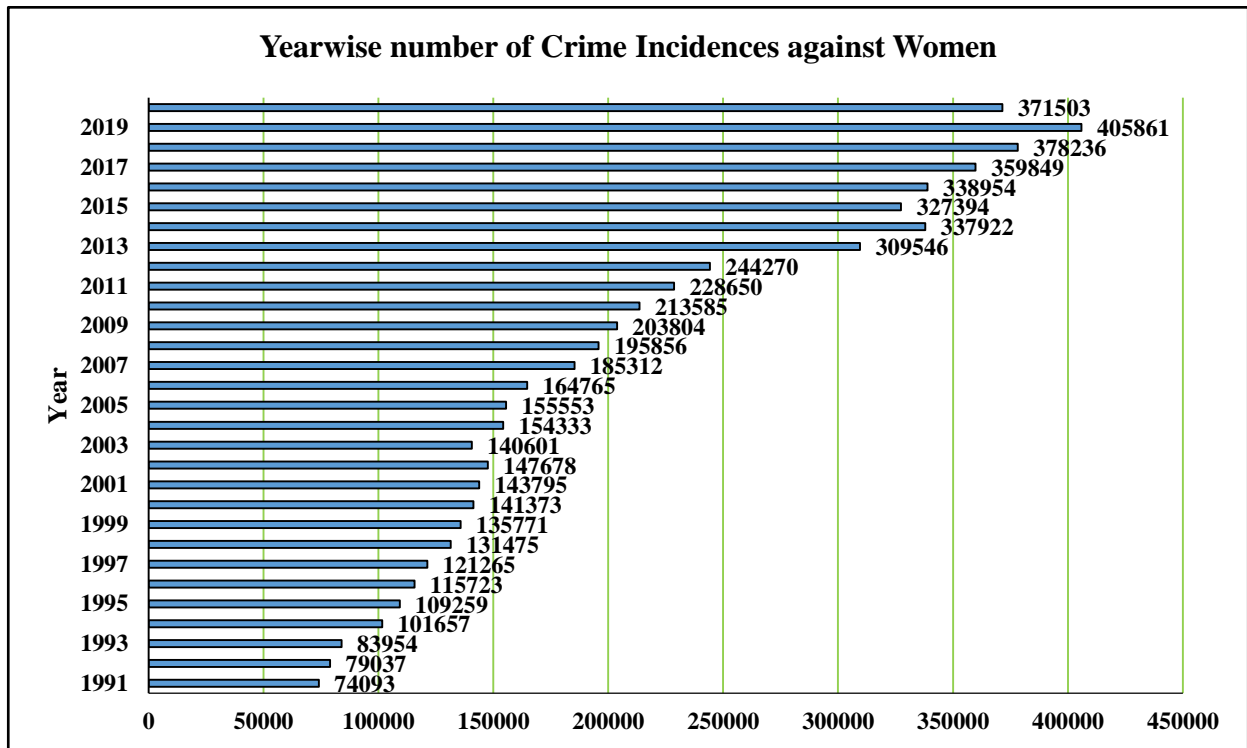


Fig. 1: Number of Crime Incidences against women (1991-2020)

States that belong to the third category are Lakshadweep, Assam, Delhi, Goa, Odisha, Meghalaya, Sikkim, West Bengal, A & N Islands, Uttar Pradesh and with an increased decadal growth rate of crime 451%, 165.56%, 151.92%, 142%, 137.37%, 136.81%, 130.41, 102.59%, 102.16%, and 93.08% respectively. States belonging to the fourth category were Tamil Nadu, Dadra and Nagar Haveli, and Pondicherry with a decreased decadal crime -30.81%, -31.15%, and -43.03%, respectively.

Figure 1 shows the total number of crime incidences that occurred from 1991 to 2020. The total number of incidences continuously increased from 1991 to 2019 except few breaks such as 2003, 2015, and 2020. Figure 2 shows the percentile distribution of total crime incidences for decades 2001-2010 and 2011-2020 in India. High crime incidence with more than 90 percentiles can be observed in some states in the north-central, eastern, and southeastern part of India for both 2001-2010 and 2011-2020 decades. The states like Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, and West Bengal have consistently high crime rates in both decades.

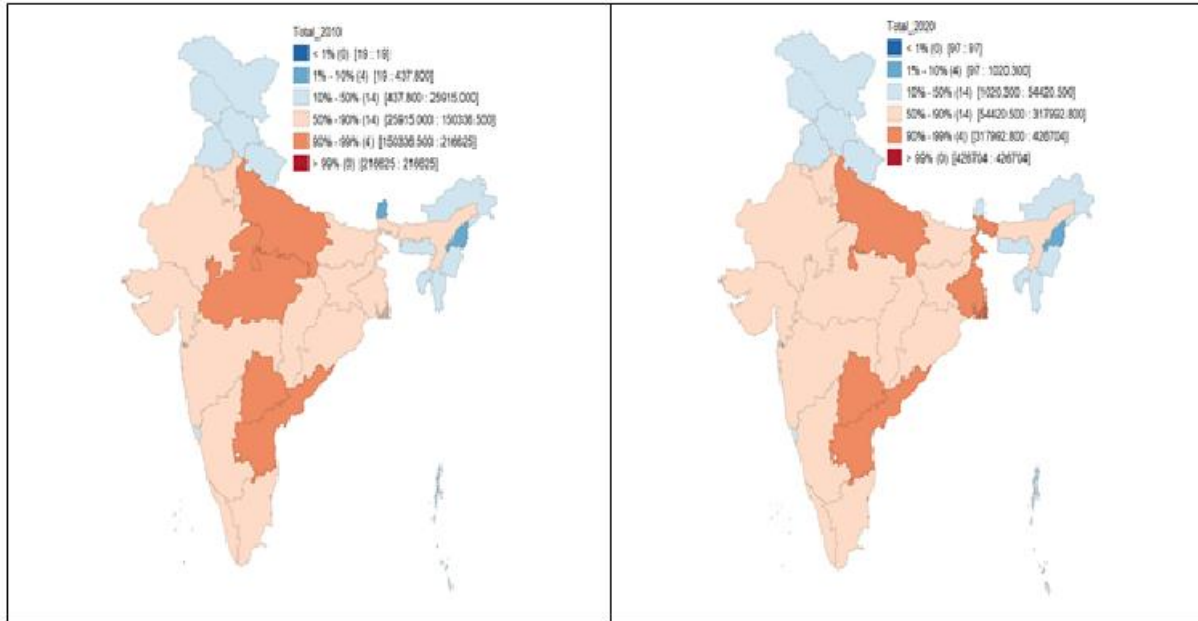


Fig. 2: Percentile distribution of total crime incidences in India for the decades 2001-2010 and 2011-2020

Whereas Madhya Pradesh is observed under high crime during 2001-2010 only, West Bengal is observed under high crime against women during 2011-2020 only. On the other side, low crime incidence, including less than ten percentiles, can be detected in a few states in North Eastern and states in the northernmost part of India for both decades 2001-2010 and 2011-2020.

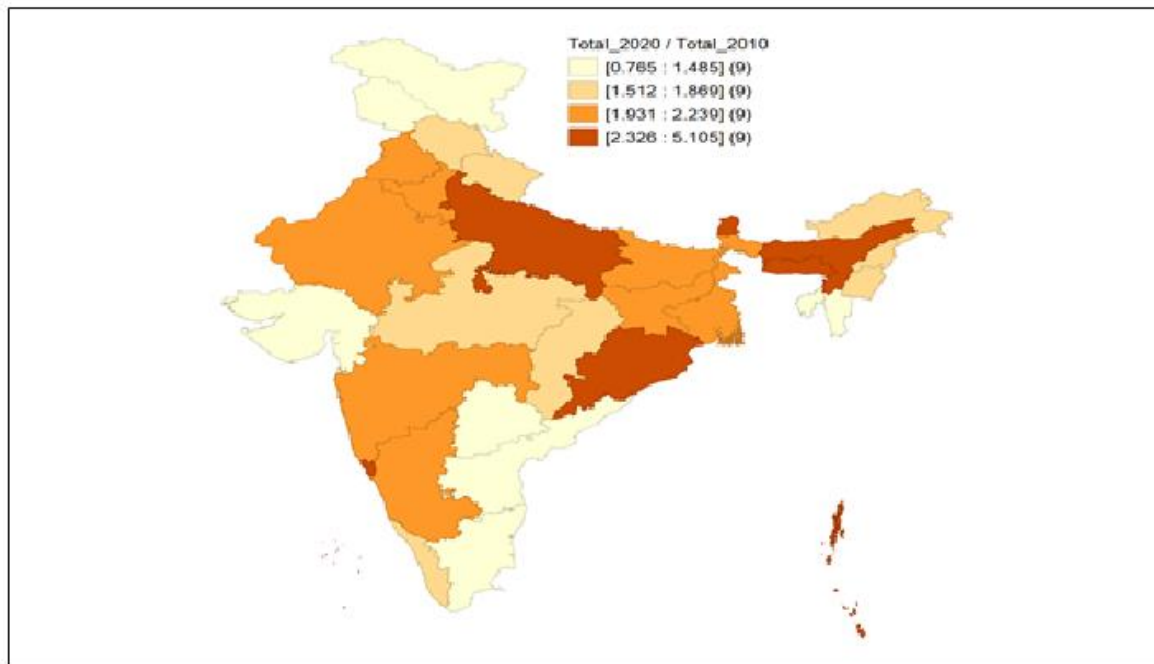


Fig. 3: Ratio Calculated Map of decade 2011-2020 over 2001-2010

Figure 3 shows the ratio map of crimes that happened in 2011-2020 over 2001-2010. The highest category states are Uttar Pradesh, Odisha, Assam, Sikkim, Meghalaya, Goa, Andaman, the Nicobar Islands, and Lakshadweep.

Forecasting Crime Rate

The ARIMA (0,1,0) model has been identified as the best fit ARIMA model for crime rate forecasting of India as its RMSE, MAPE, MAE, MaxAPE, MaxAE, Normalized BIC values are identified automatically found by the expert modeler (Table 3)

Table 3: ARIMA Model Statistics

ARIMA Model Parameters									
		Estimate	SE	t	Sig.				
Natural Logarithm	Constant	0.039	0.012	3.172	0.004				
	Difference	1							
Model Statistics ARIMA (0,1,0)									
Model Fit statistics							Ljung-Box Q (18)		
R-squared	RMSE	MAPE	MAE	MaxAPE	MaxAE	Normalized BIC	Statistics	DF	Sig.
0.954	2.821	4.482	1.736	16.757	8.753	2.191	11.422	18	0.876

The values for the ARIMA model $t = 3.171$ and $sig. = 0.004$ states that the best fit model for the time series data is ARIMA (0,1,0) model. The values of estimated parameters with their statistics and significance of the best fit ARIMA (0,1,0) model is shown in Table 3. Table 4 shows the forecasted values of crime rates of crimes against women with its 95% Confidence Interval for the next ten years (i.e., 2021-2030). As per our best fit ARIMA (0,1,0) model, the crime rates of crimes against women in India is expected to be 85.04, more particularly to lie between 54.35 and 127.42 in the next decade. Figure 4 shows the forecasted trend with its 95% forecasted Interval of the crime rate of crimes against women for India.

Table 4: Forecasted value of crime rate of Crime Against Women for 2021-2030 based on ARIMA (0,1,0) model with 95% confidence interval

Year	Forecasted Value	Upper 95% CI	Lower 95% CI
2021	58.85	67.19	51.32
2022	61.31	73.85	50.45
2023	63.87	80.13	50.25
2024	66.53	86.35	50.38
2025	69.31	92.67	50.73
2026	72.20	99.13	51.24
2027	75.22	105.81	51.87
2028	78.36	112.73	52.61
2029	81.63	119.92	53.44
2030	85.04	127.42	54.35

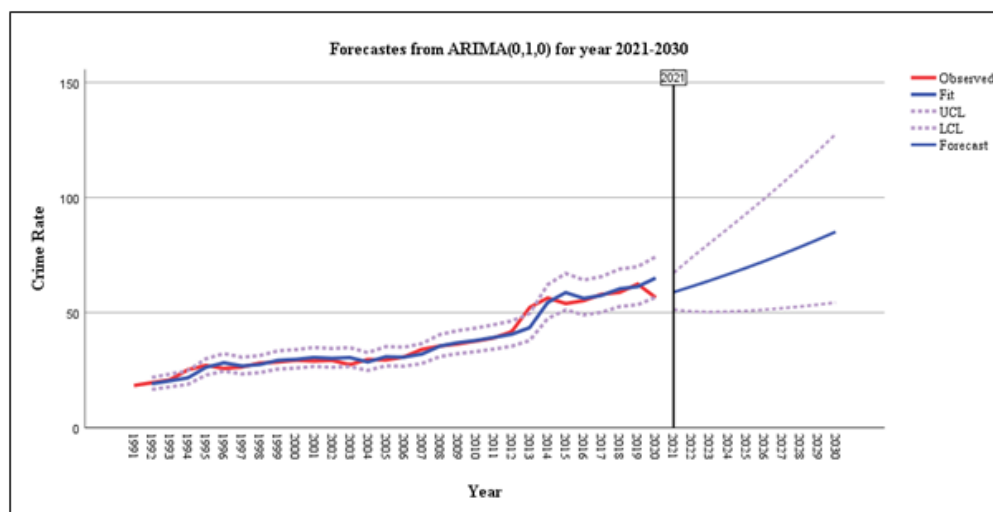


Fig. 4: Forecast from ARIMA Model

DISCUSSION

In the present analysis of crimes against women, it would be highlighted that the crime head of Cruelty by Husband and Relatives had the highest incidences of crimes in both decades. It shows the prevalence of the high number of incidences of violence that happened in living spaces. In our analysis, it was also found that in most cases of rape offender was found to be known to the victim. Spousal violence is the major factor in Indian society, as women are afraid to speak and report such issues.

Furthermore, due to cultural secrecy, women who are subjected to abuse do not report it to anybody and continue to bear the brunt of the assault until it becomes a mental trauma for them. The silence they learn due to their behavior costs them far more than their happiness, leaving them with lifelong scars of exploitation, abuse, and solitude. (Zainab et al., 2017). Many studies show that adolescent girls in the hands of their fathers, brother and married women in the hands of husbands and relatives face physical violence (Abramsky et al., 2011). Both married and unmarried women are victims of emotional, physical, and sexual assault in private areas. Verbal abuse was the most common form of violence in private settings, followed by various forms of physical violence, such as kicking, pushing, slapping, etc. Both rural and urban settings have high levels of emotional forms of violence. Physical violence is also prevalent in rural communities (Rajeshwari & Preeti, 2020). Furthermore, delays in launching FIRs and reporting crimes to authorities make it more difficult for experts to procure the crime evidence. It is the quake-like shock to her future dreams, aspirations, and ambitions of a happy married life and the loss of her sense of pride, security, and purity (Ministry of Women and Child Development, 2017).

Women's empowerment and a decline in the crime rate are associated factors (Kumar & Kuncharam, 2020). In today's world, women's political, economic, and social empowerment is critical, and it is the responsibility of every government and individual. Women's empowerment entails educating and asserting themselves to make their own decisions. Less female illiteracy and lower levels of education make women more susceptible to violence by their intimate partners (Abramsky et al., 2011). Less literacy impacts health, education, income, life expectancy, and purchasing power, and results in discrimination and crimes. Government and other local bodies should empower women with employment, education, and health to participate in the nation-building process.

CONCLUSION

In this paper, the researcher studied the pattern of crimes against women in India by analyzing the past three decades' data and forecasting for the next decade. Crime against women show an increasing trend in the past three decades. The forecast from the ARIMA model also shows that crime will be going to increase in the next decade. This is an alarming condition where the highest crime happens in the living space itself. Government and society must come forward to implement laws and take course correction measures.

Competing interests: The authors have declared that no competing interests exist.

REFERENCES

- [1] Abramsky, T., Watts, C. H., Garcia-Moreno, C., Devries, K., Kiss, L., Ellsberg, M., Jansen, H. A. F. M., & Heise, L. (2011). What factors are associated with recent intimate partner violence? findings from the WHO Multi-country Study on Women's Health and Domestic Violence. *BMC Public Health*, 11. <https://doi.org/10.1186/1471-2458-11-109>
- [2] Ahmad, J., Khan, N., & Mozumdar, A. (2021). Spousal Violence Against Women in India: A Social-Ecological Analysis Using Data From the National Family Health Survey 2015 to 2016. *Journal of Interpersonal Violence*, 36(21-22), 10147-10181. <https://doi.org/10.1177/0886260519881530>
- [3] Apatinga, G. A., Tenkorang, E. Y., & Issahaku, P. (2021). Silent and Lethal: Consequences of Sexual Violence Against Married Women in Ghana. *Journal of Interpersonal Violence*, 36(23), 206-228.
- [4] Borah, L., Das, M., & Guwahati, A. (2017). Crime against women in Brahmaputra valley. *Transactions of the Institute of Indian Geographers*, 39(1), 47-57.
- [5] Campbell, A. M. (2021). Improving prevention of family violence during (and after) disaster: Lessons learned from the Covid-19 pandemic. *Forensic Science International: Reports*, 3(1), 100-179.
- [6] IBM. (2013). *IBM SPSS Forecasting* 22. 48.
- [7] Kumar, M., Athulya, S., Mary Minu, M. M., Vidya Vinodini, M. D., Aiswaria Lakshmi, K. G., Anjana, S., & Manojkumar, T. K. (2018). Forecasting of Annual Crime Rate in India: A case Study. *2018 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2018*, 2087-2092.
- [8] Kumar, S., & Kuncharam, S. R. (2020). Determinants of Women Empowerment Responsible for Reducing Crime

- against Women in India. *Violence and Gender*, 7(4), 182–187.
- [9] Ministry of Women and Child Development. (2017). Tackling Violence Against Women: A Study of State Intervention Measures. *Ministry of Women and Child Development, March*, 1–91. http://www.wcd.nic.in/sites/default/files/Final Draft report BSS_0.pdf
- [10] Rajeshwari, & Preeti. (2020). Violence against married and unmarried women in Haryana: Voices from public and private spaces. *Transactions of the Institute of Indian Geographers*, 42(1), 81–92.
- [11] Su, Z., McDonnell, D., Roth, S., Li, Q., Šegalo, S., Shi, F., & Wagers, S. (2021). Mental health solutions for domestic violence victims amid COVID-19: a review of the literature. *Globalization and Health*, 17(1), 1–11.
- [12] Vicente, G., Goicoa, T., Fernandez-Rasines, P., & Ugarte, M. D. (2020). Crime against women in India: unveiling spatial patterns and temporal trends of dowry deaths in the districts of Uttar Pradesh. *Journal of the Royal Statistical Society. Series A: Statistics in Society*, 183(2), 655–679.
- [13] Wani, M. A., Wani, D. M., & Mayer, I. A. (2021). Geographical distribution of violence against women in Jammu & Kashmir, India. *GeoJournal*, 0. <https://doi.org/10.1007/s10708-021-10443-0>
- [14] World Health Organization. (2021a). *Violence against women*. <https://www.who.int/news-room/fact-sheets/detail/violence-against-women>
- [15] World Health Organization. (2021b). Violence against women prevalence estimates, 2018. In *World Report on Violence and Health*.
- [16] Zainab, N., Jadoon, A., & Nawaz, M. (2017). The Culture of Silence and Secrets: Repressions and Psychological Disorders among Pakistani Housewives in Fiction. *Global Language Review*, 12(1), 114–129. [https://doi.org/10.31703/glr.2017\(ii-i\).09](https://doi.org/10.31703/glr.2017(ii-i).09)