Crime against Women in India: A State Level Analysis

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Abstract

Violence against Indian women is in reality much more than it may appear as there are some violence which are not considered as crime or go unreported or undocumented. The present paper is an attempt to understand Crime against women in the 28 major Indian states on the basis of the data published by National Crime Record Bureau in India over the period 2001-02 to 2014-15. The relative position of the states is determined based on both Year to Year as well as Compound Annual Growth Rate. Along with enforcement and punishment, there can other effective policy mechanisms for controlling crime against women. The paper thus aims to identify the factors which can control crime against women employing panel regression technique. Our result suggests that although there are fluctuations but the states' are fronting different crime against women, most prominent being offence related to dowry. Further it can be concluded that parental guidance and education can inhibit crime against women whereas social deprivation and economic poverty can encourage it. One interesting finding is that economic growth can initially encourage crime against women but crime may fall after some threshold limit of economic growth.

Keywords: Crime against women, Sexual crime, Offence related to dowry, Panel regression, Nonlinearity, Family background, Literacy rate, Economic status, Economic Growth.

Introduction

The violent behavior towards women is at diverse levels and women are being exploited in every nook and corner of our society. Violence against women is of various types and can happen at any place like home, public place or office. It is an issue related to the women which cannot be ignored as it is hindering almost one-half growth of the country.

Although women may be victims of any of the general crimes such as murder, robbery, cheating, etc, only the crimes which are directed specifically against women are characterized as

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crimes against women. Crime against women is of various natures. It includes crimes involving sexual exploitation for economic gains like prostitution & trafficking, adultery, abduction, rape, wrongful confinement and murder, etc.

India continues to experience crime against women despite the efforts of the government to toughen bills that prosecute men who attempt to rape women and also criminalize offenses like stalking and voyeurism. Various new legislations have been brought and amendments have been made in existing laws with a view to handle these crimes effectively. In order to reduce the number of offenses and different crime against women in India, another Juvenile Justice (Care and Protection of Children) law, 2015 has been made by the Indian government to replace the earlier Indian juvenile delinquency law of 2000. There are several programmes that have been set into motion by the Government and several NGOs in the country. But there is still a wide gap that exists between those under protection and those not. Poverty and illiteracy add to these obstacles in the way of empowering women and building a nontoxic society which actually begins with a guarantee of their health and safety. Given this background, a detailed investigation of crime against women is very much needed.

Literature Review

Several works have been done relating to various issues on crime in India, taking specific crime as well as crime as a whole and crime deterrence and the need for reforms. In this context mention should be made of the names like Braithwaite (1975), Dreze and Khera (2000), Mukherjee, Rustagi and Krishnaji (2001), Shaban (2008), Dutta and Husain (2009), Bhatt and Pant (2011), Nagarajan and Sheriff (2012), Kumar (2013), Prashad (2013), Sharma (2012), Chaudhary (2013), Nagindrappa and M.K (2013), D'costa (2013), Bharadwaj (2014), Wani (2014), Iyer and Topalova (2014), Satija and Dutta (2015), Kumar and Kumar (2015), Malik (2016), Kaur and Singh (2017) among others. These studies mainly focused on All India. But state level study is practically lacking in the literature. The present study is in the footsteps of earlier studies in India. It is different from earlier studies in the sense that it covers 28 major states and tried to understand the relative position of the states with respect to All India. Also, an attempt has been taken in the present paper to find out the underlying factors of crime against women. Thus, the present paper is an attempt to fill the gap in the existing literature.

Given this research gap, the objective of this paper is threefold: (a) Studying the trend of three major components of Crime against women like Sexual crimes, Offence related to Dowry and Other Crimes against women, (b) Understanding the relative position of the different states with respect to All India in terms of the three above mentioned Crime against women and (c) Finding out the factors that may reduce Crime against women.

Methodology and the Data Source

The present paper is concerned with the three major components of crime against women, such as (a) Sexual crimes, (b) Offence related to Dowry and (c) Other Crimes against women. The descriptions of the above three components are presented in Table 1 below:

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

For gauging the trend of the above mentioned three components of Crime against women, both Year to Year Growth Rate (YOY)[4] as well as Compound Annual Growth Rate (CAGR)[5] have been employed.

The variables such as Economic Growth (EG), Family background (FB), Social deprivation (HL), Economic status/poverty (ES) and Education (ED) are considered for finding out the factors that can control Crime against Women.

The descriptions and justifications of the above variables are presented in Table 2. The hypothesized form of crime against women function takes the following form:

$$CW = f(EG, FB, ED, HL, ES)$$

For finding out factors that may control crime against women, data on 28 sample states are taken together and panel regression technique has been employed using Eviews 8 under a seemingly unrelated regression (SUR) framework where each regression was adjusted for contemporaneous correlation (across units) and cross section heteroscedasticity.

Use of panel data set allows us to control for unobserved cross section heterogeneity. By using panel data estimation method, variables are found out which can be taken as significant determinants across all the states.

Secondary data from the period 2001-02 to 2014-15 have been collected from The National Crime Record Bureau (NCRB) [http://ncrb.nic.in/], Handbook of statistics on Indian economy, Reserve bank of India and Census of India. The 28 states considered are Andhra Pradesh (AP), Arunachal Pradesh (ARP), Assam (AS), Bihar (BI), Chhattisgarh (CH), Goa (GO), Gujarat (GU), Haryana (HA), Himachal Pradesh (HP), Jammu & Kashmir (J&K), Jharkhand (JK), Karnataka (KA), Kerala (KE), Madhya Pradesh (MP), Maharashtra (MA), Manipur (MR), Meghalaya (ME), Mizoram (MI), Nagaland (NA), Odisha (OD), Punjab (PU), Rajasthan (RA), Sikkim (SI), Tamil Nadu (TN), Tripura (TR), Uttar Pradesh (UP), Uttarakhand (UT) and West Bengal (WB).

Results of Analysis

This section discusses the result of analysis. First the results of YOY growth rate and CAGR of three components of crime against women are presented. The relative position of the

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[4] YOY = $(Y_t - Y_{t-1})/Y_{t-1}$ where Y_t and Y_{t-1} are the magnitude of the variable in period t and t-1 respectively.

[5] CAGR = $(Y_t/Y_o)^{(1/t)} - 1$ where Y_t and Y_o are the magnitude of the variable in period t and 0 respectively and t denotes number of periods.

28 sample states is determined based on YOY and CAGR. Then the major factors that can control Crime against Women are discussed.

Results of YOY Growth Rate of Three Components of Crime against Women

The trend of three components of crime against women like sexual crime, offence related to dowry and other crimes against women showed a fluctuating pattern but also showed negatives values in some of the financial years which follows from Table 3 to 5. To know the relative performance of the 28 major states, some summary statistics like simple arithmetic mean, standard deviation and coefficient of variation for the three components of crime against women for the 28 states are compared with All India.

The states are categorized into below All India average named Good performing states and above All India average termed. bad performing states based on the following criterion whose results can be seen from Table 6.

Good Performing States: AM-low; SD and CV-high/low
Bad Performing States: AM-high; SD and CV-high/low

In case of Sexual crimes, 15 states (53.57%) are good performer and the remaining 13 (46.43%) states are bad performer. For Offence related to Dowry, only 11 states (39.28%) are good performer and 17 states (60.72%) are bad performer. Whereas for other crimes against women, 17 states' (60.72%) performance are good and the left over 11 states (39.28%) are bad performer. Thus, it comes out that Offence related to Dowry is the most prominent crime against women out of the three components in Indian states during the study period.

Results of CAGR of Three Components of Crime against Women

Compound annual growth rate of the three components of crime against women is presented in Table 7. Comparison of CAGRs of the 28 sample states with All India facilitated to recognize the relative performance of the states. Again, the states are categorized into good and bad performing states basis on the criterion discussed above (in YOY subsection) whose result is presented in Table 8.

The result suggests that for Sexual crimes, 17 states (60.72%) are good performer and thus 11 remaining states (39.28%) are bad performer. For Offence related to Dowry, 13 states (46.43%) are good performer and 15 states (53.57%) are bad performer. For other crimes against women, 18 states (64.28%) are good performer and the rest 10 states (35.72%) are bad performer. The analysis thus suggests that under the study period, offence related to dowry is most noticeable in Indian states among the three components.

A Comparison Between the Results of YOY and CAGR

Comparison of the performance of the sample states based on YOY and CAGR reveals that for sexual crime and Offence related to Dowry, 26 states showed identical results excepting KE and GU which are bad performing in YOY but performing well with respect to CAGR. For other crimes against women 25 sample states showed similar result except KA which is a good performing state in YOY but bad in CAGR. Offence related to dowry turns out to be the most common crime among the components of crime against women in Indian states according to both measures.

Panel Regression Results: Major Factors that may Control Crime against Women

The major factors that may control Crime against Women has been attempted to find out using panel regression analysis for 28 Indian states taken together. While estimating the panel model, to test for appropriateness of the assumption of fixed effect vis-a-vis the random effect model, Hausman's specification test is performed using Eviews 8 which strongly rejects the assumption of random effect model and supports the assumption of fixed effect model.

The variables considered for controlling Crime against Women are Economic Growth (EG), Family background (FB), Social deprivation (HL), Economic status/Poverty (ES) and Education (ED).

Panel regression estimates show that the estimated model is nonlinear. The estimated model also reports Adjusted R^2 which represents the overall fit of the model, which is based on the difference between residual sum of squares from the estimated model and the sum of square from a single constant only specification, not from a fixed effect only specification. High value of Adjusted R^2 shows that the fitted model is reasonably good. Panel regression results are presented in Table 9.

Nonlinear relationship exists between (i) economic growth and total crime against women being represented by inverted U shape, (ii) family background and total crime against women and also (iii) education and total crime against women. The negative marginal effect helped to understand the direction of relationship for these variables. The statistical significance of these variables has been checked by Wald test. The results can be found in Table 10.

The inverted U-shaped association among economic growth and total crime against women reveals that with economic growth crime may rise as more economic growth means urbanization where people are of demand for drugs and alcohol, and the attendant violence that often accompanies their consumption which may increase crime against women. But after some threshold level of economic growth, crime may fall as employment rises with higher economic growth leading to more and more engagement in work. The better a country's economy may be more jobs are created, less unemployment, improving income levels and subsequently there may be less criminal activity. So high economic growth is good for the country from the crime against women point of view as well. This result is inconsistent with the economist arguments that good economies tend to create more crime, and the opposite occurs during bad economies.

Family background and education are found to be the factors which can control crime. Parents can ensure to take care of their children, financially, physically, spiritually and mentally. Parental guidance may help an individual to grow his or her morality, social responsibilities, behavioral attitude, etc. from his very childhood thereby inhibiting crime against women. Education can be viewed as a human capital investment that may increase future work opportunities thus discouraging participation in crime (Lochner, 2004). Education may also make individuals more risk averse, thus discouraging crime that entail considerable uncertainty in returns or punishment.

Social deprivation and economic poverty may encourage crime against women. Crime against women may rise with social insecurity. Presence of homeless men may seriously threaten neighborhood security ('rob the home' or 'rape the women'). Poverty makes a man psychologically instable and creates anxiety which may lead to more domestic violence. Poverty is widely seen as a contributor of crime against women.

A cross product term exists between family background and education which may represent parental guidance along with education level and is found to hinder crime against women.

Overall Conclusion, Policy Suggestions and Limitations

In recent era crime against Indian women is being increasing at an intolerable level. Thus, a portrait of crime against women in India can be obtained by determining the relative position of the Indian states. Other than enforcement and punishment, identification of factors which can control crime against women may be helpful for controlling crime. Major findings from the present paper can be summarized as follows:

- The growth rate of the major components of crime against women showed fluctuating pattern and more or less similar trend.
- For both sexual crime and offence related to dowry, the relative position of the 26 sample states is found to be same excepting Kerala and Gujarat. For other crimes against women, excepting Karnataka, the relative position of the 27 states are similar.
- High economic growth can deter crime against women. Along with it when citizens of a country concentrate on useful things like education which can be seen as investment in human capital formation, crime against women may plunge.
- Increasing social insecurity of the homeless people and also psychological instability and anxiety out of poverty are the factors which may raise crime against women.

Although policymakers often focus on enforcement and punishment to fight crime there can be other effective policy mechanisms as well. Policies designed to increase economic growth, education, parental guidance, social security and financial security may reduce crime against women.

All the components of crime against women namely sexual crime, offence related to dowry and other crimes against women should be controlled. For that the factors which can regulate these different types of crimes are to be found out. Thus, much scope remained and separate regression estimates are to be determined for each of the three components. This can be the agenda of our future research.

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Table 2: Description and Justification of the Variables used

Variables	Definition	Justifications
Dependent Variable		
Crime against Women (CW)	Total Crime against Women	
Independent Variables		
Economic Growth (EG)	Per capita net state domestic product at constant price	A clear link exists between crime and economic growth. Bad economic times may make more people willing to commit crimes as anxiety of bad times may lead to more domestic violence and greater consumption of mind-altering substances, leading to more crime against women. Whereas with economic growth more and more jobs are created and people get more engaged in work thus getting less time for crime as a result crime against women may fall. Not only that as economic growth occurs, government expenditure on social security increases.
Family background (FB)	Number of families with guardian	Parental guidance may help a child to grow his or her morality, social responsibilities, behavioral attitude, etc. It is quite obvious that when a child gets more care from the parents there is a possibility to improve his or her psychological balance. Proper guidance of the parents helps to produce a good person.
Social deprivation (HL)	Number of homeless persons	Homeless people are socially insecured, so they are supposed to commit crimes from their social insecurity. Again, the economic condition of the homeless people is very poor as most of them are unemployed or engaged in employment in small scale. So to meet up their day to day expenses or to fund greater consumption of mind-altering substances, they may exploit women and thus committing crime against women.
Economic status/poverty (ES)	Number of families having annual income less than Rs. 25,000	Poverty makes a man psychologically instable. Anxiety of bad times may lead to more domestic violence.
Education	Literacy rate	It is expected that an educated person will commit less crime

(ED)		against women compared to less educated person. When citizens of a country divert their attention to more useful things like education, improvise healthcare, etc that may reduce crime against women.

Table 3: Year to Year Growth Rate of Sexual crimes

States	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
AP	1.11	1.06	0.91	0.97	1.00	0.76	0.60	0.48	0.43	0.33	0.42	0.43	0.06	0.03
ARP	0.63	0.72	1.51	0.81	0.82	0.82	0.54	0.62	0.51	0.41	1.00	0.62	0.09	-0.14
AS	2.97	2.38	2.35	2.21	2.08	1.61	1.97	1.45	1.22	1.11	1.29	0.86	0.52	0.25
BI	0.18	0.04	0.03	-0.18	0.08	-0.04	-0.28	-0.25	0.04	0.29	0.00	0.61	0.15	-0.23
CH	0.21	0.33	0.41	0.27	0.36	0.28	0.32	0.28	0.28	0.21	0.21	0.25	-0.08	-0.04
GO	6.50	6.50	3.74	2.60	3.66	4.87	4.74	2.65	1.87	2.07	2.86	1.25	-0.11	-0.24
GU	0.51	0.55	0.66	0.38	0.42	0.42	0.39	0.32	0.37	0.47	0.43	0.33	-0.15	-0.27
HA	1.47	0.41	0.58	0.92	1.19	0.99	1.40	0.89	0.90	0.77	0.86	0.94	-0.01	0.02
HP	0.65	0.55	0.87	0.63	0.62	0.76	0.43	0.49	0.37	0.25	0.31	0.47	-0.14	-0.17
J& K	0.70	0.36	0.26	0.25	0.31	0.18	0.13	0.27	0.16	0.19	0.01	-0.07	-0.13	-0.09
JK	1.43	0.74	0.85	0.74	0.95	0.68	0.74	0.94	0.96	1.04	0.90	0.91	0.21	0.23
KA	1.88	1.88	1.95	2.29	1.94	1.77	1.56	1.40	1.13	0.83	0.77	0.59	0.16	-0.13
KE	1.14	1.03	1.30	0.93	0.85	0.65	0.63	0.55	0.58	0.35	0.01	0.05	-0.07	-0.08
MP	0.21	0.19	0.25	0.24	0.27	0.30	0.22	0.27	0.28	0.20	0.19	0.19	-0.03	-0.15
MA	2.24	2.53	2.68	2.34	1.98	1.85	1.93	1.71	1.94	1.64	1.59	1.40	0.23	0.13
MR	2.24	0.85	1.15	1.18	1.66	0.62	0.48	0.40	0.85	1.05	0.46	0.18	0.02	-0.24
ME	3.53	2.79	3.28	1.63	1.16	0.76	0.80	0.58	0.25	0.17	0.13	0.12	-0.18	-0.24
MI	0.36	-0.05	-0.01	0.64	0.57	0.15	-0.05	-0.09	-0.03	-0.16	-0.06	-0.25	-0.17	-0.43
NA	1.30	1.94	1.65	1.41	1.21	0.89	1.41	0.51	0.61	0.66	0.66	0.43	0.06	0.06
OD	2.22	2.77	2.62	2.40	1.91	1.57	1.37	1.24	1.38	1.25	1.06	0.57	0.36	0.18
PU	2.02	1.76	1.34	2.14	1.89	1.65	1.18	1.27	1.51	1.32	1.73	1.06	0.08	-0.05
RA	1.23	1.32	1.34	1.27	1.52	1.40	1.37	1.28	1.20	1.26	1.08	1.01	0.09	-0.13
SI	0.32	0.26	-0.17	-0.33	-0.48	-0.15	-0.22	-0.26	0.04	0.00	-0.28	-0.45	-0.60	-0.69
TN	-0.49	-0.60	-0.53	-0.54	-0.46	-0.34	-0.44	-0.50	-0.30	-0.40	-0.37	-0.38	-0.35	-0.09
TR	2.81	1.58	1.53	1.07	0.88	0.54	0.50	0.10	0.05	-0.02	0.20	0.11	-0.06	-0.22
UP	0.53	1.08	0.63	0.90	0.91	0.85	0.61	0.38	0.61	1.60	1.06	1.17	0.09	-0.09
UT	1.39	0.88	0.83	0.69	0.93	0.51	0.91	0.21	0.30	0.52	0.97	0.73	0.05	-0.05
WB	3.84	3.71	2.66	1.66	1.50	1.28	0.84	0.74	0.89	0.68	0.68	0.39	0.15	-0.11

Source: Authors calculations from the data of Crime in India (The National Crime Bureau Record (NCRB)

Table 4: Year to Year Growth Rate of Offence related to dowry

States	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
AP	1.10	0.79	0.61	0.54	0.50	0.40	0.11	0.19	0.08	0.02	-0.11	-0.13	-0.17	0.00
ARP	5.00	4.08	3.71	15.50	6.33	3.40	2.30	4.08	4.08	4.50	2.67	1.44	1.28	0.53
AS	6.76	5.31	4.89	4.61	3.83	3.30	2.70	2.21	1.50	1.05	1.14	0.75	0.30	0.16
BI	1.14	1.12	1.00	0.42	1.07	0.84	0.84	0.55	0.37	0.54	0.29	0.10	-0.08	-0.17
CH	-0.22	-0.04	0.04	-0.12	-0.14	-0.13	-0.23	-0.29	-0.30	-0.27	-0.25	-0.33	-0.45	-0.34
GO	0.46	0.90	-0.27	0.00	0.46	0.36	0.19	0.36	-0.21	0.06	0.00	-0.21	-0.53	-0.49
GU	0.12	0.24	0.12	0.04	0.01	-0.17	-0.29	-0.32	-0.24	-0.26	-0.32	-0.37	-0.47	-0.31
HA	1.11	1.08	1.06	0.66	0.65	0.51	0.41	0.38	0.31	0.26	0.26	0.11	-0.03	0.00
HP	-0.28	-0.01	0.04	-0.08	0.05	-0.08	-0.31	-0.30	-0.16	-0.12	0.00	-0.04	-0.26	-0.27
J& K	5.17	4.65	3.79	3.38	4.02	1.77	1.19	1.20	0.93	0.83	0.36	0.30	-0.07	-0.14
JK	2.23	2.27	2.21	2.27	1.99	1.68	1.23	1.24	1.45	1.61	1.59	0.32	-0.09	0.04
KA	0.94	0.85	1.02	1.07	0.81	0.59	0.38	0.28	0.04	-0.05	-0.13	-0.13	-0.14	-0.11
KE	0.47	0.33	0.28	0.17	0.15	0.02	-0.06	-0.09	-0.06	-0.21	-0.29	-0.27	-0.21	-0.25
MP	0.91	0.60	0.69	0.44	0.62	0.61	0.49	0.52	0.24	0.29	0.32	0.26	0.04	-0.17
MA	0.24	0.40	0.36	0.33	0.21	0.11	0.02	-0.04	-0.01	0.01	0.06	0.02	-0.11	-0.01
MR	6.80	2.90	8.75	18.50	0.95	2.90	1.60	0.34	0.56	1.17	-0.03	-0.09	0.34	-0.07
ME	10.25	0.00	10.25	5.43	10.25	1.37	1.14	0.32	0.88	0.88	1.05	1.65	0.80	0.02
MI	-0.44	2.00	2.00	0.00	1.25	8.00	3.50	0.80	1.25	2.00	0.00	0.13	0.80	0.13
NA	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	3.00	3.00	0.00	-0.20	0.33
OD	1.59	1.81	1.61	1.53	1.11	1.03	0.95	0.55	0.53	0.52	0.34	0.11	-0.01	0.23
PU	0.30	0.51	0.53	0.82	1.01	0.79	0.51	0.50	0.40	0.31	0.31	0.19	-0.10	-0.06
RA	1.52	1.44	1.43	1.07	1.34	1.00	0.73	0.74	0.38	0.28	0.17	0.08	-0.05	-0.09
SI	0.00	0.00	2.00	2.00	-0.25	-0.50	-0.57	-0.40	-0.50	-0.25	-0.25	-0.40	-0.40	-0.40
TN	1.22	0.62	0.18	0.18	0.12	0.52	-0.10	0.09	0.24	0.19	0.07	-0.02	-0.20	-0.08
TR	1.18	1.10	0.98	0.64	0.12	0.05	-0.09	-0.30	-0.37	-0.45	-0.28	-0.41	-0.38	-0.28
UP	0.39	0.75	2.19	0.93	1.07	0.80	0.31	0.27	0.24	0.34	0.44	0.32	0.11	-0.09
UT	0.31	0.23	0.15	-0.03	0.40	0.08	-0.12	0.15	0.04	0.15	0.20	0.08	-0.01	0.07
WB	4.00	3.75	2.90	2.05	1.79	1.62	0.99	0.46	0.24	0.13	0.01	0.00	0.10	-0.13

Source: Author's calculations form the data of Crime in India (The National Crime Bureau Record (NCRB)

Table 5: Year to Year Growth Rate of Other Crimes against women

States	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
AP	-0.15	0.04	0.39	0.24	0.06	-0.10	-0.18	0.02	-0.01	-0.14	-0.15	-0.05	-0.14	-0.02
ARP	1.36	2.42	1.55	2.17	2.33	1.55	1.95	1.77	3.64	1.83	1.17	1.20	0.48	0.43
AS	3.73	2.91	2.70	2.22	2.43	2.23	2.41	1.80	1.39	0.82	0.58	0.50	0.20	0.30
BI	7.22	5.54	6.19	3.90	4.02	3.55	2.86	1.80	1.52	0.99	0.68	0.35	0.15	0.09
CH	6.42	7.18	7.71	6.42	6.15	6.07	5.96	5.17	4.71	3.63	2.55	2.83	-0.28	-0.03
GO	1.15	1.43	0.92	0.92	0.46	1.03	3.29	0.74	0.62	1.15	1.09	0.30	-0.26	-0.23
GU	0.75	0.86	0.72	0.71	0.65	0.57	0.42	0.37	0.33	0.20	0.08	0.02	-0.30	-0.28
HA	6.48	6.39	6.26	5.72	4.55	3.61	2.71	2.30	2.18	2.09	2.01	1.46	0.18	0.21
HP	1.31	1.08	1.43	1.38	1.31	1.25	0.63	0.78	0.93	0.50	0.27	0.55	-0.17	0.06
J&K	1.10	0.79	0.74	0.67	0.62	0.47	0.51	0.62	0.29	0.27	0.04	0.03	0.13	0.32
JK	2.29	3.30	2.48	3.30	2.11	1.19	0.70	0.71	0.78	0.30	0.37	0.16	-0.01	0.04
KA	0.25	0.20	0.27	0.39	0.31	0.82	1.03	1.20	1.75	1.45	0.88	0.41	0.20	0.10
KE	0.43	0.47	0.25	0.05	-0.08	-0.16	-0.13	-0.07	-0.33	-0.34	-0.22	-0.23	-0.10	0.40
MP	5.69	6.00	6.13	6.53	6.30	6.27	5.35	5.13	4.31	3.34	2.95	2.99	0.58	-0.20
MA	5.48	5.58	5.80	4.00	4.10	3.21	3.25	3.13	3.58	2.83	2.34	2.64	1.53	1.06
MR	0.42	0.07	0.32	0.32	0.34	0.19	0.13	0.08	-0.03	-0.12	-0.19	-0.36	-0.25	-0.22
ME	4.27	4.80	4.27	2.22	1.90	1.23	1.52	1.07	1.07	0.45	0.38	0.87	0.57	0.41
MI	0.33	3.00	3.00	0.60	7.00	7.00	0.00	3.00	7.00	0.00	0.00	1.67	3.00	1.67
NA	3.71	3.13	5.60	3.13	1.54	1.75	2.30	3.13	1.54	3.13	5.60	1.36	1.75	1.36
OD	4.72	4.75	5.83	4.89	3.55	3.14	2.75	2.31	2.22	1.78	1.54	0.89	0.25	0.06
PU	2.71	2.37	2.79	2.85	2.42	1.71	1.24	1.37	1.31	1.08	1.33	0.71	0.18	0.07
RA	0.90	1.05	1.36	1.17	1.56	1.50	1.38	1.20	0.79	0.66	0.52	0.52	0.03	-0.05
SI	9.50	9.50	20.00	3.20	9.50	2.00	0.91	4.25	2.00	1.33	0.91	1.10	0.31	0.75
TN	-0.69	-0.57	-0.47	-0.51	-0.49	-0.25	-0.20	-0.01	-0.01	-0.10	-0.16	-0.17	-0.12	-0.07
TR	2.49	1.54	3.21	1.26	1.84	0.97	0.51	0.11	0.33	0.33	0.03	0.07	-0.02	0.20
UP	2.50	3.35	5.58	3.29	3.45	2.88	1.98	1.26	0.99	0.85	0.34	0.28	0.04	-0.05
UT	1.83	1.28	1.66	1.72	1.80	0.91	0.51	0.58	0.41	0.41	0.24	0.33	-0.45	0.21
WB	4.55	4.49	3.24	2.51	2.44	2.19	1.44	1.05	0.79	0.43	0.06	-0.06	0.03	-0.20

Source: Author's calculations form the data of Crime in India (The National Crime Bureau Record (NCRB)

Table 6: Performance of the major Indian states with respect to All India in terms of YOY

Variables	Good Performing states	Bad Performing states
Sexual crimes	15 states (AS, GO, HA, JK, KA, MA, MR, ME, NA, OD, PU, RA TR, WB and UT)	13 states (AP, ARP, BI,CH, GU, HP, J&K,KE, MP, MI, TN, UP and SI)
Offence related to Dowry	11 states (ARP, AS, J&K, JK, MR, ME NA,SI,WB,OD and RA)	17 states (AP, BI, CH, GO, GU, HA, HP, KA, KE MP, MI, MA, UT, UP, PU TR and TN)
Other crime against women	17 states (AS, BI, CH, HA, JK, KA, MA TR, MP, ME, OD, SI WB, UT, UP, NA and PU)	11 states (AP, ARP, GO, GU, HP, J&K, KE MR, MI, TN and RA)

Table 7: CAGR of Sexual crimes, Offence related to Dowry and Other crime against women

States	Sexual crimes	Offence related to Dowry	Other crime against women
Andhra Pradesh	0.5	0.5	1.16
Arunachal Pradesh	0.63	0.19	0.45
Assam	0.28	0.15	0.23
Bihar	0.86	0.49	0.14
Chhattisgarh	0.83	1.26	0.15
Goa	0.15	0.7	0.49
Gujarat	0.68	0.9	0.59
Haryana	0.43	0.5	0.15
Himachal Pradesh	0.63	1.35	0.46
Jammu & Kashmir	0.61	0.18	0.5
Jharkhand	0.44	0.33	0.33
Karnataka	0.37	0.54	0.81
Kerala	0.49	0.7	0.72
Madhya Pradesh	0.84	0.55	0.17
Maharashtra	0.33	0.82	0.17
Manipur	0.33	0.15	0.72
Meghalaya	0.24	0.1	0.21
Mizoram	0.75	1.71	0.76
Nagaland	0.46	0	0.24
Odisha	0.34	0.41	0.2
Punjab	0.36	0.78	0.29
Rajasthan	0.47	0.42	0.55
Sikkim	0.77	0	0.11
Tamil Nadu	1.88	0.48	2.97
Tripura	0.29	0.48	0.31
Uttar Pradesh	0.67	0.74	0.31
Uttarakhand	0.44	0.78	0.38
West Bengal	0.23	0.22	0.2

Table 8: Performance of the major Indian states with respect to All India in terms of CAGR

Variables	Good Performing states	Bad Performing states
Sexual crimes	17 states (AS, HA, GO, MA, MR, KE, KA, GU, JK, ME, NA, OD, PU RA,TR,UT,WB)	11 states (BI, AP, ARP, J&K, MP, CH, HP, MI, SI, TN, UP)
Offence related to Dowry	13 states (ARP, AS, KE, MR, GU, J&K, JK, ME, NA, SI, OD RA, WB)	15 states (BI, AP, KA, MP, MA, GO, HA, CH, HP, MI, PU, UT, TN UP,TR)
Other crime against women	18 states (AS, BI, JK, MA, CH, GU, HA, KE, MP, NA, UT, WB ME,SI,UP,OD,PU,TR)	10 states (MR, ARP, AP, GO, J&K, KA, HP,MI,RA,TN)

Table 9: Estimated results of Panel regression

Variables	Coefficient	t-Statistic	Prob.
C	-27758.3	-2.26505	0.0247
EG	2137.037	2.307354	0.0222
ED	-42.4751	-1.79938	0.0736
FB	-10.1545	-2.80336	0.0056
H	1.463445	1.866111	0.0636
P	3.786368	25.5846	0
FB*FB	-0.0025	-11.4541	0
EG*EG	-216.11	-2.1312	0.0344
ED*FB	-3.82272	-4.46001	0
Adjusted R-squared	0.977664		
F-statistic	424.126		
Prob(F-statistic)	0		

Table 10: Marginal Effect and Wald Statistics of the variables from the Panel regression

	Variables		
	EG	**FB**	**ED**
Marginal Effect	-94.65	-25.96	-242.48
F-statistic	23.51087	45.94393	10.33732
Chi-square	47.02173	137.8318	20.67465

***, ** and *significant at 1%, 5% and 10% level of significance respectively