CRIME AGAINST INDIAN WOMEN – WOMEN CRIME SUSCEPTIBILITY INDEXES (WCSI): A PRINCIPAL COMPONENT ANALYSIS

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Abstract: This paper assesses the women vulnerability to crime across 28 different states and 7 Union Territories of India on the basis of various indicators, Rape, Kidnapping and Abduction, Dowry Deaths, Cruelty by husband and relatives, Assault with an intent to outrage modesty, Insult to Modesty, Immoral Trafficking and Dowry cases. Principal Component analysis has been adopted to combine these variables to form Women Crime Susceptibility Index. The Index ranks the regions according to exposure and defenselessness of females to crime. A higher index value is indicative of higher crime susceptibility. The paper also briefly relates the index to selected different demographic patterns. Thereby, besides building the crime susceptibility in a clean framework, the paper is directionally indicative of policy actions to reduce women susceptibility to crime. The paper also aims to reflect on the contribution of different factors to the final index. Thereby would provide guidelines as to the areas that need attention in different states as each region is facing different issues with differing intensities. The major findings of the analysis are West Bengal and Assam rank highest on women susceptibility to crime followed by Tripura and Delhi. The safest states for women are Goa and Mizoram.

Keywords: Crime against women Index; Principal Component Analysis; State Female Population Proportion; State targeted policies; Women Laws

INTRODUCTION

In societies where women status is low, crime against women are likely to be higher. It is also quite evident in case of India as thousands of cases are registered under Indian Panel Code every year. Moreover, the reported cases are much smaller than the actual number. Therefore, the national policy for the empowerment of women (Government of India, 2001) stated that crimes against women, their incidence, prevention, investigation, detection and prosecution will be regularly reviewed at all crime review forum and conferences at the national, state and district levels. The policy also emphasizes on elimination of discrimination and all forms of violence against women and the girl child.

Women in India experience violence in different form throughout their lives and it is widespread through boundaries of caste, class, religion and region [1,2,3]. Among the different gender based violence, domestic violence is the most prevalent in India. Violence against women is a result of gender relations that assumes men to superior than women. Evidences from population surveys clearly reflect that there has been a rise of domestic violence from 21% to 48% of women from different socio- economic -cultural settings. Prior studies on domestic violence have depicted that it is deeply rooted in socio- cultural norms.

In India, the National Crime Record Bureau under Ministry of Home Affairs brings out the crime statistics at annual basis since 1953. However, there has been little or no work to bring out a comparison across different states in lieu of crime against women that brings together different parameters accounting to crime through a formal approach. This paper primarily aims to understand the trends and patterns of crimes against women across Indian states. Further, incidence of crimes against women will be studied in association with selected demographic characteristics of the reference population. This is surely to have significant policy implications and prioritising the areas of intervention at various levels. This will help in effectively identifying the vulnerable target groups and subgroups of women who are at risk .This is also important in order to take proper policy measure and help of NGOs, police and legal institutions to protect women against crime.

VARIABLES AND SOURCES

For developing the Women Susceptibility index, the data has been taken from National Crime Records

Bureau (NCRB) for year 2012 with respect to incidence of crime committed against women which is an attached office of Ministry of Home Affairs (MHA), Government of India. The variables studied for the analysis are [4] as follows.

Rape (Hereafter Rape)

The cases are registered under The Central Government's Act, Section 376 of the Indian Penal Code (IPC), 1860.

Sexual intercourse with a woman under any of the following circumstances: (a) Against her will; (b) Without her consent; (c) With her consent, when her consent has been obtained by putting her or any person in whom she is interested in fear of death or of hurt; (d) With her consent, when the man knows that he is not her husband, and that her consent is give because she believes that he is another man to whom she is or believes herself to be lawfully married; (e) With her consent, when, at the time of giving such consent, by reason of unsoundness of mind or intoxication or the administration by him personally or through another of any stupefying or unwholesome substance, she is unable to understand the nature and consequences of that to which she gives consent; 6) With or without her consent, when she is under sixteen years of age.

Kidnapping And Abduction (Hereafter Kidnap & Abdc): Sections 363-369, 371-373 Indian Penal Code.

Taking or enticing any minor under sixteen years of age if a male, or under eighteen years of age if a female, or any person of unsound mind, out of the keeping of the lawful guardian of such minor or person of unsound mind, without the consent of such guardian; compelling by force, or by any deceitful means, inducing any person to go from any place.

Dowry Deaths (Hereafter DowDeath): Section 340B Indian Penal Code.

Where the death of a woman is caused by any burns or bodily injury or occurs otherwise than under normal circumstances within seven years of her marriage and it is shown that soon before her death she was subjected to cruelty or harassment by her husband or any relative of her husband for, or in connection with, any demand for dowry, such death shall be called "dowry death", and such husband or relative shall be deemed to have caused her death.

Cruelty by Husband and Relatives (Hereafter Cruelty): Section 498A Indian Penal Code.

Any wilful conduct which is of such nature as is likely to drive the woman to commit suicide or to cause grave injury or danger to life, limb or health (whether mental or physical) of the woman; or harassment of the woman where such harassment is with a view to coercing her or any person related to her to meet any unlawful demand for any property or valuable security is on account of failures by her or any person related to her to meet such demand.

Assault on Woman with intent to outrage her modesty (Hereafter AssaultToMod): Section 354 Indian Penal Code.

Assault or criminal force to woman with intent to outrage her modesty

Insult to Modesty of woman (Hereafter InsultToMod): Section 509 of Indian Penal Code

Word, gesture or act intended to insult the modesty of a woman

Immoral Traffic (P) Act 1956 (Hereafter ImmTraffic)

A prostitute who seduces or solicits shall be prosecuted. A client is guilty of consorting with prostitutes and can be charged if he engages in sex acts with a sex worker within 200 yards of a public place or "notified area. Pimps or live-in lovers who live off a prostitute's earnings are guilty of a crime. Any adult male living with a prostitute is assumed to be guilty unless he can prove otherwise.

Dowry Prohibition Act, 1961 (Hereafter Dow ProAct)

If any person, after the commencement of this Act, gives or takes or abets the giving or taking of dowry, he shall be punishable.

CONSTRUCTION OF WOMEN CRIME SUSCEPTIBILITY INDEX (WCSI)

Women Crime Susceptibility Index has been calculated using **Principal Component Analysis (PCA)**. PCA is used to study the patterns of similarities and differences in the data. It is a multivariate statistical technique that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called *principal components (λ)*.

This transformation is defined in such a way that the first principal component has the largest possible variance (that is, accounts for as much of the variability in the data as possible), and each succeeding component in turn has the next highest variance possible under the constraint that it be orthogonal to (i.e., uncorrelated with) the preceding components.
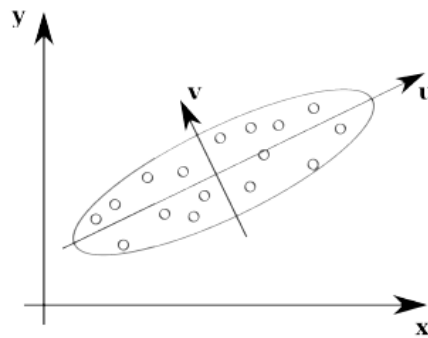
Figure 1: PCA for Data Representation
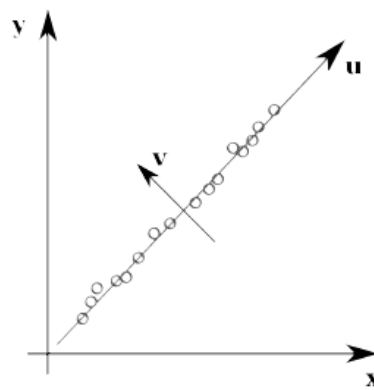
Figure 2: PCA for Dimension Reduction

Table 1: Correlation Matrix (A) of the Population Proportion Variables

Factors	Rape	Kidnap & Abdc	DowDeath	Cruelty	AssaultToMod	InsultToMod	ImmTraffic	DowProAct
Rape	1							
Kidnap & Abdc	0.100	1						
DowDeath	0.014	0.265	1					
Cruelty	0.140	0.382	0.420	1				
AssaultToMod	0.509	0.210	0.140	0.326	1			
InsultToMod	-0.118	0.178	0.093	0.214	0.416	1		
ImmTraffic	-0.159	-0.271	-0.350	-0.181	-0.219	0.050	1	
DowProAct	-0.164	-0.064	0.447	0.056	0.109	0.199	-0.059	1

Table 2: Eigen Values

	λ1	λ2	λ3	λ4	λ5	λ6	λ7	λ8
Eigen values	2.38886	1.47328	1.21442	1.02066	0.73730	0.55015	0.36182	0.25351
Variability	29.86	18.42	15.18	12.76	9.22	6.88	4.52	3.17
Cumulative	29.86	48.28	63.46	76.22	85.44	92.31	96.84	100

Table 3: Eigenvectors

Factors	λ1	λ2	λ3	λ4	λ5	λ6	λ7	λ8
Rape	0.22985	-0.60638	0.02661	-0.42239	0.23119	-0.24630	-0.18654	-0.50144
Kidnap & Abdc	0.37941	-0.09040	0.16871	0.57900	-0.14284	-0.67004	0.11944	0.02330
DowDeath	0.42175	0.38982	0.30798	-0.14294	0.22948	-0.02063	-0.67184	0.22454
Cruelty	0.45238	0.00447	0.03598	0.31143	0.56365	0.47202	0.35992	-0.16433
AssaultToMod	0.44091	-0.31215	-0.38965	-0.27461	-0.10890	0.03119	0.15966	0.66529
InsultToMod	0.27557	0.17255	-0.68129	0.21339	-0.31953	0.14139	-0.32928	-0.39253
ImmTraffic	-0.33348	0.05504	-0.49610	0.13886	0.66383	-0.36145	-0.13886	0.17253
DowProAct	0.19784	0.58473	-0.11218	-0.47823	0.03403	-0.33992	0.46564	-0.21010

For example, in Fig. 1, suppose that the triangles represent a two variable data set which we have measured in the X-Y coordinate system. The principal direction in which the data varies is shown by the U axis and the second most important direction is the V axis orthogonal to it. If we place the U - V axis system at the mean of the data it gives us a compact representation. If we transform each (X; Y) coordinate into its corresponding (U; V) value, the data is de-correlated, meaning that the co-variance between the U and V variables is zero.

For a given set of data, principal component analysis finds the axis system defined by the principal directions of variance (i.e. the U - V axis system in Fig. 2). The directions U and V are called the principal components [5].

Following the PCA, WCSI (shown in Eq. (1)) is computed as an unobserved or a latent variable that cannot be observed directly. The WCSI is assumed to be linearly related to the above described independent variables and an error component.

$$WCSI_k = \beta_1 X_{1k} + \beta_2 X_{2k} + \beta_3 X_{3k} + \beta_4 X_{4k} + \beta_5 X_{5k} + \beta_6 X_{6k} + \beta_7 X_{7k} + \beta_8 X_{8k} + \varepsilon \qquad (1)$$

where $WCSI_k$ represents the WCSI for state/UT 'k', and X_{1k}.......X_{8k} are the proposed indicators corresponding to the state 'k' and ε is the error term. The error term (ε) captures the variation differentiating the states on the index that is not explained by the proposed indicators.

The first step, to the analysis is calculating the variables as a proportion of the female population in each state as shown in Eq. (2).

$$x_{ik} = X_{ik}/FPop_k, \text{ for i= Rape, Kid\&Abd……DowProAct} \qquad (2)$$

Thereafter, 8 X 8 correlation matrix **A** is calculated for the above mentioned population proportion variables as shown in Table 1.

Using the Correlation Matrix (A), following determinant equation is computed as shown in Eq. (3):

$$Determinant (A - \lambda I) = I(A - \lambda I)I = 0 \qquad (3)$$

where I is the 8 X 8 identity matrix. This equation is known as the characteristic equation and has 8 roots (λ_1…λ_8)

These 8 roots are the Eigen Values corresponding to Matrix **A.** We arrange the λ in the descending order such that **$\lambda_1 > \lambda_2 > \lambda_3 > \lambda_4 > \lambda_5 > \lambda_6 > \lambda_7 > \lambda_8$** as evident from Table 2 and corresponding to each λ, we solve the below matrix equation (Eq. (4)):
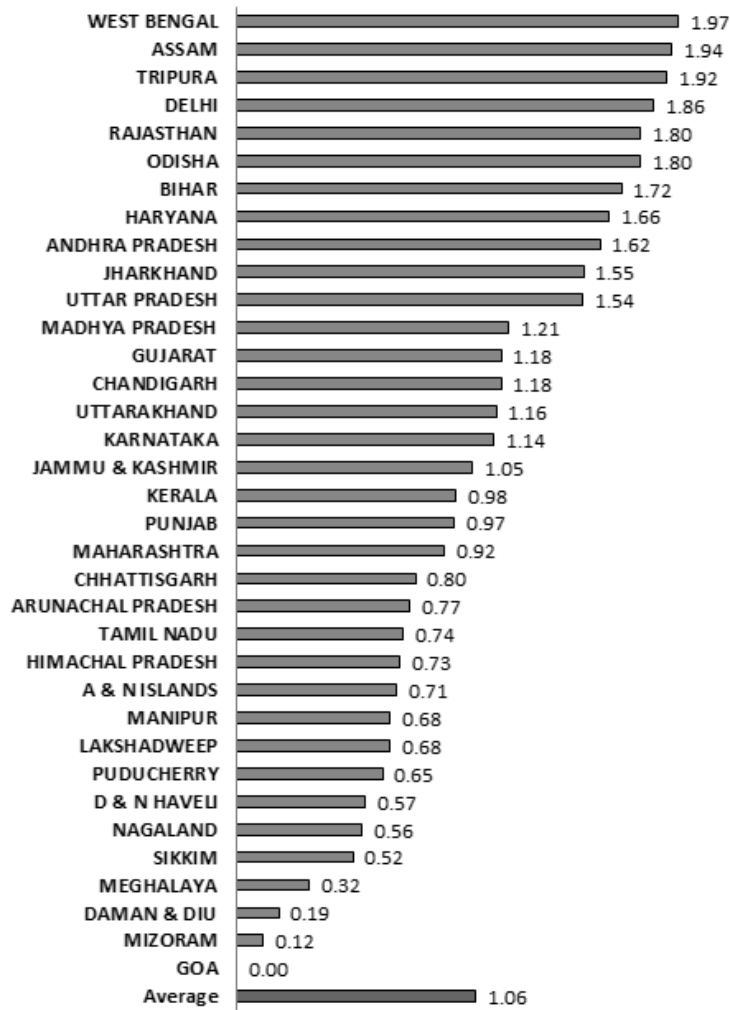
Figure 3: Women Crime Susceptibility Index (2012)

$$(A - \lambda_j I)F'_j = 0 \tag{4}$$

where $F_j = [f_{1j}, f_{2j}, ... f_{8j}]$ is a 1X 8 Eigen Vector corresponding to λ_j subject to the condition that $F'_j F_j = 1$. $F'j$ values are contained in Table 3.

In order to calculate the Index, the following calculations as shown in Eq. (5) and Eq. (6) are performed:

$$P_{1k} = x_k F'_1 \quad \ldots\ldots\ldots \quad P_{8k} = x_k F'_8 \tag{5}$$

Where, $x_{k = [}x_{k1}, x_{k2}, x_{k3}, x_{k4}, x_{k5}, x_{k6}, x_{k7}, x_{k8]}$ is a vector of standardized factors for state 'x'.

$$\mathbf{WCSI_k} = \frac{\lambda_1 P_{1k} + \lambda_2 P_{2k} + \lambda_3 P_{3k} + \lambda_4 P_{4k} + \lambda_5 P_{5k} + \lambda_6 P_{6k} + \lambda_7 P_{7k} + \lambda_8 P_{8k}}{\lambda_1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 + \lambda_6 + \lambda_7 + \lambda_8} \tag{6}$$

Thus, the weighted average of the population proportion standardized variables weighed upon the principal components and the features enables to work out the relative importance of the respective factors in determining the WCSI.

RAPE

State	Value
WEST BENGAL	4.65
ASSAM	11.34
TRIPURA	12.77
DELHI	8.26
RAJASTHAN	6.19
ODISHA	7.15
BIHAR	1.93
HARYANA	5.6
ANDHRA PRADESH	3.14
JHARKHAND	5.22
UTTAR PRADESH	2.02
MADHYA PRADESH	9.72
GUJARAT	1.66
CHANDIGARH	4.21
UTTARAKHAND	2.98
KARNATAKA	2.09
JAMMU & KASHMIR	5.34
KERALA	5.71
PUNJAB	5.25
MAHARASHTRA	3.36
CHHATTISGARH	8.41
ARUNACHAL PRADESH	7.71
TAMIL NADU	2.18
HIMACHAL PRADESH	5.44
A & N ISLANDS	4.92
MANIPUR	5.11
LAKSHADWEEP	0
PUDUCHERRY	1.89
D & N HAVELI	1.74
NAGALAND	1.93
SIKKIM	11.64
MEGHALAYA	12.46
DAMAN & DIU	5.1
MIZORAM	20.81
GOA	6.33
Average	5.84

KIDNAPPING & ABDUCTION

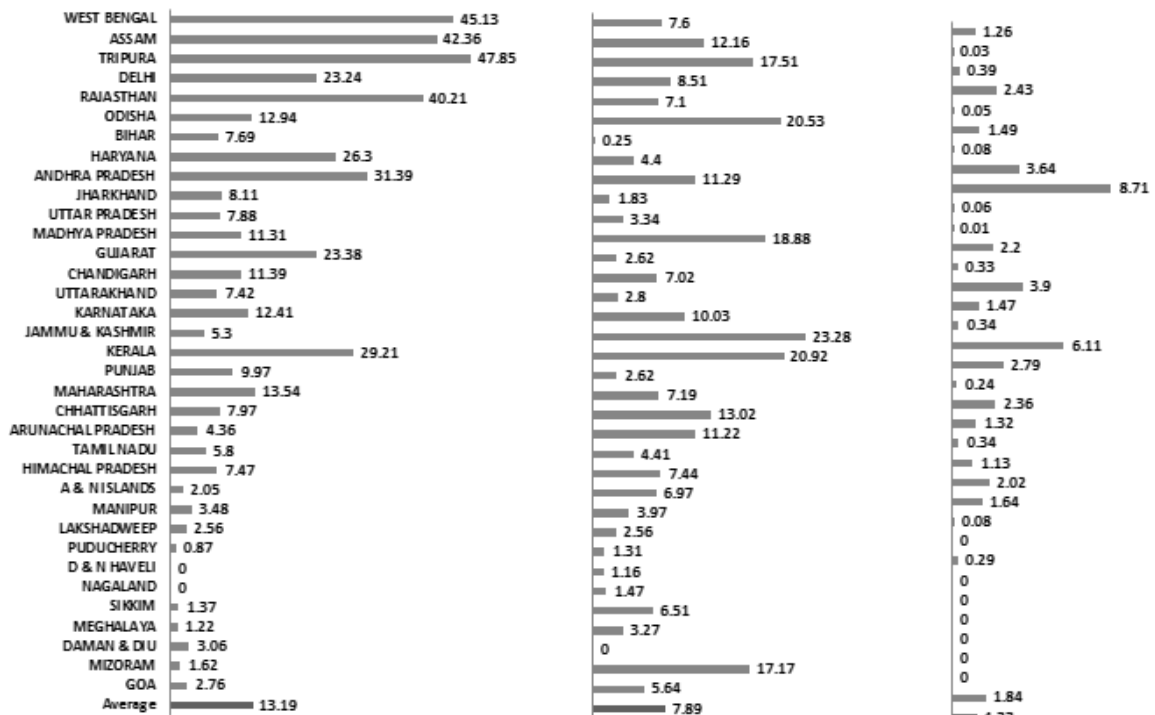| Value |
|---|
| 9.47 |
| 22.21 |
| 6.36 |
| 25.28 |
| 8.15 |
| 6.69 |
| 7.9 |
| 7.54 |
| 3.29 |
| 5.05 |
| 8.14 |
| 3.2 |
| 5.36 |
| 10.3 |
| 5.16 |
| 3.6 |
| 18.33 |
| 1.2 |
| 5.32 |
| 2.08 |
| 2.85 |
| 9.72 |
| 5 |
| 4.52 |
| 2.87 |
| 10.78 |
| 0 |
| 2.33 |
| 5.23 |
| 0.92 |
| 3.42 |
| 1.82 |
| 0 |
| 0.61 |
| 1.84 |
| 6.19 |

DOWRY DEATHS

Value
1.35
0.93
2.06
1.57
1.44
2.57
2.66
2.16
1.18
1.94
2.31
2.11
0.07
0.78
1.43
0.73
0.14
0.18
0.91
0.6
0.66
0.17
0.32
0.06
0.82
0
0
0
0
0
0.34
0.08
0
0
0
0.84

CRUELTY

State	Value
WEST BENGAL	45.13
ASSAM	42.36
TRIPURA	47.85
DELHI	23.24
RAJASTHAN	40.21
ODISHA	12.94
BIHAR	7.69
HARYANA	26.3
ANDHRA PRADESH	31.39
JHARKHAND	8.11
UTTAR PRADESH	7.88
MADHYA PRADESH	11.31
GUJARAT	23.38
CHANDIGARH	11.39
UTTARAKHAND	7.42
KARNATAKA	12.41
JAMMU & KASHMIR	5.3
KERALA	29.21
PUNJAB	9.97
MAHARASHTRA	13.54
CHHATTISGARH	7.97
ARUNACHAL PRADESH	4.36
TAMIL NADU	5.8
HIMACHAL PRADESH	7.47
A & N ISLANDS	2.05
MANIPUR	3.48
LAKSHADWEEP	2.56
PUDUCHERRY	0.87
D & N HAVELI	0
NAGALAND	0
SIKKIM	1.37
MEGHALAYA	1.22
DAMAN & DIU	3.06
MIZORAM	1.62
GOA	2.76
Average	13.19

ASSAULT TO MODESTY

Value
7.6
12.16
17.51
8.51
7.1
20.53
0.25
4.4
11.29
1.83
3.34
18.88
2.62
7.02
2.8
10.03
23.28
20.92
2.62
7.19
13.02
11.22
4.41
7.44
6.97
3.97
2.56
1.31
1.16
1.47
6.51
3.27
0
17.17
5.64
7.89

INSULT TO MODESTY

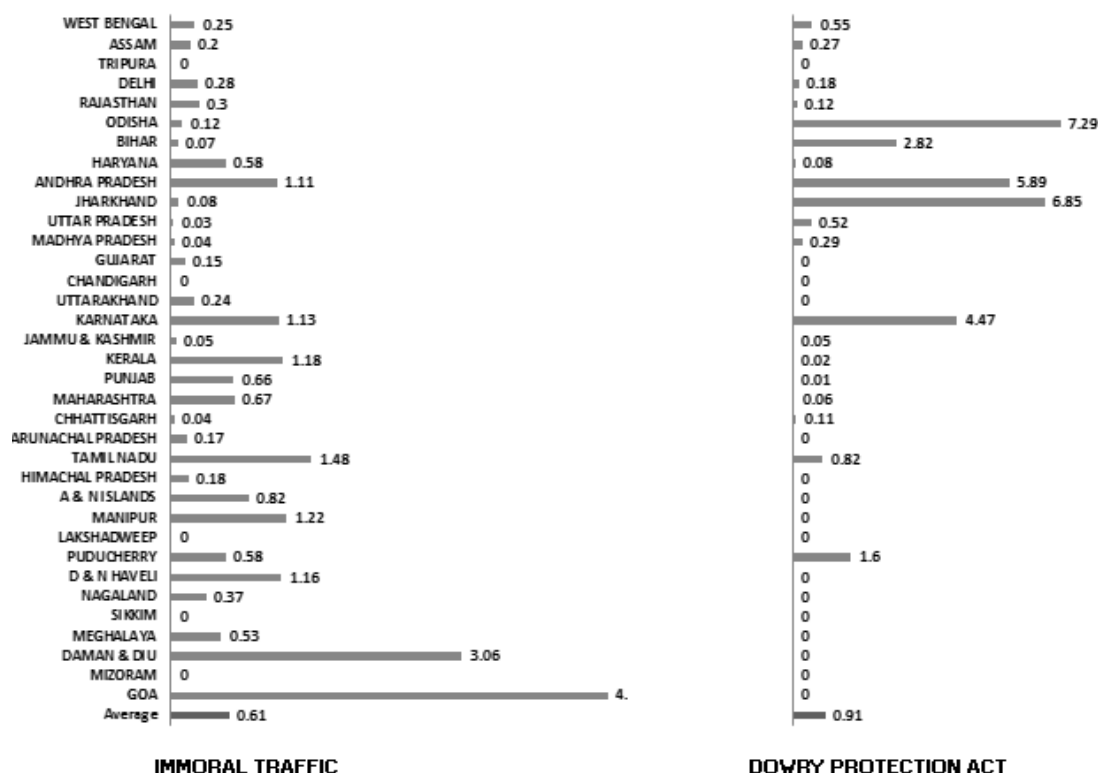| Value |
|---|
| 1.26 |
| 0.03 |
| 0.39 |
| 2.43 |
| 0.05 |
| 1.49 |
| 0.08 |
| 3.64 |
| 8.71 |
| 0.06 |
| 0.01 |
| 2.2 |
| 0.33 |
| 3.9 |
| 1.47 |
| 0.34 |
| 6.11 |
| 2.79 |
| 0.24 |
| 2.36 |
| 1.32 |
| 0.34 |
| 1.13 |
| 2.02 |
| 1.64 |
| 0.08 |
| 0 |
| 0.29 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 1.84 |
| 1.33 |

Figure 4: States ranking on individual parameters

EMPIRICAL RESULTS

The WCSI: The States Ranking according to the WCSI is shown in Fig. 3. Index of 1 indicates the states/UT with women most susceptible to crime and tending towards 0, indicates the states/UT with women least susceptible to crime. All India susceptibility average is estimated at 1.06.

The analysis suggests that women in West Bengal are most susceptible to crime with WCSI of 1.97, followed by Assam, Tripura, Delhi and other states. Goa with WCSI of nearly 0 is the least susceptible state. The average Index if the Indian states turn is estimated at 1.06.

States Ranking on Individual parameters: As the WCSI is the summary of different factors with relative importance and variations; it is insightful to look at the performance of these factors in different states. Fig. 4 is a reflection of the true values (in proportion to female population in each state) of each of these factors in each state.

Referring back to Table 3 that illustrates the Eigen Vectors of the principal components, for λ_1, the first principal component explaining the maximum variance, there exist a strong positive correlation among Cruelty against women, Assault to modesty and Dowry Deaths. This is followed by kidnapping and Abduction and Rape. Immoral Trafficking is however, negatively correlated with these variables. This relationship among the individual parameters is directional in explaining the States Index for crime against women.
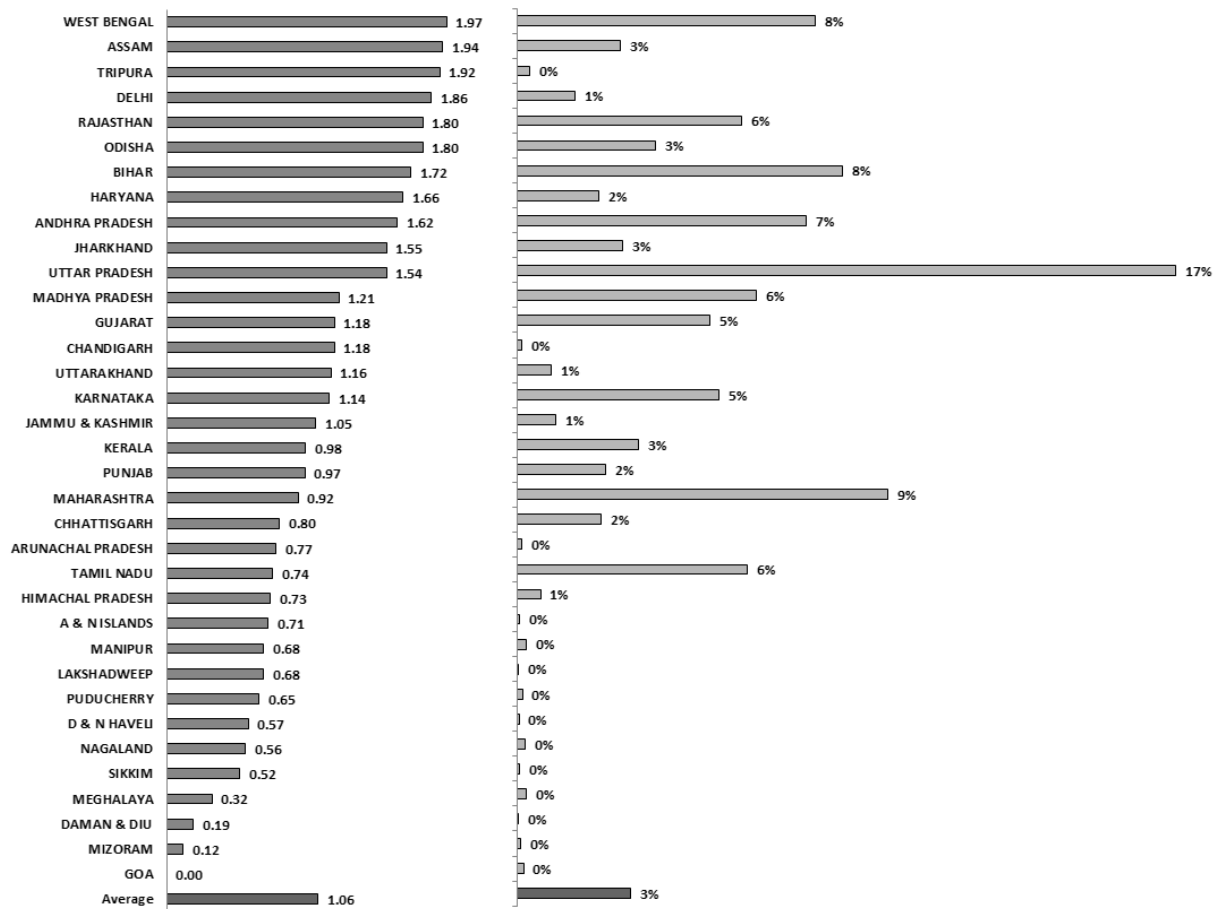
State	WCSI	Population %
WEST BENGAL	1.97	8%
ASSAM	1.94	3%
TRIPURA	1.92	0%
DELHI	1.86	1%
RAJASTHAN	1.80	6%
ODISHA	1.80	3%
BIHAR	1.72	8%
HARYANA	1.66	2%
ANDHRA PRADESH	1.62	7%
JHARKHAND	1.55	3%
UTTAR PRADESH	1.54	17%
MADHYA PRADESH	1.21	6%
GUJARAT	1.18	5%
CHANDIGARH	1.18	0%
UTTARAKHAND	1.16	1%
KARNATAKA	1.14	5%
JAMMU & KASHMIR	1.05	1%
KERALA	0.98	3%
PUNJAB	0.97	2%
MAHARASHTRA	0.92	9%
CHHATTISGARH	0.80	2%
ARUNACHAL PRADESH	0.77	0%
TAMIL NADU	0.74	6%
HIMACHAL PRADESH	0.73	1%
A & N ISLANDS	0.71	0%
MANIPUR	0.68	0%
LAKSHADWEEP	0.68	0%
PUDUCHERRY	0.65	0%
D & N HAVELI	0.57	0%
NAGALAND	0.56	0%
SIKKIM	0.52	0%
MEGHALAYA	0.32	0%
DAMAN & DIU	0.19	0%
MIZORAM	0.12	0%
GOA	0.00	0%
Average	1.06	3%

Figure 5: Women Crime Susceptibility Index (2012) vs. State Female population proportion with respect to total Indian female population

(a) **West Bengal**, as we see is around or above the average crime rate in most of the indicators. Specifically, for the parameters, "cruelty against women", "Assault to Modesty" and "Dowry Deaths" that are highly positively correlated in the first principal component, West Bengal ranks high above average making it the state most susceptible to crime against women. (b) **Assam**, similarly, is high on the "Cruelty against women" and "Assault to modesty". Though it ranks lower on "dowry deaths", Assam ranks second highest on "Kidnapping and Abductions" and "Rape" the next highest positively correlated variables to Cruelty and Assault. Hence Assam seconds on the list to crime against women. (c) **Tripura** also depicts similar patterns on these variables with being the third most unsafe state for women in India. (d) **North East states of India** are generally expected to be low on women crime rates with the greater mobility and visibility than women in other parts of India. This is reflected in the 5 North East states out of 7 sisters, **Arunachal Pradesh,**

Manipur, Nagaland, Sikkim and Meghalaya having less than average WCSI. Assam and Tripura being an exception are a reflection of a grave need to investigate deeper into the factors that separate these two states on Women Crime susceptibility index from other five at extreme ends. Specific laws need to be set in practise that deals specifically with domestic crime, women assault and rape. (e) **Goa** ranks highest on Immoral Trafficking, however is low on other parameters of crime against women. Women in Goa are safer on domestic crimes and social evils like dowry. It also scores lower on rape reports and women assault. This keeps Goa still the safest place for women despite high on immoral trafficking. However, the policy makers cannot take Goa off their shoulders on women safety. Immoral Trafficking is a major and growing issue in Goa. Where the national average is as low as 0.61, Goa has scores 4 driving this average. Thus, the policy workers can achieve a near zero crime against women in Goa if they could manage the problem of Immoral Trafficking. (f)

Daman and Diu is on the same radars as Goa. Low on Cruelty by relatives and assault indicative of a good social status enjoyed by women, a reflection of equality of right and dignity. However, being second highest in immoral trafficking, though Daman and Diu remains as the third safest place for women in India, attention needs to be paid on laws on immoral trafficking. (g) **Jammu and Kashmir**, ranks third highest on Kidnapping and Abduction and Assault and Insult to Modesty of women. However, it is still low on cruelty against women, an important parameter in WCSI. Hence, J&K is on average index of crime against women.

Trends are also suggestive that immoral trafficking is more evident in Southern and South east parts of India, specifically those close to coastal regions. Hence, the possibility of immoral trafficking through the seas could not be avoided. Therefore, stringent and more vigilant laws could provide an answer to the most hideous crime against women.

Results are also indicative of the fact that different parts of India as is guided by different cultural values and socio economic conditions see prevalence of certain factors more than others in different regions. Where cruelty by relatives, domestic crime, and women assault are high in Eastern and Western parts of India, it is immoral trafficking that adds to women crime in southern coastal regions.

The WCSI and the State Female Population Proportion

The female population proportion is computed as per the Eq. (7). Furthermore, Fig. 5 shows a comparison of the WCSI with the proportion of female population in each state with respect to the total female population in India [6].

$$\text{Female Popualtion Proportion} = \frac{\text{State Female Population}}{\text{Total Female Population in India}} \quad (7)$$

This comparison reveals the following:

(a) **West Bengal** that is home to only 8% of the Indian women is on the top of the index making it most vulnerable state for women to crime. (b) **Tripura**, lying in the North East region of India that does not shelter even 1% of the total Indian women is third on the WCSI. (c) **Uttar Pradesh**, that has the greatest percentage of female Indian population (17%), though above the average index of 1.06, still ranks lower than few other states like Odisha (Orissa), Delhi, Haryana that have merely 2-3% of the Indian female population.

Hence, crime index is not proportion to the women population percentage. It is not a question of a big state, more women; it is question of strengthening parameters that define women safety, elevating socio-economic status of women that guarantee equitable rights and educating the mind sets that provide the female population its dignity and rightful place.

CONCLUSIONS

PCA analysis as in Tables 2 and 3 indicates that the first principal component λ_1, that contributes maximum in explaining the variation has four major factors that are highly positively correlated to each other and thereby explaining the variation. Cruelty by husband and relatives (45%), Assault with intent to outrage modesty (44%), Dowry Deaths (42%), Kidnapping and Abduction (38%) are the variables contributing to Principal component 1 and maximum variance.

The states of West Bengal, Assam, Tripura, Delhi, Rajasthan etc. that are on the critical radar of the Index experience high exposure of women to the above mentioned four factors.

Thus, the law and order governing body should aim at developing and implementing policies that curb the cruelty exercised by the husband and relatives, women assault, dowry deaths and kidnapping and abduction.

It is high time that the policy makers realize that more than anything it is important to create awareness among the women about their rights. The machinery of the implementation of laws should be easily approachable and should be free from inefficiencies and corruption. The procedure in the court of law for the redress of the grievances should be simple not cumbersome, costs and delay should not be involved in such matters.

As previous studies have emphasized, there exists a strong relationship between education and elevating status of women. Hence, explicit focus needs to be paid on female education and bringing male and female to an equal status in the economy.

As is said, India is diverse in its culture and geography, so are the factors governing women susceptibility to crime in different parts of the country. There is an urgent need to work on the most important factors that differentiate and bring a state to top the list on women crime susceptibility. And also at the same time, identify on the differentiating factors in each state to target specific policies and make India a safer and equitable place for women to live in.

REFERENCES

[1] Miller, B.D. 1999, Wife Beating in India: Variations on a Theme. In To have and to hit, edited by a. J. C. C. J.K.B. Dorothy Ayers Counts. Urbana and Chicago: University of Illinois Press.

[2] Rao, S., I. S., et al. 2000. Domestic Violence: A Study of Organizational Data. Domestic Violence in India: A Summary Report of Four Records Studies. Washington, DC:International Center for Research on Women.

[3] Visaria, L. (2000) 'Violence against women: a field study' Economic and Political Weekly, Vol. 85, No. 10: 1742–1751

[4] http://www.aeaweb.org/aej/app/app/2011-0220_app.pdf

[5] For details refer Jolliffe (1986). Kim and Mueller (1979). UNCTAD (2005), and Stockburger (1996)

[6] http://www.indiaonlinepages.com/population/india-current-population.html

[7] NCRB. 2012. National Crime Records Bureau. Delhi: National Crime Records Bureau of India.

[8] Das, S. (1990), Crime and punishment in Ancient India ,New Delhi, Abhinav Publications.

[9] Dave, A. and Solanki, G. (2001), Journey from Violence to Crime: A study of Domestic Violence in the City of Mumbai, Mumbai,Tata Institute of Social Sciences.

[10] Gordon, L.P. (2002) ,Violence against Women, NY, Nara Science Publishers.

[11] Heise, L.L. 1998, Violence Against Women: An integrated, ecological framework. Violence Against Women ,4 (3), 262-290

[12] Flowers, R. B. (1994), The Victimization and Exploitation of Women and Children - A Study of Physical Mental and Sexual Maltreatment in United States, USA, Mc Fasland & Company.

[13] INCLEN,2000, Domestic Violence in India 3: A Summary Report of a Multi-Site Household Survey. Washington, DC.: Intrenational Center for Research on Women and The Center for Development and Population Activities

[14] Visaria, L. 1999. Violence against Women in India : Evidence from Rural Gujarat. Domestic Violence in India: A Summary Report of Three Studies. Washington, DC.: International Center for Research of Women.

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