



Patterns of Crimes against Women in Million Cities of India: A Spatial Analysis

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Abstract:

The rapid urbanisation in India has led to emergence of million cities which increased to 53 in 2011 from 23 in 2001, ruralisation and haphazard development along with shortage of basic needs like food and shelters in these cities. In such a situation, large cities particularly million one became more vulnerable to crimes. The prime victims of crimes are women. In this study, an attempt has been made to analyse the trend and spatial patterns of major crimes against women in the million cities of India along with examination of association of various crimes with the socio-economic and demographic attributes. Data from the various reports of the National Crime Record Bureau (NCRB) have been used. Major crimes against women have been mapped using Quid GIS. It is found that rate of crimes is high in metropolitan cities, and Delhi is on the top in almost all crimes which are discussed here. There are significant negative correlations with dowry; and sex ratio and literacy. The negative significant correlation is also found between literacy and assault with intent to outrage women's modesty. Positive correlations have been established statistically between slum population and dowry; and assault against women. The study suggests creating more reliable data on crimes would be more helpful for research and management of crimes.

Keywords: Cognizable crimes, Quid GIS, million cities, ruralisation, urbanisation

Introduction:

Incidence of crimes in the society has always been a serious concern in the human history. Moreover, data show that with phenomenal growth in economy, technologies and changes in the social norms and values have led to increase in crimes. Even advancement of technology has not been able to control or free our society from crimes; instead it has changed the nature and types of crimes. There are two types of crimes in India-(i) Cognizable (ii) Non-Cognizable. The first

one are those for which police may arrest offender without warrant and police may come in action immediately after the occurrence of crime. While in case of second one, the non-cognizable crimes, police cannot arrest without warrant from the court. No-cognisable crimes are related to civil matters and action is taken after court order. Cognisable includes Indian Penal Code (IPC) and Special & local Law (SLL) crimes. In this study, IPC cognizable crimes (referred as crime) have been taken into account for analysis. Crimes have been subject matter of study by different disciplines like Criminology, Sociology, Psychology etc. with the purpose of making society crime free. But Geographers too came into it, although a little late and highlighted the role of spatial analysis in crime studies and added the fourth dimension i.e. space apart from other three dimensions-the law/law enforcement, offender and target (Brantingham, 1981). The analysis of regional variations in crimes has been prime focus of geographers to identify areas/hot spots of various crimes (Harber, D.T, 1989). Areas having different socio-economic, demographic and physical characteristics have different patterns of concentration of crimes. Identification of such areas was major concerns of the Geographers of crime (Bagra et al. 2014).

India is the second most populace county of the world having diverse geographical, socio-cultural and economic reality with demographic political system. There is also great divide in urban and rural areas, and also within urban centres. There were total 7935 town and cities with 37.71 crores (31.16%) population in India in 2011. Of which 495 urban centres have one lakh and more population. Number of million cities has increased from 18 in 2001 to 53 in 2011 having about 42.61 % of the total urban population. The large scale rural-urban migration has made large cities particularly metro-cities too diverse and socially more complex. This diversity is reflected in the nature and patterns of crimes in urban areas of the county. The study of million cities with this perspective would be interesting and useful for various purposes. There have been many studies on crimes in the western countries.

Shaw and Mckay (1942 and 1969) studied the spatial patterns of crime within American cities and prepared maps of delinquent neighbourhoods. Johnson (1980) worked on how the geographical patterns of crime affected the development of policing in Philadelphia city. Devery (1992) studied spatial patterns of rate of crime and mapped the localities of crime in Sydney. Venugopal (1967) examined the socio-economic factors and their effects on crime in India. The patterns of dacoity in Chambal, Madhya Pradesh were studied by Katre (1972). Shivamurthy (1982) examined the spatio-temporal variation in the occurrence of theft in Madras city and

found that periphery of the city were more prone to the incidence of theft. The inter-city patterns of crime in India was studied by Dutt and Venugopal (1983) and they concluded that the patterns of crimes in Indian cities were the same as it occurs in general region. Using GIS, patterns of crime of Chennai city was analysed by Jaishankar (et al. 2004). Based on the NCRB data, Marwah (2014) analysed the patterns and trends of homicide in India. He also mapped the incidence of murder. The review of available literatures indicates that the spatial patterns of cognizable crimes against women across million cities is not given due importance. In the present paper, an attempt has been made to examine patterns of serious crime against women in the million cities of India. It also explores association of various crimes with different socio-economic and demographic attributes.

Objectives:

Following are the objectives of the study-

1. to understand trends and analyse the spatial pattern of various crimes against women in 53 million cities of India.
2. to examine the association between crimes incidence/ rate and various socio-economic and demographic attributes.

Data and Methodology

The study is based on secondary data on crime published in the Analytical Reports on Crime by the National Crime Records Bureau (NCRB) and Crime Report 2013. One point crime data of 2014 has been used for 53 major cities of India selected on the basis of population size. For correlation analysis, data on socio-economic and demographic attributes have been collected from the Census of India 2011, and other government organisations. The rate of crime has been obtained with the following formula-

$$\text{Rate of Crime} = \frac{\text{Number of crime} \times 100000}{\text{Total population}}$$

$$\text{Rate of Crime against Women} = \frac{\text{Number of Crime} \times 100000}{\text{Female population}}$$

The data have been further processed and cartographically presented with the help of open source GIS software - QGIS.

Trend of Crime:

Cognisable crimes are categorized into two-IPC crimes and the Special & Local Law (SLL) crimes. The crimes which come into Indian Penal Code are called IPL crimes such as murder, rape, theft etc. while crimes under SLL are arms acts, narcotic drugs, excise etc. Here only IPC crimes have been considered for analysis. As per Crime Report 2014, there were total 28.5 lakh

incidents of crimes against women in the country in 2014 showing 28.2% increase over five years (2010-14).

Table -1: Trend in Crime against Women

Year	Total Crimes	Crime Against Women	Crimes against women to total crimes in %
2010	22.25	2.14	9.6
2011	23.26	2.19	9.4
2012	23.87	2.44	10.2
2013	26.48	2.96	11.2
2014	28.52	3.25	11.4

Source: Crime Report 2014, NCRB, MHA

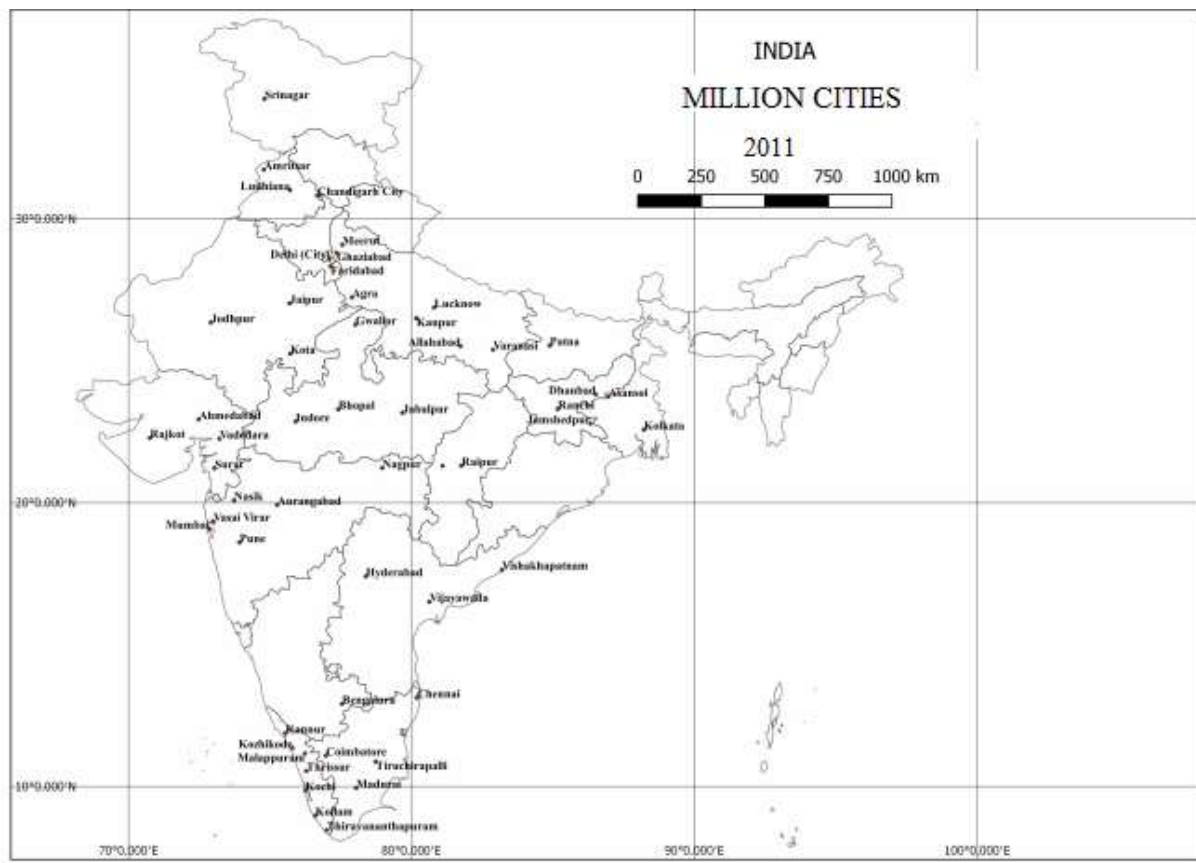


Figure -1

General crimes increased 7.7% during 2013-14 where as crimes against women increased 9.8% during same period. The percentage of crimes against women to total crimes increased from 9.6% in 2010 to 11.4 % in 2014. The incidence of crimes in 53 million cities of the county was 6.2 lakh in 2014 recording 21.6 % increase from last year (Crime Report- 2013 and 2014). Crime rate was almost doubled in million cities (1147.3) to overall average crime rate (581.1) of India

(Crime Report 2014, NCRB). Theft, burglary, robbery and kidnapping jointly have highest share (38.3%) followed by injuries due to rush driving & road rage (17.5%). The highest crime was recorded in Delhi (856) while lowest in Kannur (113). The spatial patterns of crimes in million cities show that big cities have high rate of crimes and areas between the Ganga-Yamuna and Narmada, and Kerala have concentration of cities with high rate of crimes. High numbers of incidences and rate of crimes are noticed mainly in Delhi, Mumbai, Bangalore, Bhopal, Chennai, Hyderabad, Indore, Jaipur, Kochi, Kolkata, Lucknow, Nagpur, Patna, Vadodara, Thiruvananthapuram and Pune etc (Figure 2).

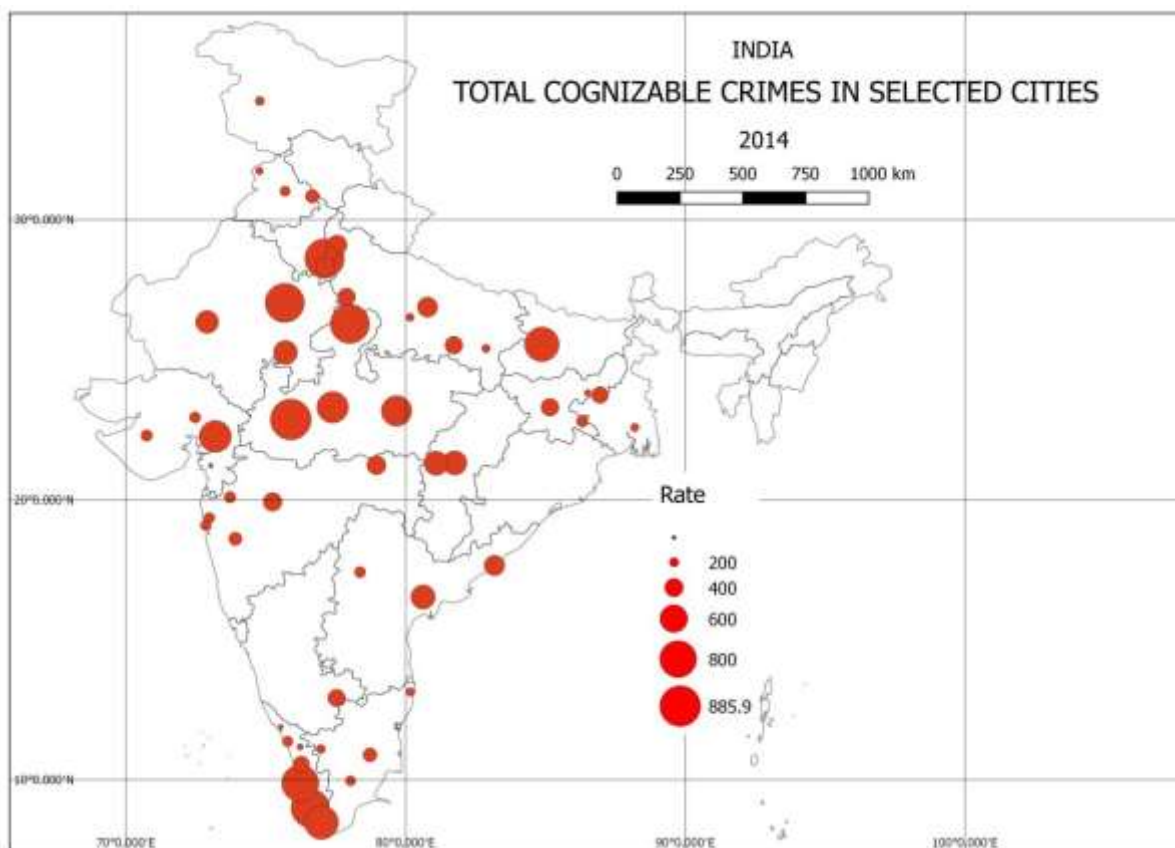


Figure- 2

Crime against Women:

Various legislation and amendments have been made to control crime against women but cases against them are increasing day by day. In 2014, total 3.35 lakh cases of crimes against women were reported with 9% increase from previous year whereas crimes against women jumped from 2.14 lakh to 3.25 lakh recording 51.9% increase during 2010-14 (Table1). Percentage of crimes against women to total crimes in country has also increased from 9.5% in 2010 to 11.4% in 2014 (Table 1). Although all crimes like murder, kidnapping, theft, road rage etc affect women but

there are some specific crimes which directly affect women such as rape, cruelty by husband, dowry and assault on women to outrage her modesty account to about 7% of total crimes in the million cities of the country (Table 2).

Table 2: Types of Crimes in Million cities of India (2014)

Types of Crimes	Share in Percent
Rape	0.9
Cruelty by Husband	3.2
Assault on Women to outrage her modesty	2.3
Dowry	0.5
Injury due to rush driving & road rage	17.5
Riots	1.0
Death due to negligence	2.3
Theft/Burglary/Kidnapping/Robbery	38.3
Others	34.0

Rape: As per Crime Report 2014, the incidence of rape cases was 5.8 thousand in 2014 which was about 18% up from previous year. The highest rate of rape (23.9) was recorded in Delhi followed by Kota (21.2). Figure 3, depicting the spatial patterns of rape cases shows that most of the rape cases are concentrated in middle part of the country around Delhi. The other cluster is Mumbai. Delhi having three time rape cases (1813) than Mumbai (607) tops among all million cities of the county. That is why it is called ‘Rape Capital of India’ in media. Other cities having comparatively high rape cases are Ahmadabad, Bhopal, Bengaluru, Faridabad, Gwalior, Hyderabad, Indore, Jabalpur, Jaipur, Kota, Ludhiana, Mumbai, Pune etc.

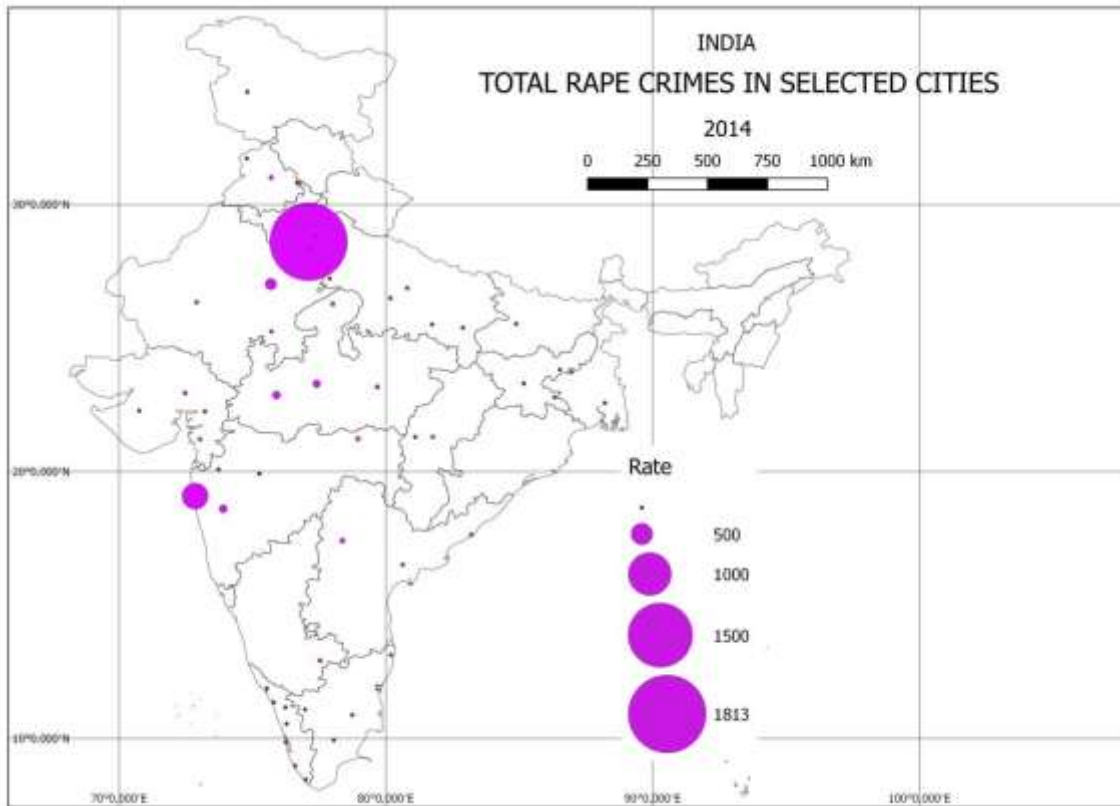


Figure-3

Dowry:

There were total 1235 cases under dowry Prohibition Act during 2014 in million cities recording a decrease of 23.5% as compared to last year. Highest cases recorded in Bengaluru (774) followed by Jamshedpur (168) during same period (Crime Report, 2014, NCRB). During this period, about 749 cases of dowry death registered with highest death in Delhi (127). Other cities with high dowry cases are Bengaluru, Gwalior, Jaipur, Lucknow, Patna etc. The spatial patterns of dowry death in million cities show that the Yamuna-Ganga-Brahmaputra fertile plain belt from Rajasthan to West Bengal has high dowry death cases. The others are Bengaluru, Mumbai and Pune and few cases in Andhra Pradesh (Figure-4)

Sexual Harassment and other Crimes against Women:

Apart from rape and dowry the major IPC crimes against women are cruelty by husband and his relatives, assault on women with intent to outrage her modesty, insult to the modesty of women. The other two cognisable crimes i.e. women trafficking and action under Dowry Prohibition Act belong to Special & Local Laws. Among crime against women, the cruelty by husband and his relatives were most prevalent (38.78%) followed by Assault with intent to outrage her modesty

(28.%) and rape (11%) (Table 3). In 2014, total 4678 cases of sexual harassment against women were reported in the million cities of India.

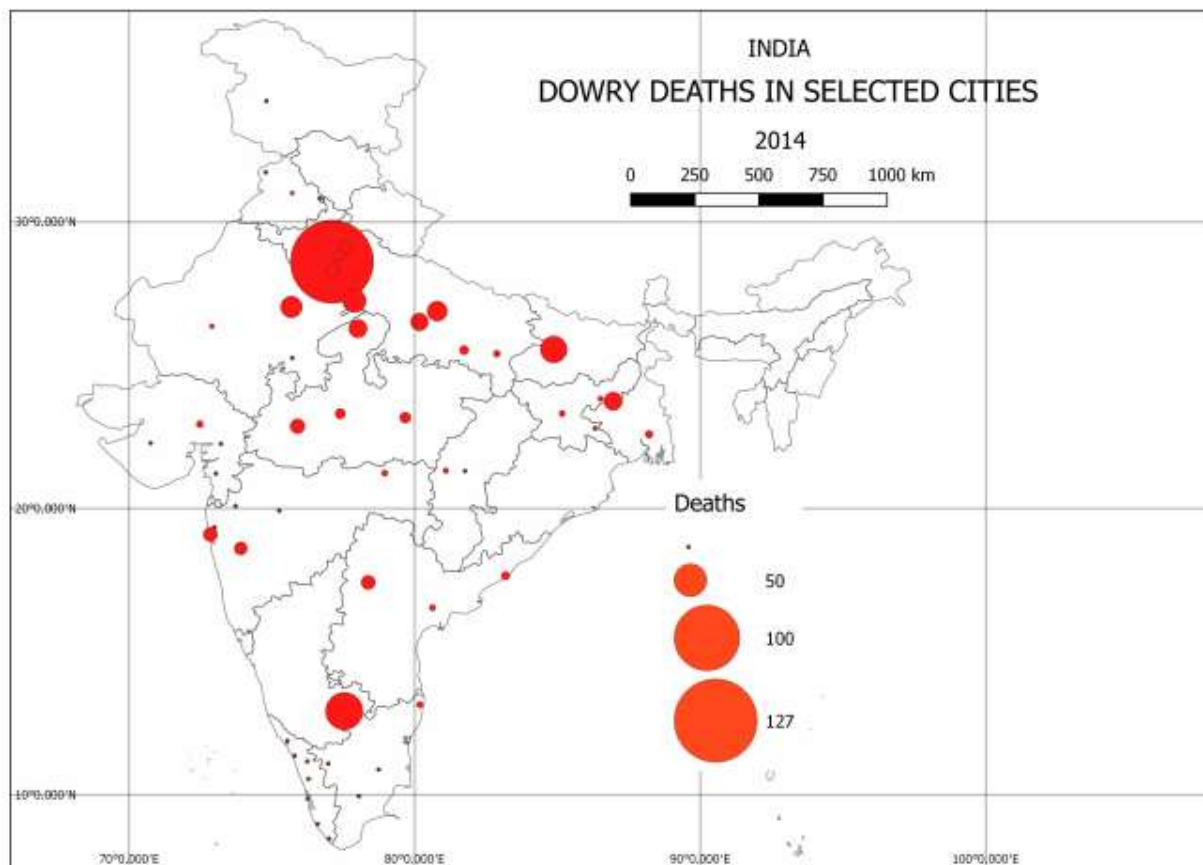


Figure-4

Table 3: Crimes against Women in Million Cities of India

No.	Crimes against Women	Number of cases	Share in Percent
1	Cruelty by husband or his relatives	19,687	38.78
2	Assault with intent to outrage her modesty	14,277	28.12
3	Rape	5,761	11.35
4	Sexual harassment	4,678	09.22
5	Insult to the modesty of women	2,894	05.70
6	Immoral Trafficking	1,245	02.45
7	Dowry Prohibition Act	1,235	02.43
8	Dowry Death	749	01.48
9	Attempt to commit rape	240	00.47
	Total	50,766	100.00

Source: Compiled from the Crime Report 2014, NCBR.

Figure-5 depicts that there is no specific spatial pattern of sexual harassment in the million cities of the country. High incidences of sexual harassment cases are observed mainly in Delhi, Mumbai, Bhopal, Kollam, Nagpur, Pune, Lucknow, Kochi, Hyderabad, Aurangabad, Agra etc. Delhi recorded highest cases with 27% of the total cases of India followed by Mumbai and Kannur in Kerala.

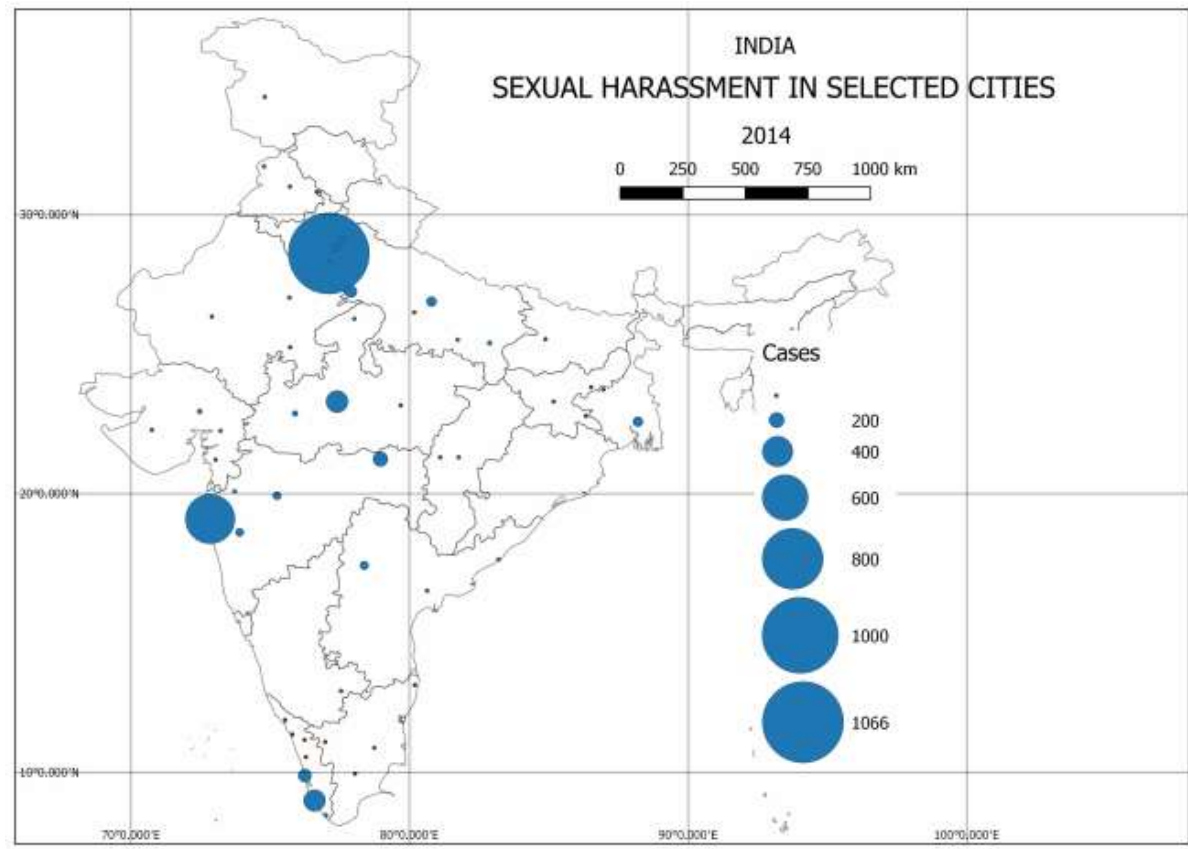


Figure-5

Figure-6 shows that the three major crimes against women is dominated in and around Delhi, Bhopal-Indore, Mumbai-Pune and Kollam-Kochi, Nagpur, Kolkata, Hyderabad, Kanpur, Jamshedpur etc. are other centres of crimes.

Reasons of Crimes against Women:

There are many socio-economic, demographic and poverty related factors which are considered to be associated with various crimes. In this study, the Spearman’s correlation has been used to show degree of relationship of four crimes i.e. Dowry death, total crimes rate, assault with the intent to outrage her modesty and Sexual harassment rate with the population size, sex-ratio, literacy, slum population and main workers of the million cities of the country. There is significant (at .01) negative correlation (-0.399) between dowry and sex ratio which means lower

the sex ratio higher the rate of dowry. Similarly, significant (at .01) negative correlation (-.684) has been also found with literacy. Contrary to this, association between dowry and slum population is positive with the coefficient of 0.306 at 0.05 significant level which means the rate of dowry death is higher where slum population is high. Where slum population is high the rate of assault with intent to outrage women modesty is also high as verified by the positive correlation (0.381) at the .01 significant level. The assault against women is negatively correlated (-0.276) at 0.05 significant level with literacy establishes that as literacy increases the rate of assault against women decreases. The correlation of other crimes with socio-economic and demographic factors is weak and does not exhibit direct and uniform association (Table 4). Reasons behind it may be the complex spatial patterns of the variables.

Table 5: Correlation with various Crimes and Socio-Economic Attributes

Attributes /Crime	DDR	TCR	AWMR	SHR
Population Size	-0.080	-0.148	-0.209	-.023
Sex Ratio	-0.399**	0.106	-.019	-.176
Literacy	-.684**	-.095	-.276*	-.164
Slum population	.306*	.151	.381**	.212
Main workers	.024	-.070	-.071	.092

** Correlation is significant at the 0.01 level.* Correlation is significant at the 0.05 level. Abbreviation: **DDR**=Dowry Death Rate, **TCR**=Total Crime Rate, **AWMR**=Assault with intent outrage her modesty. **SHR**=Sexual Harassment Rate

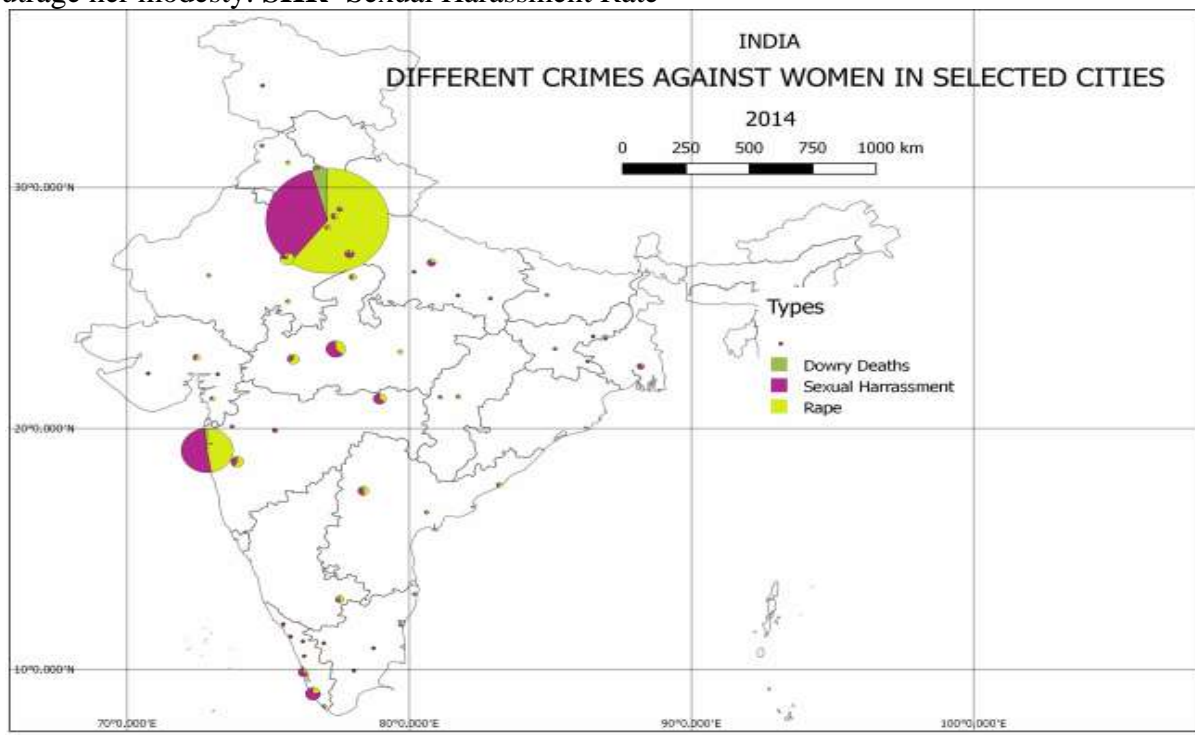


Figure-6

Conclusion:

Crime against women is increasing at higher rate than the average rate of crime in the Country. Crimes in million cities of India are higher in comparison to the average rate of crimes of the country. Crimes rate against women is also higher than the average rate of crimes in the million cities. Increase in crimes against women in million cities is also higher than the average increase in the cities. Crime against women in these cities has recorded about 21% increase during 2013-14. Theft, burglary, kidnapping, robbery are most prevalent crimes in million cities of the country followed by injuries due to rush driving & road rage. The prominent crimes against women in million cities are cruelty by husband and his relatives, assault with intent to outrage women modesty, rape and sexual harassment. Delhi has highest incidents in all most all major crimes. Incidents of crimes are high among metropolitan cities. The spatial patterns show that the big cities of northern plain including Madhya Pradesh, and Kerala have high rate of crimes. Delhi has about three times more rape cases than Mumbai whereas in dowry cases, Delhi and Bengaluru are number one and two respectively. The Yamuna-Ganga plain from Delhi to West Bengal has high concentration in dowry cases. Sexual harassment cases are dominant in Delhi, Mumbai, Bhopal and few cities of Kerala. Socio-economic and demographic factors are considered to be the reasons for high incidents of crimes. The Spearman's correlation coefficient does not verify clear and direct association between various crimes and most of the attributes except few one. There are significant negative correlations with dowry; and sex ratio and literacy. Significant positive correlation between dowry and slum population has been established. It means higher the slum population higher the dowry death. The significant positive correlation has also been found between slum population and assault against women. The negative significant correlation between literacy and assault with intent to outrage women's modesty indicates that the higher the literacy, lower the assault against women. The study concludes with suggestion that there is need for more reliable data on crimes as many people particularly women do not report or hesitate to report crimes to the police due to various reasons like social taboo, religious, cultural stigmas. Many time police do not register crime to make their record straight. The higher crime rate of incidences in million cities is may be due to higher reporting in such cities. Reform in this aspect is need of the hour to proper research and management of crimes in the society.

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