

Educated but Unsafe: Exploring the Complex Relationship Between Literacy and Crime Rates in India, with Special Emphasis on Assam

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Abstract:

Crime rates in India tend to spatially vary over different states based on various socio-economic factors, education being considered as one of the most important. Higher literacy rates are often associated with lower crime rates; but is this really true? An apparent paradox emerges in urban areas where, despite higher literacy, crime rates often exceed those in less educated rural regions. This paper explores the complexities underlying the relationship between education, crime, and urbanization in overall India and Assam specifically. Through an analysis of data from the National Crime Records Bureau (NCRB) and Census of India, and certain other relevant academic and non-academic publication, like the crime data of Assam State portal and other additional crime statistics and district wise reports, the paper identifies key factors contributing to these complexities, including economic inequality, population density, migration, and the varying nature of crimes in urban settings. After the data collection, attempts have been made to derive meaningful relations between the different variables through proper tabulation and computation using simple yet meaningful carto-statistical methods, hypothesis establishment, and correlation methods. The results suggest that apart from literacy rate, other factors, such as economic inequality, unemployment, urbanization, and social unrest, may play a more decisive role. It underscores the need for nuanced policy interventions that address the unique socio-economic challenges of urban areas.

Keywords: Crime, Literacy rate, paradoxes, correlations, Crime Prevention

1. Introduction

Crime rates in India often tend to spatially vary over space which can be attributed to various underlying factors. Several investigations are made to ascertain the impact of deterrence variables and socio-economic variables on the rate of crime in the country (Dutta & Hussain, 2009). Education being one of the most important variables, it is often considered to be inversely proportional to the crime rates. That means a higher level of education often indicates lower level of crime rates. Also reverse causality is another important where it is seen as the individuals heavily engage in crime tends to choose to leave school at a younger age, resulting to their low literacy (Swisher & Dennison. 2022; Lochner, 2004). In fact, Tauchen & Witte (1994) find that young people who are in paid employment or go to school are less likely to

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engage in criminal behaviour. But a closer analysis of the crime scenario in India, leads to the question- is this universally true? Empirical findings reveal that one per cent increase in gross enrolment ratio leads to reduction of total crime by 8 per cent (Rakshit & Neog, 2020). However, in contrary to this, a positive association is also found between tertiary education and crime (Rakshit and Neog, 2020). This relationship becomes less straightforward in urban areas, where, despite higher levels of education, crime rates tend to be higher than in rural areas. It thus becomes important to unravel the complexities underlying this phenomenon in the Indian context. Also, the situation shows similar complexities in the case of Assam, where it is seen that rapid urbanization, corresponding higher educational attainment also reflects higher rates of different kinds of crimes.

India's rapid urbanization has led to the expansion of cities, with a significant portion of the population now residing in urban areas. These regions boast higher literacy rates due to better access to educational institutions (Punyamurthy & Bheenaveni, 2023). But in contrary, it also leads rapid increase in the population in the urban areas resulting to exceeding the carrying capacity of the areas (Wei, Huang, Lam, & Yuan, Z. 2015). This compels the increased population to migrate and live in a very dilapidated condition with no proper access to basic means of living a decent life. Assam has witnessed a large-scale increase of the urban poor people in its urban areas struggling to meet their basic needs. So paradoxically, such deprivations may lead to higher crime rates, particularly in terms of property crimes, cybercrimes, and crimes against women. This paper explores how higher literacy does not always translate into lower crime rates in urban settings, delving into the interplay between education, urbanization, and crime to give a better understanding of the other underlying factors controlling the rate.

2. Data Source and Methodology

The present study is mainly based on secondary data that has been collected from various authentic sources, like crime data has been procured from the National Crime Record Bureau (NCRB) for the year 2001 and 2011. Also, literacy data has been gathered from the census of India reports for the same years, certain other relevant academic and non-academic publication has been referred to collect other spatial variations of crime rates and literacy rates across Assam from the crime data of Assam State portal and other additional crime statistics and district wise reports has been collected from the Assam Police Department reports. After the data collection, attempts have been made to derive meaningful relations between the different variables through proper tabulation and computation using simple yet meaningful carto-statistical methods and correlation methods. To verify the relationship between the two variables i.e. literacy rate and total no. of crimes in India, following hypotheses has been established: H_0 : There is no linear correlation between the considered variables.; H_1 : There exists linear correlation between the two variables. Relevant statistical values including correlation coefficient, test statistics, p-values, etc. were calculated to ascertain the prevailing relationship between the variables, and test the established hypothesis.

3. Results and Discussions

The criminal procedure code of India divides crime into two parts i.e. Cognizable and non-cognizable crimes. Cognizable crimes include the crimes where the police have the

responsibility to take prompt action, which are again categorized under Indian Penal Code (IPC) or under Special and Local Laws (SLL). Whereas the non-cognizable crimes are left to be pursued by the affected parties themselves at the court. So, in this paper, we have considered only the cognizable crimes with more emphasis on those under IPC than those under SLL as their enforcement mechanisms are again different.

3.1. Spatial distributions of crime rates across the Country

Understanding the spatial distribution and variations of the crime rates is very important for developing targeted crime prevention strategies and policies. Going through the crime records of 2001 and 2011 of the NCRB, considering only the violent crimes of murder, Robbery and Rape, we see that the inverse relationship between literacy and crime rates is not always true (Table 1). As it is evident from the table 1, some of the regions like Mizoram, Kerala etc. displays a much higher crime rates than many other less literate states like Sikkim, Nagaland etc. which suggests that many other factors contribute to the determination of the crime rates in the region. Moreover, it is also seen that the literacy rate for most of the states of the country have increased from 2001 to 2011, in contrary to this, the rates of total crimes also have increased subsequently which suggests that the size of the states, level of urbanizations and disparities contributes significantly in the rates of violent crimes in most of the areas.

Table 1: Trend of Literacy Rate and Total No. of Crimes (Murder, Robbery & Rape) in India, 2001 & 2011

Area Name	2001		2011	
	Literacy Rate (%)	Total No. of Crimes	Literacy Rate (%)	Total No. of Crimes
ANDHRA PRADESH	60.5	4102	67	4850
ARUNACHAL PRADESH	54.3	200	65.4	171
ASSAM	63.3	2860	72.2	3840
BIHAR	47	6734	61.8	5513
CHHATTISGARH	64.7	2177	70.3	2633
GOA	82	73	88.7	103
GUJARAT	70	2503	78	2933
HARYANA	67.9	1576	75.6	2433
HIMACHAL PRADESH	76.5	271	82.8	308
JHARKHAND	53.6	2721	66.4	3145
KARNATAKA	66.6	2766	75.4	4579
KERALA	90.9	1551	94	2238
MADHYA PRADESH	63.7	7040	69.3	7869
MAHARASHTRA	76.9	6380	82.3	8768

MANIPUR	70.5	248	76.9	138
MEGHALAYA	62.6	315	74.4	363
MIZORAM	88.8	106	91.3	109
NAGALAND	66.6	247	79.6	128
ODISHA	63.1	2735	72.9	4172
PUNJAB	69.7	1167	75.8	1557
RAJASTHAN	60.4	3197	66.1	3988
SIKKIM	68.8	30	81.4	35
TAMIL NADU	73.5	2757	80.1	4620
TRIPURA	73.2	405	87.2	418
UTTAR PRADESH	56.3	13384	67.7	10141
UTTARAKHAND	71.6	581	78.8	486
WEST BENGAL	68.6	2963	76.3	5232
INDIA	64.8	70494	73	81304

Source: NCRB Report, 2001 & 2011

3.2 Pattern of relation between Literacy and Crime Rates in India

Attempt has been made to analyse statistically, the relation between the literacy rate and crime rates in India, using Karl Pearson's method where it has been observed that there exists an inverse correlation between the two variables of literacy rate and crime rate. Here, in this study the literacy rate has been considered as the independent variable and crime rate has been considered as the dependent variable (Fig 1).

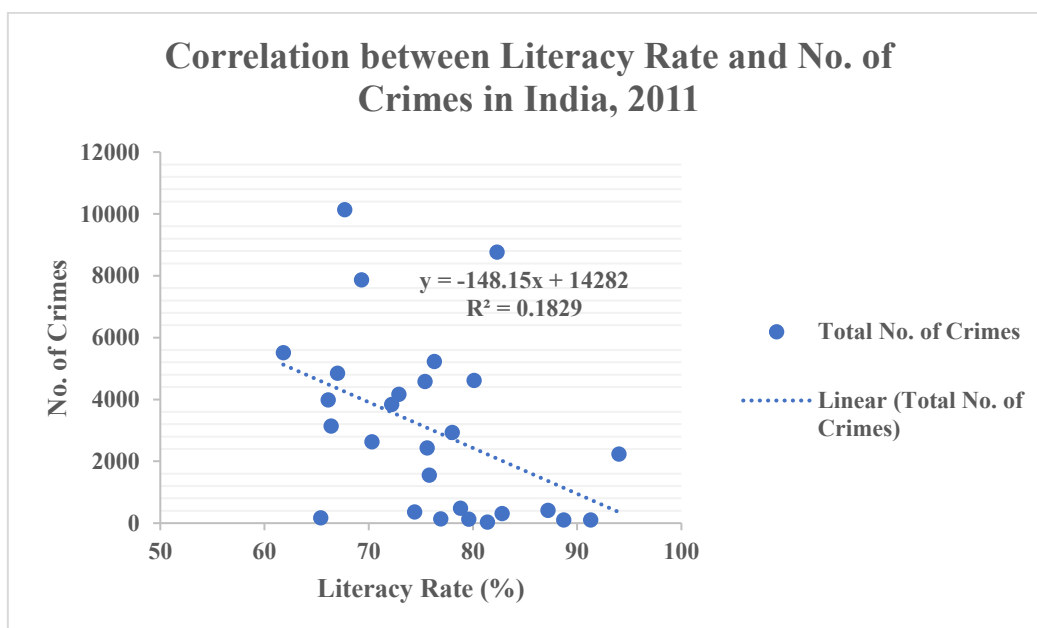


Fig 1: Relation between Literacy Rate and Crime Rate in India, 2011

The correlation analysis reveals a moderate inverse relation between the literacy rate and no of crimes across India, where r value is about -0.43. To understand the statistical significance of this relationship, two tailed t test has been conducted using $(n-2)$ i.e. 25 degrees of freedom. The calculated t value is approximately -2.38, with a p -value of approximately 0.025. Since the calculated p -value is less than the tabulated p -value, at 0.05 significance level, the null hypothesis is being rejected which suggests that there exists no linear correlation. The study's findings also underscore the importance of considering socio-economic factors. States with higher economic development and urbanization might have better law enforcement and support systems for women, which can impact crime rates (Roy & Swargiary, 2024). There exists a moderate association between the two variables but this doesn't prove causal relationship between them as there exist various other factors contributing to their variations.

3.3. Incidence of Crimes against Women in relation to Literacy Rates

Women are often considered as the most vulnerable section of the society. The situation becomes more prominent in a patriarchal society like in the case of India where women are often treated as a subordinate category to men. It is generally found that the status of women in some illiterate states like Uttar Pradesh and Bihar is very poor which is evident from the sex ratio of the respective states.

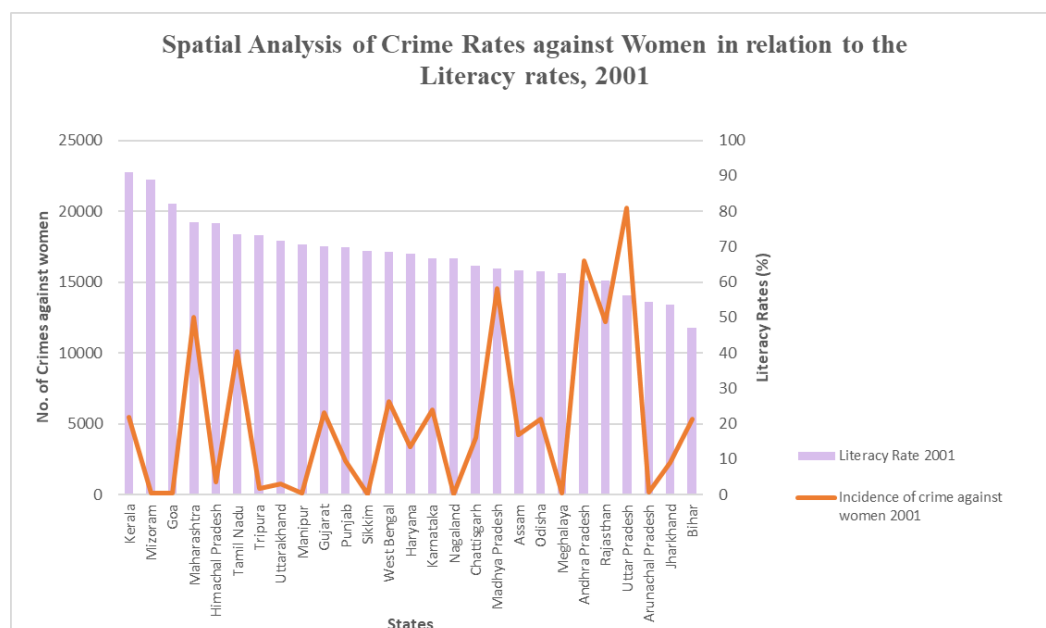


Fig 1: Spatial Analysis of Crimes against women in relation to Literacy Rate, 2001

Source: NCRB, 2001 and Census of India Report, 2001

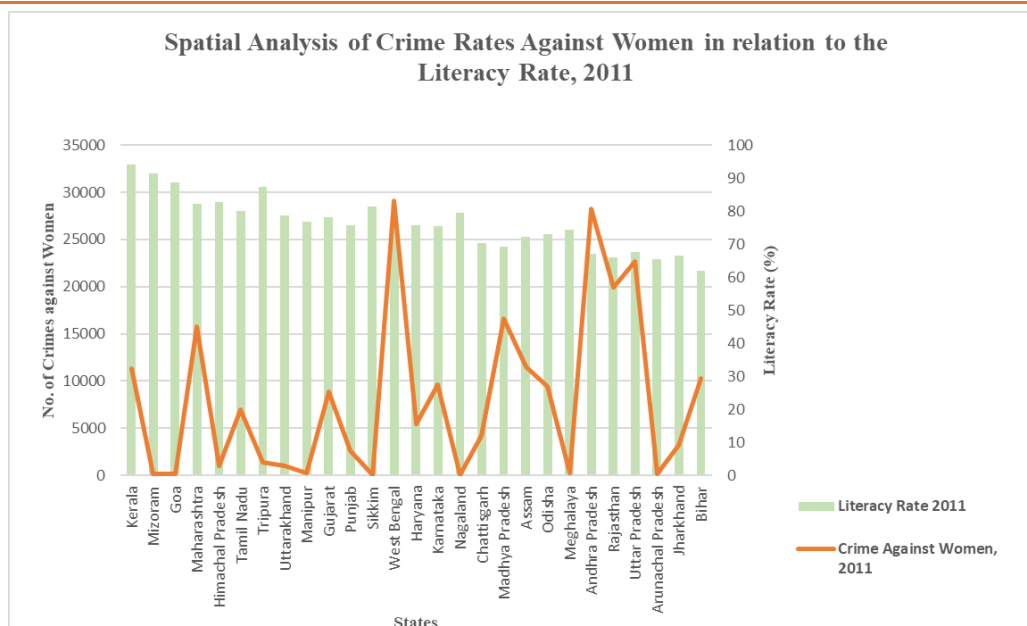


Fig 2: Spatial Analysis of the Crime Rates against Women in relation to Literacy Rates, 2011

Source: NCRB, 2011 and Census of India Report, 2011

The above two figures i.e. Fig 1 & 2 gives us a comparative picture about how incidence of No. of Crimes against women and literacy rates have changed spatially with time from 2001 to 2011. Compared to 2001, it is seen that literacy rate has increased for all the states individually, but there is stark contrast between the rate at which it has increased between the states, that has resulted to change in their ranking in terms of their literacy rates. The no. of Crimes against women have also seen changes across states however it doesn't show any mutual relationship with the rate of increase of literacy of the respective states. In 2001 Uttar Pradesh with a literacy rate of 56.3 per cent have witnessed highest crimes against women of around 21,000. However, in 2011 West Bengal Witnessed highest level of crimes against women around 30,000 which is even much higher than Uttar Pradesh in 2001, despite of experiencing growth in literacy rate and having literacy rate higher than Uttar Pradesh. This clearly signifies that apart from literacy rate, the other underlying factors like the rate of urbanization, increase in population, access to resources, geographical size of the area etc. plays a significant role in contributing to the number of crimes. However, education does play an important role in reducing the extent of crimes and spread awareness among people.

Moreover, it is seen that majority of the urban centres, having large scale influx of people from the surrounding region tend to experience higher crime rates. This may be attributed to the increasing population burden on the available resources which leads to failing of having access to basic modes of living to most of the migrated people, which might have led some of them to get inclined towards unfair means. Also, the registration of cases is more in the urban areas compared to rural areas due to the higher level of awareness among the urban population, specially in regards to crimes against women, where it is generally seen that women of the urban areas are more open about the same which helps in registration of such cases and more criminals are caught. On the contrary, the women of the rural areas are generally shy and seen

to have fear from the societal norms which refrains them from taking action against such activities.

3.4. Pattern of Crimes and Literacy Rates in the state of Assam

Assam presents a complex picture in terms of crime rates. The state is characterized by its ethnic diversity, insurgency-related violence, and socio-economic challenges. These factors contribute to the spatial variation in crime rates across different parts of the state.

Table 2: Year-wise Data of Cognizable Crimes of Assam, 2006-2020

Years	No. of Cognizable Crimes
2006	47181
2007	48967
2008	54840
2009	57160
2010	63493
2011	69207
2012	79771
2013	90289
2014	99027
2015	107825
2016	107022
2017	111118
2018	124469
2019	132877
2020	121609

Source: Assam Police Crime Data, up to 2020

There is continuous increase of crime rates of Assam since 2006 till 2020 (Table 2), with slight variations in 2016 and 2020, despite of the increase in literacy rates, which is suggestive of the fact that the situation is same in the case of Assam also.

3.4.1. Regional Analysis of Crimes in Assam

Upper Assam: This region, which includes districts like Dibrugarh, Tinsukia, and Jorhat, is relatively more urbanized and developed. However, it also faces significant challenges related to insurgency and ethnic violence. Crimes like kidnapping, extortion, and insurgency-related violence are more prevalent in this region. Additionally, there is a notable incidence of property crimes in urban centres.

Lower Assam: Including districts like Kamrup (Metro), Nalbari, and Barpeta, Lower Assam has higher population density and urbanization compared to other parts of the state. Guwahati,

the largest city in Assam, is located in this region and reports higher crime rates, particularly related to theft, robbery, and sexual violence. The urban-rural divide is stark, with urban areas reporting higher rates of property crimes and rural areas more affected by ethnic and communal violence.

North Assam: Districts like Sonitpur and Lakhimpur experience moderate crime rates. The region is less urbanized, with crime rates influenced by ethnic diversity and insurgency-related violence. However, crimes against women, including domestic violence and sexual assault, are of concern.

Barak Valley: Comprising districts like Cachar, Karimganj, and Hailakandi, Barak Valley has a different socio-cultural landscape compared to the rest of Assam. The crime rates here are moderate, with communal tensions and cross-border crimes (due to proximity to Bangladesh) being significant issues.

Bodoland Territorial Region (BTR): This area, including districts like Kokrajhar, Chirang, and Baksa, has been historically affected by ethnic violence and insurgency. Crime rates are higher in this region, particularly related to ethnic clashes, insurgency, and related crimes like extortion and kidnapping.

3.4.2. Case studies of Specific Districts in terms of Literacy Rate and Crimes

Kamrup Metropolitan, which includes Assam's largest city, Guwahati, is one of the most urbanized and economically developed districts in the state. The district showed a significant improvement in literacy rates, rising from 78.0% in 2001 to 88.6% in 2011 (Census of India, 2001; 2011). Despite this impressive growth in educational attainment, Kamrup Metropolitan experienced a notable increase in property crimes during the same period. Crime Data according to NCRB, property crimes, including theft, burglary, and robbery, increased by nearly 25% from 2001 to 2011. This rise in property crimes is particularly paradoxical given the district's high literacy rates. One possible explanation for this trend is the rapid urbanization and population growth in Guwahati, leading to socio-economic disparities, urban poverty, and increased opportunities for crime.

Dibrugarh, which is an important district in Upper Assam known for its tea industry, displayed a moderate increase in literacy rates, from 66.2% in 2001 to 76.2% in 2011 (Census of India, 2001; 2011). However, this period also saw a disturbing rise in violent crimes, including assaults, homicides, and domestic violence. NCRB data indicates a 30% increase in violent crimes in Dibrugarh from 2001 to 2011. This surge is concerning given the district's moderate but consistent improvement in literacy rates. The increase in violent crimes, particularly domestic violence, suggests that education alone is not sufficient to mitigate certain types of crime, especially in a socio-cultural context where gender norms and economic stressors play a significant role.

4. Conclusion

This research paper has explored the relationship between literacy rates and crime rates in India from 2001 to 2011, revealing that despite a substantial increase in literacy across the country during this decade, there has been no significant corresponding decrease in crime rates. The analysis indicates that while education is often viewed as a crucial tool for social development

and crime prevention, its impact on reducing crime is not as straightforward as commonly assumed. The data suggests that other factors, such as economic inequality, unemployment, urbanization, and social unrest, may play a more decisive role in influencing crime rates than literacy alone. In several regions, rising literacy rates have coincided with increased incidences of certain types of crime, pointing to a complex interplay of socio-economic variables that mitigate the potential benefits of education in curbing crime.

This paradox challenges the conventional wisdom that education alone can act as a panacea for social ills like crime. It underscores the need for more holistic and multi-faceted policy approaches that address the broader socio-economic context in which crime occurs. Interventions should not only focus on improving literacy rates but also on creating economic opportunities, reducing inequality, and fostering social cohesion. The data from Assam also underscores the importance of a multifaceted approach to crime prevention, one that considers not just educational attainment but also economic opportunities, social cohesion, and effective law enforcement. Without addressing these broader issues, the benefits of increased literacy may be undermined by persistent or even rising crime rates.

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