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# RESEARCH ARTICLE

## THE STUDY OF CRIME AND CRISIS OF SOCIO-ECONOMIC DETERMINANTS OF CRIMES IN THE INDIAN STATES

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**ABSTRACT**

Using a panel data collection for the Indian states, this study examines the effects of socioeconomic factors on five main crime categories from 2005 to 2015. The effects of the Great Recession on state economic development and deterrent factors are the main topics of the article. Two estimate techniques were used in the study: panel fixed-effect and two-stage least squares fixed effect (2SLS-FE). The fixed effect technique, which treats poverty as an endogenous variable and uses higher education and social sector spending as instrumental factors, is favoured to the 2SLS-FE method. To account for the time of the Great Recession, a dummy variable is utilized. We search for evidence of a non-linear link between crime and economic development using a square of state GDP per capita. The approach includes three deterrent factors: conviction, arrest, and police force. According to the research, the great recession had a favourable effect on all types of crime, including violent crime and crime against women. Crime against women, economic crimes, and overall crime are all favourably impacted by the economic expansion (state GDPs). The research also discovered evidence of a non-linear association between three types of crime and economic development, which is an inverted U-shaped curve. There does not seem to be a deterrent impact of the deterrence factors on crime in the Indian states. However, despite being very significant, their coefficients are positive. Out of all the main crime categories, poverty and unemployment alone seem to have an influence on overall crime.



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## INTRODUCTION

The negative effects of crime are present in every nation in the globe. Nevertheless, some nations have greater negative effects than others. There is a general agreement that developed countries see few crime incidences, despite the fact that the degree of development is starting to have less and less of an impact on reducing crime in today's globe (especially amongst the developing countries). However, it is indisputable that modern criminals today have better access to guns, illicit narcotics, and sophisticated technology. Both established and emerging economies are equally rife with crime. The former, however, is more equipped to stop criminal activity and capture offenders. With 1.3 billion citizens, India is a growing nation with skyrocketing crime rates. Many crimes increased dramatically in the previous few years, notably those against women. India lags in discouraging criminal activity while having one of the greatest GDP growth rates, which may be attributed to a lack of accountability and corruption in the country's enforcement system. India recorded 3,225,701 IPC offences and 1,930,471 SLL crimes in 2015. Crimes climbed by 1.6% from the previous year, while crimes against bodies accounted for 32.6% of all IPC crimes. Property crime grew by 6.5 percent in 2018, while crime against women increased by 7.3 percent (National Crime Records Bureau, n.d.). According to World Bank Open Data | Data, n.d., India's annual GDP growth in 2015 was 4.04, its unemployment rate was 5.27 percent, and its poverty rate was 6.7 percent. Within India's states, crime and socioeconomic data vary. Bihar has the lowest GDP per capita ($2,395), while Goa has the highest ($7,032). (Knoema.Com, n.d.). Uttar Pradesh (12.2 percent of all crimes nationwide), Maharashtra, and Kerala are the top three states in terms of overall crimes. The state with the highest violent crime rate was Assam (86.4 per 100,000). The majority of rape cases (16.3% of all rape cases in India) were reported in Madhya Pradesh (Times now, n.d.). The national average is 241.2 incidences per 100,000 people, whereas Nagaland has the lowest rate at 51.8. With only 0.8 rape incidences per 100,000 women, it is also one of the safest states for them (Deka et al., n.d.). The effect of the recession on crime, however, is difficult to

determine. While crime decreased in certain nations during the Great Recession, it increased in others. India's commerce was hit by the great recession of 2008–2009, which caused a 16 percent decline in exports. Between December 2008 and February 2009, the Indian government presented three stimulus packages totaling US$ 245 billion (3.5 percent of GDP). The GDP fell to 6.7 percent in 2008 before quickly increasing to 8.5 percent in 2009–2010. ("2008 Global Financial Crisis," Iyer). However, there was an increase in criminal activity. In comparison to the previous year, crime under the IPC climbed by 5.2 percent, crime against persons increased by 4.8 percent, crime against property increased by 8.8 percent, and economic crime increased by 3.6 percent. Molestation (4.3%), spouse cruelty (7.1%), sexual harassment (11.5%), and trafficking (9.8%) are among the crimes against women that rose in 2008. To the outside world, India would seem to be uniform, yet its extreme cultural, social, and geographic diversity makes it exceptional. Therefore, as shown by the previously cited statistics, the decision to include a panel data analysis is justified. The government of the union and the states regulate their various states in accordance with the variations in the socioeconomic situation and crime rates among the states.

**Research Issues:** The goal of the essay is to examine how socioeconomic circumstances and conditions affect the important crime categories of overall crime, violent crime, property crime, economic crimes, and crime against women. Additionally, it looks to evaluate how deterrent factors like arrest, conviction, and police presence affect crime.

**The following are the research questions**

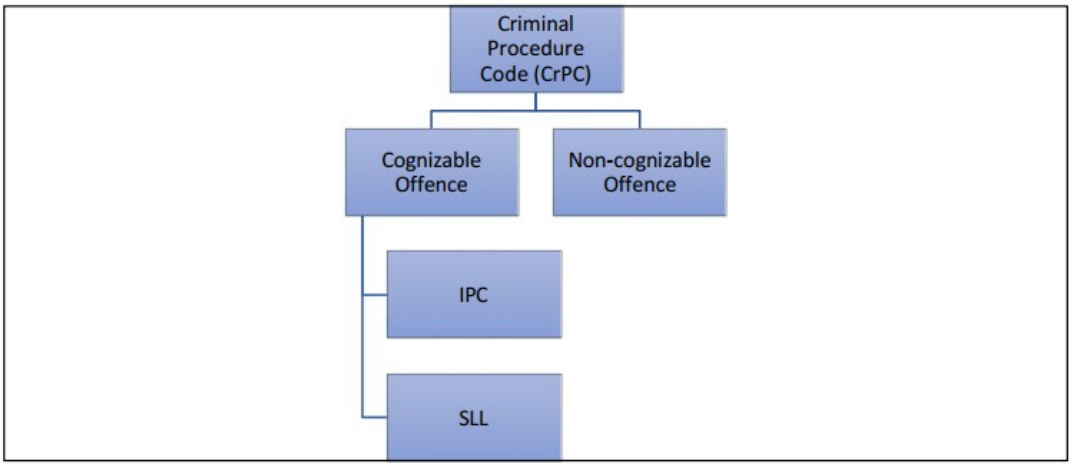
- Does the 2008–2009 Great Recession have an impact on the five crime categories listed for Indian states?
- Does the economic expansion of the states affect all types of crime in any way? Does their connection show non-linearity?
- Can crimes be deterred in Indian states by the deterrent variables?

**Significance of the study:** This investigation was inspired by a paucity of literature on the topic of how economic development, the Great Recession, and deterrence affect crime rates, particularly in Indian states. The impact of crime on GDP has been the primary subject of previous studies. Nayebyazdi's study work provides the impetus for investigating the asymmetrical connection between economic expansion and criminal activity (2017). He used Simon Kuznets's popular Kuznets curve in his work. However, there is a paucity of works that examine the complex interplay between expanding economies and rising crime rates. So, this study is the first effort to do anything like this for India. In addition, many of the earlier research were conducted on a nationwide scale. This research has the potential to provide extensive, nuanced data on crime and related issues at the state level. Although there has been a lot of research on the Great Recession, much of it has concentrated on the role that financial markets, monetary policy, and international trade had in the downturn. Recession and its effect on crime have received little attention in the academic literature, especially in the Indian subcontinent. This research will add empirically grounded estimates of the recession-crime connection to the current literature.

**Organization of the study:** The next five sections of the research are as follows. Throughout section 2, we look more closely at the patterns of crime in India and the various states there. In the 3rd section, we examine the investigations, both theoretical and empirical, that have come before. In section 4, we learn about the study's empirical methodology, as well as the results of certain early experiments. In Section Five, we'll go deeper into the study's summary statistics and talk about what we learned from using our two different estimating methods. Section 6 wraps up the research with a summary, limits, and suggestions for moving forward.

## CRIME ININDIA

**The Legal System:** The Indian Criminal Procedure Code (CrPC) outlines the whole process for carrying out punishments mandated by Indian law. It is responsible for enforcing and managing the Indian Penal Code (IPC) and related criminal statutes. Different offences are classified into two groups under Indian Criminal Procedure Code (CrPC). The difference between the two is whether or not they are cognizable offences. When a complaint is submitted for a crime that the police have jurisdiction over, they must respond quickly. They must go to the site of the crime, collect data and information, catch the perpetrator, and bring him or her to justice. Nothing is done without first obtaining a warrant from a judge. Murder, rape, theft, etc., are all part of this category.
In the case of a non-cognizable crime, the court issues a summons and, with the magistrate's approval, may order a police inquiry. It usually consists of less serious offences. A crime may be reported in India if it meets the criteria of a "cognizable offence" under either the Indian Penal Code (IPC) or Special and Local Law (SLL). The International Penal Code (IPC) is the definitive legal instrument on criminal offences and their punishments. It has a total of 511 parts broken down into 23 chapters, and it addresses a broad variety of offences along with their corresponding sanctions (Code of Criminal Procedure, 1973, 1974). For property crimes, see, for instance, sections 378–468. Unique actions or laws enacted by parliament, state, or municipal governments are recorded as crimes under SLL. Indecent portrayal of women, organ transplantation, lottery prohibition, alcohol sales, etc is all included. Since the judicial process for SLL crimes differs from that of IPC offences, no information pertaining to SLL crimes is included in this analysis. The NCRB has been updating its crime database yearly since 1986. It's a public database made available to help authorities and citizens alike. The information may be accessed on a federal, state, county, and city level (National Crime Records Bureau, n.d.). According to NCRB's overview, the Indian Penal Code may be broken down into six categories (IPC). Here are some of them:




Source: Author's Construction

**Figure 1. Criminal procedure code categories and sub-categories**

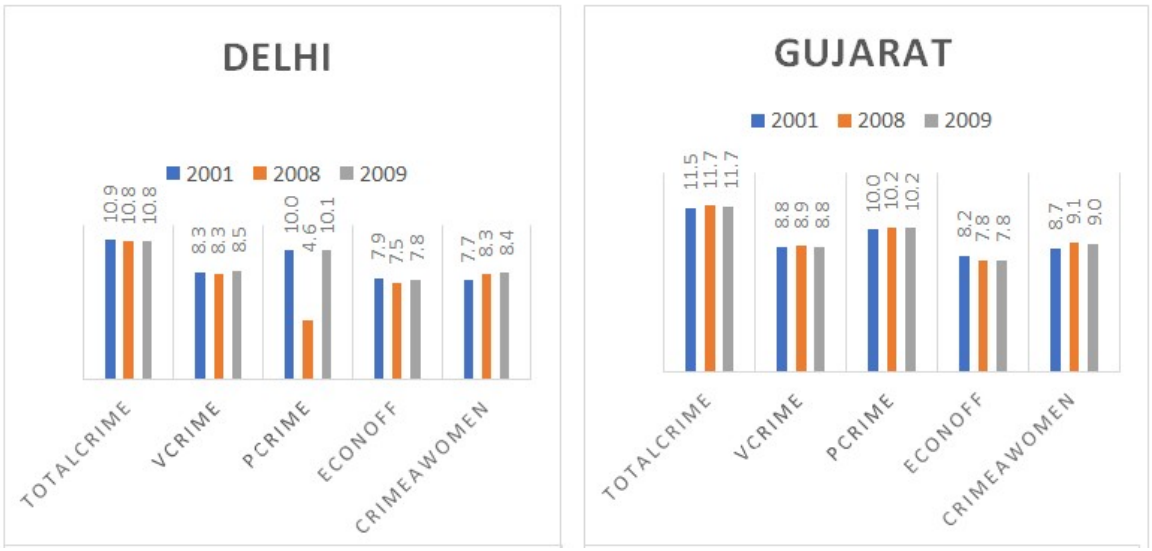
Murder, attempted murder, culpable homicide, kidnapping and abduction, injury, and the negligent homicide of another are all examples of crimes against the body. Theft, burglary, robbery and other property crimes such as dacoity and its planning and assembly acts of violence or destruction against the public peace. Theft, forgery, and other forms of economic crime like fraud all fall under this category. As examples of crimes against women, we may include things like rape, dowry killings, spouse and family member abuse, molestation, sexual harassment, and the illegal importation of young girls. Crimes against children include but are not limited to: rape, kidnapping, abduction, selling and purchasing underage females for prostitution, assisting in the suicide of a child, exposing or abandoning a child, infanticide, and foeticide (NCRB, executive summary, n.d.).

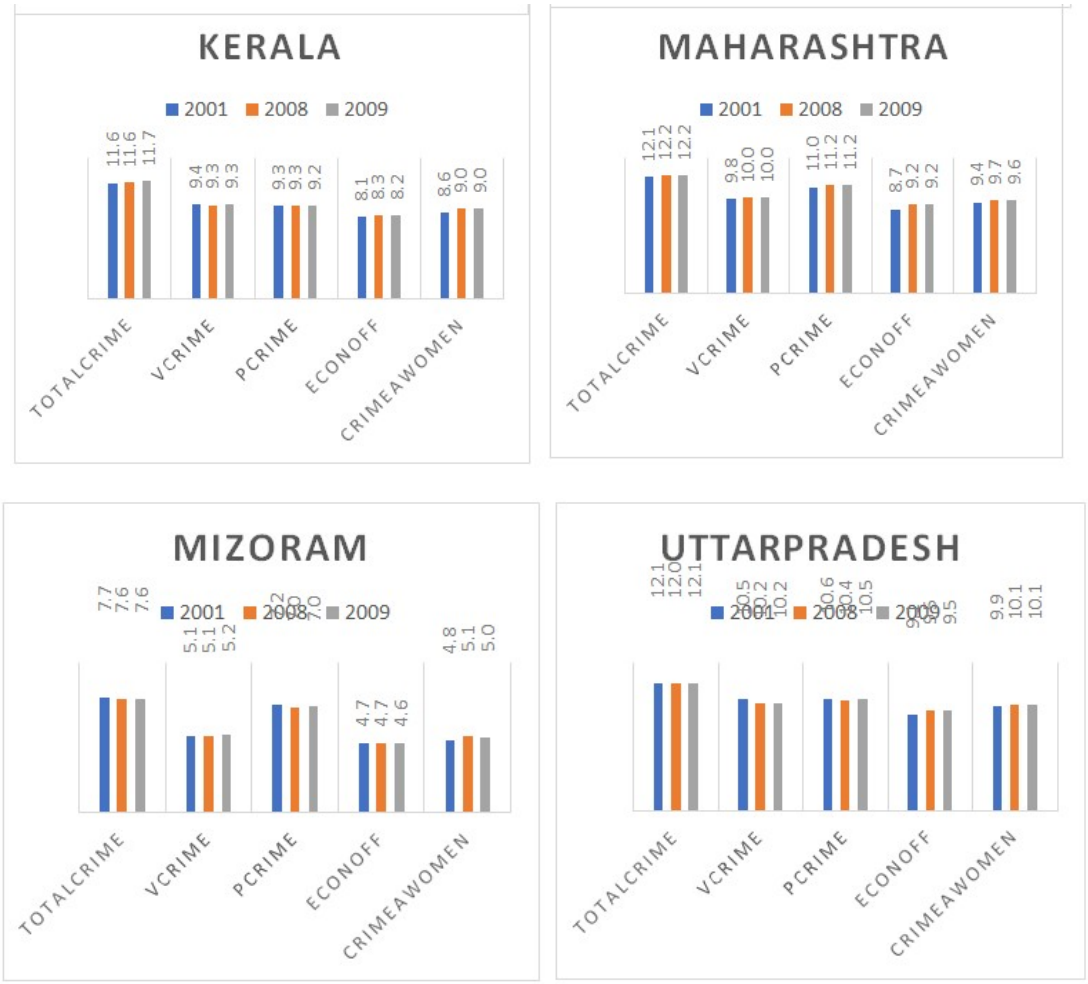
**Indian State Crime**

According to the NCRB, the total crime rate increased by 3% in 2015. In the same year, there was an increase of 7.3% in crimes committed against women, 6.1% in crimes committed against the economy, and 6.5% in crimes committed against property. On the other hand, there has been an increase in the frequency with which offenders are apprehended and sentenced to prison (CII 2015 states NCRB, n.d.). There are now 28 states and 8 union territories in India. Jammu and Kashmir was split into Jammu & Kashmir and Ladakh as separate union regions in October 2015. Unlike a state, which has its own administration, a union territory is a federal area governed by the Union government of India. However, Jammu and Kashmir is included in this article as a state since it is included in crime statistics dating back to 2015. Since Delhi is the national capital and has high crime rates similar to those of other states, it is included in the research. Similarly, the 2014-formed state of Telangana was excluded from the analysis due to a lack of relevant data. Since the statistics are not kept in chronological order and the crime rates are so low compared to the other states in India, I did not include any further union territories.

**Crime and Recession**

Figure 3 provides the comparative analysis of five states and one union territory from different zones for 2005, 2008, and 2009, representing the period before and after the Great Recession.

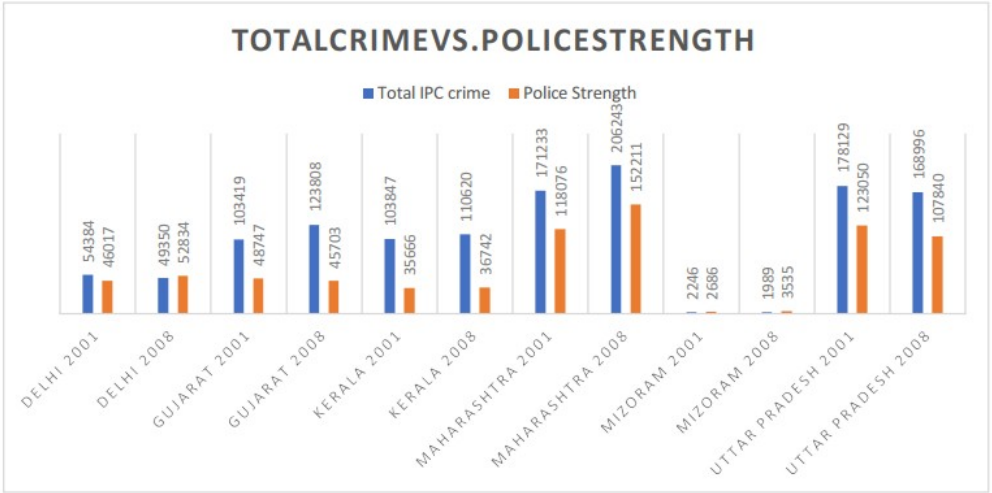





Source: NCRB; Graph: Author's construction

**Figure 3. Crime Growth Rates in selected States**

The provided state-by-state graphs are an excellent visual aid for comparing the pre- and post-crisis rates of various types of crime. The entire crime rate in Delhi increased both before and after the financial crisis. However, when we analyze crime rates by category, we find that they have all increased. The rate of property crimes dropped from 2005 to 2008, but then shot up dramatically in 2009. There was little variation in the overall crime rate across these states when the crisis ended, but violence against women increased. There was an increase in economic crime in the states of Uttar Pradesh and Maharashtra during the Great Depression. It was predicted that economic crimes would grow when the crisis ended, but in Kerala, Mizoram, and Gujarat, they actually fell. Since Mizoram is a relatively tiny state in the far northeast of India, its crime rate has not increased as rapidly as in other parts of the country.

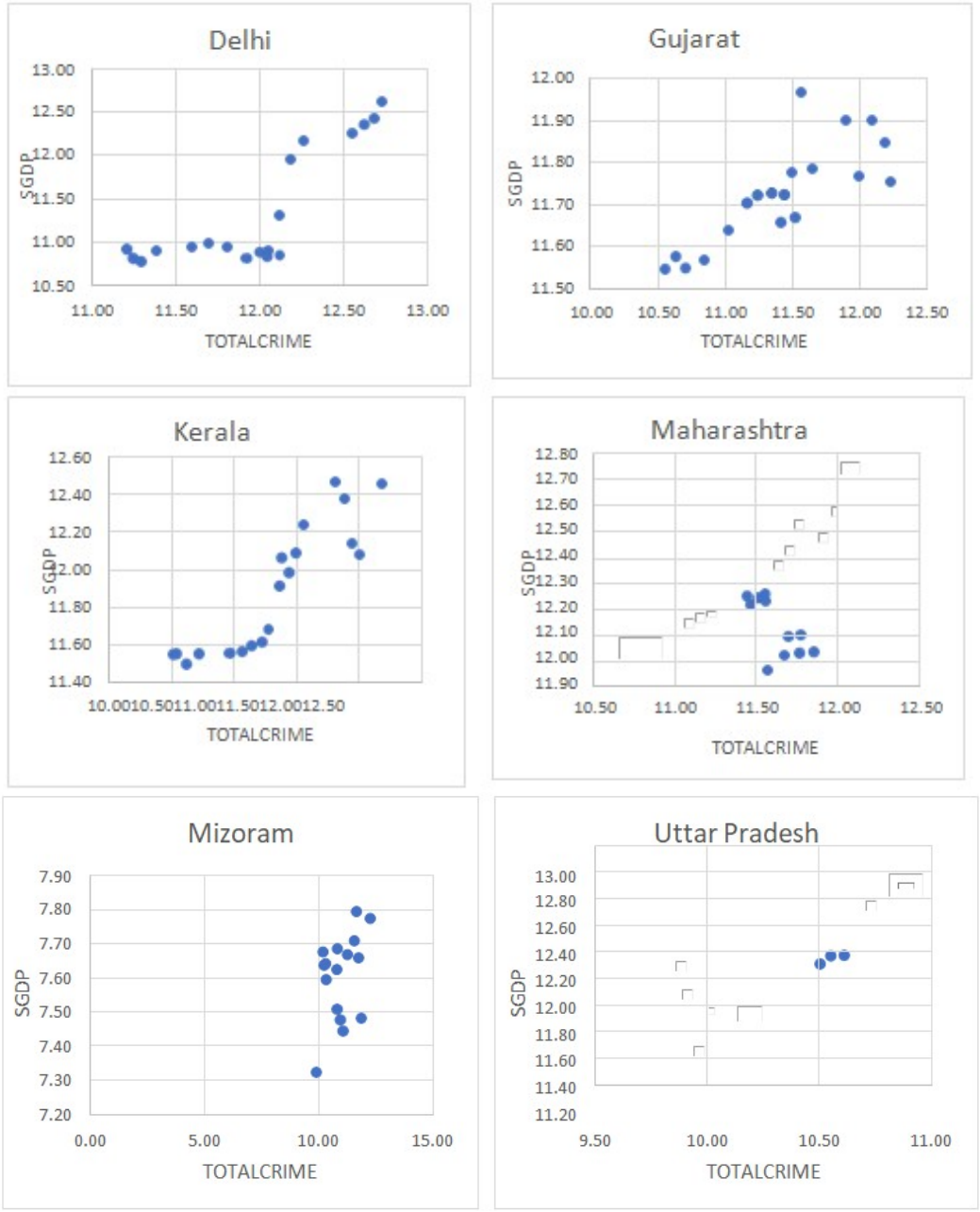



Data Source: NCRB, BPRD; Graph: Author's construction

**Figure 4. Total Crime vs. Police Strength in selected states (2005and2008)**

**Crime and Police strength:** The total number of recorded offences and the number of police officers in each state is shown in Figure 4. The states of Uttar Pradesh and Maharashtra have the highest crime rates despite having the largest police forces. In both years, the number of police officers in Delhi was almost equal to the number of offences recorded. When compared to the national average, Kerala's police force was somewhat weaker. Compared to 2005, only Gujarat and Uttar Pradesh had fewer police officers during the crisis year. The overall number of crimes reported in Mizoram decreased in 2008, compared to 2005. In contrast, there were more than 3,535 police officers in Mizoram in 2008, despite a total of just 1,989 crimes being reported. In 2005, Mizoram also had fewer crimes than it had police personnel.

**Crime and Economic Growth**




Data source: NCRB, data.gov.in; Graph: Author's construction

**Figure 5. Scatter Plot of SGDP and Total Crime (2005-2015)**

From 2005 to 2015, the GDP per capita and the overall crime rate of selected states are shown in Figure 5. Using the Kuznets curve concept proposed by Simon Kuznets in 1955, the graph's main goal is to seek for evidence of a non-linear connection between the two variables. He claims that as prosperity grows, so does income disparity, only to level out later (Kuznets, 1955). The graphs show that in Delhi and four states, crime rates tend to increase with the state gross domestic product (SGDP); nonetheless, numerous small inflection points can be seen in the curves. Although the arcs seemed like they were flattening out to make a U shape in reverse at the end.

# LITERATURE REVIEW

**Crime and Macro-economic conditions**

**Unemployment:** Increases in unemployment during a recession may exacerbate poverty and inequality, both of which might push some individuals into engaging in criminal activity as a means of survival. In 1968, Gary S. Becker published a groundbreaking theoretical paper that established a connection between economic circumstances and criminal behaviour. The economic theory of crime, which he developed later, posits that rising unemployment decreases the opportunity cost of illegal behaviour. To others, the potential for instant financial and material gain makes the danger of prosecution and participation in illicit actions more appealing. Rising unemployment rates will cause an increase in crime (Becker, 1974). Cantor and Land (1985) provided an explanation for two consequences of economic downturns (implied by unemployment) and crime in the United States. The incentive effect, in which joblessness encourages criminal behaviour, accounts for the positive correlation between unemployment and crime. The opportunity effect in the second effect is responsible for the negative correlation. Rising unemployment might lead to a drop in crime rates if the jobless take on a more protective role in their communities. There is a lack of consistency in the empirical evidence between unemployment and crime. The correlation between the two variables was determined to be positive, negative, or nonexistent. Not all the findings from crime studies can be extrapolated to a country with a developing economy since they are often conducted in the United States or Europe. There was no correlation between joblessness and criminal activity in studies conducted in New Zealand (Papps& Winkelmann, 2000), Sweden (Blomquist &Westerlund, 2014), or Canada (Janko &Popli, 2015). Phillips and Land (2012) found that unemployed people were more likely to steal cars in cities where unemployment was high. According to their research, unemployment has a beneficial effect on theft, robbery, and car theft on a state level. However, there was little evidence of a connection between theft and crime in individual states. Ayhan and Bursa (Ayhan& Bursa, 2015) looked at the 28 member states of the European Union and identified a correlation between unemployment and criminal activity. When unemployment rises by 1 percentage point in the EU-28, the crime rate increases by 1.53 points. Krohn (Krohn, 1976) examined the effects of unemployment and inequality on crime in a global sample of 38 nations and found no significant relationship between the two. However, he did find a high correlation between the degree of development and the GNP per capita and property crime. In their research on Iran between 1997 and 2013, Tabar and Noghani (2015) identified a strong positive correlation between unemployment and criminality. In Iran, the crime rate will increase by 0.44 percentage points if the jobless rate rises by 100. Anser et al. (2020) used system GMM to assess the connection between major macroeconomic parameters and crime rates in a panel of 16 developing nations from diverse regions. They discovered that between 1990 and 2014, unemployment added 0.425% to the crime rate in these nations.

There was no clear causality between crime and joblessness in India. Johansen co integration and granger causality were employed by Cui and Hazra (2017) to verify the existence of a connection between unemployment and criminality. They used time series data from 1991–2015 to examine changes in GDP per capita, unemployment, and inflation. An rise in unemployment of 10%, as determined by Bharadwaj (2014), was shown to result in a 0.4% decrease in property crime. According to his findings, poverty is a more significant influence in shaping criminal behaviour, particularly property crime.

**Poverty:** Not everyone who is poor becomes a criminal, and poverty is not the only cause of crime. Poverty may affect and worsen criminal behaviour in a variety of ways and contexts. As poverty rates rise, opportunities for advancement in education and work, as well as general quality of life, are diminished for the poorest members of society. There is a connection between all of these and criminal behaviour. According to Bourguignon (1999), the social cost of crime is the money lost as a result of the crime itself, as well as the money spent on crime prevention and punishment. He predicted that the cost may reach 3.7% of GDP in the United States and 7.5% of GDP in Latin America. Bhardwaj (2014) estimated that in India, property crime will increase by 2.7 percentage points for every 10 percentage point increase in poverty. Anser et al. (2020b) looked for a correlation between the poverty headcount ratio and crime rates using system GMM estimations and found none. However, from 2015 to 2024, the poverty rate rises in the IRF research and the Variance dynamic response (VDA) analysis shows that poverty is the most influential factor in shaping crime. Increases in poverty were associated with a 2.37-unit increase in property crime in 2000 and a 4.36-unit increase in 2005, according to a separate research conducted in Mexico (Martinez, n.d., 2012). In addition, the rate of violent crime in Mexico increased by 5.32 points in 2000 and by 3.99 points in 2005.

**Economic growth:** Economic development and crime have been studied extensively, but researchers have conflicting opinions on whether or not the two are causally related. There are two competing hypotheses in the research on how economic expansion affects crime rates. There are two possible explanations for this: one, people will commit crimes if they have to in order to make ends meet in a terrible economy, and two, crime rates will rise if the economy improves. It's possible that thefts and vandalism of property would be more common in affluent areas due to the greater worth of the goods on offer. There was no correlation between crime and GDP growth in the United States from 1960 to 1998, according to an empirical analysis by Oliver (2002). In spite of this, the economist (2011) discovered that crime rates fell in the United States between 2007 and 2010 as the country grappled with the economic slump. The ARDL method was used by Mulok et al. (2016) to examine whether or not there was a correlation between crime and GDP development in Malaysia between 1980 and 2013. When comparing changes in crime rates to changes in GDP per capita, they discovered a 0.93 percentage point correlation. In addition, they discovered a reciprocal causal connection between the two factors. Dutta and Husain (2009) came to a similar conclusion, observing that from 1999 to 2005, as India's GDP expanded, so did the country's crime rate. According to their SURE model, the crime rate rises by 28.69 points for every dollar in increased per capita state product. They speculated that this may be attributable to growing inequalities in the economy. The Kuznets curve, which links economic development and crime rates, was discovered in yet another research. According to research

by Nayebyazdi (2017), in the European Union, inequality rises with economic development and contributes to an increase in crime at first, before levelling off later. His research provided the groundwork for examining the non-linear connection between criminal activity and economic development in Indian states.

**The Great Recession:** Previous research has linked economic downturns to a rise in crime rates. However, in 2008-2009, worldwide crime rates declined, particularly in the United States and other industrialised countries. It was thought that the recession's effect on crime rates may have been mitigated by a combination of a more effective criminal justice system, stronger social safety nets, and more accommodating cultural norms (Rosenfeld, 2014). Additionally, there are numerous characteristics associated with crime that have counterinfluence, reducing the likelihood of certain forms of crime (Uggen, 2012). However, the recession's long-term effects on crime rates will be seen in the form of growing unemployment. In the United States and the United Kingdom, joining the workforce during a recession is associated with a 10% rise in the arrest rate and a 4% increase in the conviction rate (Bell, 2015). Both the empirical and theoretical literature are lacking for emerging economies. Seven of the 15 nations studied by the United Nations Office on Drugs and Crime (UNODC) during the global economic crisis of 2008–2009 saw an increase in some kind of crime. According to criminological theories, both violent and property crimes rise amid economic stress, and this trend in robberies and auto thefts is consistent with these predictions. High-violence nations like Brazil, El Salvador, and Jamaica have homicides (violent crime) that correlate favourably with economic downturns (UNODC, n.d.). The importance of this research was further underscored by the dearth of empirical data on the topic of recession in India. The financial, commercial, and confidence channels were identified by Viswanathan (2010) as the means by which the crisis in India propagated. There was a decrease in consumption by families and companies, which was reflected in greater unemployment rates in some sectors, as a result of the confidence channel, which are the feelings of consumers and investors. For three years before to the crisis, India's GDP growth was reported at + 9 percent, but this decreased to 6.7 percent in 2008-09. Private investments, substantial savings, a youthful population, strong productivity growth, and flexible fiscal and monetary policies all contributed to India's rapid recovery in 2010, when the country posted a growth rate of 7.7 percent (Dasgupta & Gupta, 2010). Furthermore, mortgage-backed securities and credit default swaps were not included for Indian banks and financial institutions. Compared to product exports, service exports fared better in 2008–09, remittances were US$46.4 billion, and foreign direct investment (FDI) remained a high US$27.3 billion (Aiyar, 2009). There is a lot written about the Great Recession in India, including its origins, effects, and governmental responses. However, studies that directly link the Great Recession to an increase in crime in India or any of its states are few and far between.

**Crime and Deterrence:** Deterrence may be defined as the dread of repercussions. When a person considers the likelihood of being caught, tried, convicted, and sentenced, he is less likely to do a criminal act. The deterrence hypothesis is grounded in the writings of 18th-century philosophers such as Jeremy Bentham(2017, [1789]) and Cesare Beccaria (1963, [1764]), who argued that the threat of severe punishment would discourage criminals from continuing their unlawful behaviour. A criminal, in their minds, is an intelligent person who carefully considers the pros and cons before doing any action. Potential criminals may be discouraged and crime rates could go down if more money was spent on security measures including expanding the police force, boosting patrols, and equipping the police force with the newest technology. In addition, offenders are deterred from committing the same crime again because of the serious consequences that follow their arrest and conviction. According to a CRS study (Finklea, n.d.), the influence of law enforcement on crime may go in either of three directions: up (if more police are added), down (if fewer are added), or unchanged (if nothing changes). From 2009-2013, in the United States, one extra police officer prevented 2.9 violent crimes and 16.23 property crimes (Mello, 2015). An increase of one percent in the size of the police force in England and Wales between 1989 and 1996 was associated with a decrease of 1.32 percent in vehicle crime and a decrease of 0.38 percent in property crime, according to a panel analysis (Witt et al., 1999). From 1999 to 2005, when there were more cops on the streets in India, the crime rate dropped by 0.02 percentage points. A surge in the number of people convicted of crimes and taken into custody has been attributed by the author to corruption and mismanagement in the Indian prison system, which reduces criminal inclinations (Dutta & Husain, 2009). Although Amaral et al. (2014) discovered contradictory outcomes on the presence of police force on various crimes at the district level from 1990-2007, this may be due to the fact that these findings were based on a small sample size. Increases in police presence were connected with a rise in property and economic offences. However, crimes and acts of aggression against women went down. Property crimes were down 0.19 percent, violent crimes were down 0.32 percent, economic crimes were down 0.06 percent, and crimes against women were down 0.21 percent as a result of the decrease in arrests. The role of deterrence in criminology is often cited in the academic literature. Most studies use deterrent factors including arrests, sanctions, convictions, and police presence. Based on the aforementioned research, I decided to use a model with three independent variables.

## Empirical Strategy

**Sample and Data:** The research uses carefully collected state panel data on crime rates, socioeconomic factors, and deterrent strategies from 2005 to 2015. The purpose of this research is to determine whether or not there is a non-linear link between crime and economic development in Indian states, and specifically to analyse the effects of the Great Recession on different categories of crime. The sample size for this analysis is 29 entities (states). New Delhi is the only state-like union territory included in the analysis since it has the highest reported crime rates. The information is compiled from several public databases. Crime and police data are collected from NCRB (National Crime Records Bureau, n.d.) and BPRD (Data on Police Organizations: Bureau of Police Research and Development, Government of India, n.d.), data for socio-economic variables are collected from OGD (Open Government Data Platform India, n.d.), (Government of India, Ministry of Education, n.d.) and Reserve bank of India (DBIE-RBI : DATABASE OF INDIAN ECONOMY, n.d.)

**Preliminary Tests and Results:** Two estimating techniques were used in this investigation. The two methods are the Two Stage Least Square-Fixed Effect and the Standard Fixed Effect Estimation, respectively (2SLS-FE). The fixed effect is favoured above the random effect in both models for a second reason in addition to the Hausman test findings. When examining the effects of factors that change over time, the fixed effect model is suitable. However, the fixed effect will exclude its influence from the model if there are time-invariant features (Torres-Reyna, n.d.). The Random effect may be used to quantify several time-invariant characteristics, such as gender, culture, religion, and languages, that may have an impact on crime in the Indian states. These factors are few and poorly preserved in India, nevertheless. Since they are difficult to quantify and their omission might result in bias from missing variables. Applying the Fixed effect technique in this situation will eliminate the bias and control any omitted time-invariant variations. When the error term is correlated with the independent variables, the 2SLS technique, which is an extension of the OLS method, is used. This issue is caused by an endogenous variable (pov) on the equation's left-hand side that is connected with the error term. In this situation, instrument variables are utilized twice. By using instrument variables, the expected value of the problematic variable is first obtained. The intended model is estimated in the second step using the endogenous variable's projected value. The 2SLS-FE estimate approach is used since the data are panel data. Three factors—omitted variables, simultaneity, and measurement errors—contribute to the endogeneity issue. As previously indicated, there are missing factors in the models that might have an influence on crime. Additionally, certain independent variables have strong correlations with one another, which might lead to inaccurate conclusions. The correlation matrix in table 1 and the Durbin-Wu-Hausman test in table 3 may be used to demonstrate the endogeneity issue. Additionally, the Panel Fixed Effects findings (Results section) revealed unusual patterns for the poverty and deterrent variables, which suggested issues with the model's specification.

**Test for Correlation:** One of the premises of the linear model is that the regressors are exogenous; that is, they don't have any relationship to the erroneous word. However, they are endogenous if any regressors exhibit correlation with the error term.

**Table 1. Correlation Matrix**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| (1)totalcrime | 1.000 | | | | | | | | |
| (2)Unemp | -0.239 | 1.000 | | | | | | | |
| (3) pov | 0.022 | 0.007 | 1.000 | | | | | | |
| (4) HEdu | 0.728 | -0.223 | -0.838 | 1.000 | | | | | |
| (5) conv | 0.927 | -0.212 | -0.023 | 0.656 | 1.000 | | | | |
| (6)PolStr | 0.829 | -0.168 | 0.020 | 0.612 | 0.388 | 1.000 | | | |
| (7)TArrest | 0.952 | -0.242 | 0.001 | 0.594 | 0.723 | 0.702 | 1.000 | | |
| (8)SoSecExp | 0.859 | -0.190 | -0.885 | 0.132 | 0.780 | 0.638 | 0.131 | 1.000 | |
| (9) SGDP | -0.269 | -0.053 | -0.332 | -0.208 | -0.211 | -0.302 | -0.248 | -0.061 | 1.000 |

The correlation matrix's findings indicate that crime is closely connected with all the factors outside than SGDP, unemployment, and poverty. Multicollinearity exists between independent variables, however. Employing education and social sector spending in the study would result in inconsistent and skewed findings because of the substantial correlation between poverty and those two factors. Dropping the problematic variables is the best strategy to deal with multicollinearity; however, since HEdu and SoSecExp have substantial correlations with the dependent variable, doing so might result in omitted variable bias.

**Sargan-BasmannTest:** To choose appropriate instrument variables (IVs)for poverty, two requirements are taken into consideration:

- It should be correlated with the endogenous variable. Cov(z,pov)□0
- It should be uncorrelated to the error term (□) and exogenous. Cov(z,□)=0

After the fulfillment of these requirements, an identification test must be done. Here, z represents the instrument variable. Since the equation has more than one IV, it is over identified. The equation can be just identified (one IV for one endogenous variable), over identified (more than one IVs) but never to be under-identified. The over identification restriction test compute Sargan's (1958) and Basmann's (1960) $Chi^2$ statistics for regression estimates through instrumental variables. The null hypothesis states that instruments are valid.

**Table 2. Sargan-Basmann Test Result**

| Test | $Chi^2$Statistics | P-value |
|---|---|---|
| Sargan(score)$chi^2$(1) | .007118 | 0.9328 |
| Basmann$chi^2$(1) | .006792 | 0.9343 |

**Durbin-Wu-Hausmann Test:** The proper IVs are chosen, and 2SLS is then conducted to carry out endogeneity analysis. After running a 2SLS regression using HEdu and SoSecExp as instrument variables, a Durbin-Wu-Hausman test (1954), (1974), (1978) is used to check the endogeneity in the model (IV).

**Table 3. Durbin-Wu-Hausman Test Results**

| Test | $Chi^2$statistics | P-value |
|---|---|---|
| Durbin(score) $Chi^2$(1) | 5.20041 | 0.0226** |
| Wu-HausmanF(1,208) | 5.08312 | 0.0252** |

**represents significance at 5 percent

The null hypothesis of the test denotes external variables (pov). The null hypothesis is rejected at 5 percent significance. It means that the variable poverty is endogenous.

**Hausman Specification Test:** In general, the Hausman specification test is used to choose fixed and models with random effects. For all estimate procedures, the suitable model is chosen using the Hausman test (1978). It checks to see whether there is no correlation between the individual effects and other model regressors. We cannot utilise random effect if the individual effects are associated with any regressor since it is no longer BLUE. The fixed-effect approach is more effective and dependable in these circumstances. The Hausman test's alternative hypothesis is that mistakes and regressors are associated, contrary to the null hypothesis that they are not. If we are unable to reject the null hypothesis, a random effect is utilised, and a fixed effect is used to do so.

**Table 4. Hausman Specification Test Results**

| | | Statistics | Prob>Chi2 | Results |
|---|---|---|---|---|
| FE/Remodel (Equation2) | Chi2(10) | 25.71 | 0.0042*** | Fixed Effect |
| 2SLS (Equation4) | Chi2(8) | 14.8 | 0.0626* | Fixed Effect |

***represents significance at1 percent, *represents significance at 10 percent

**Model Specification**

**The hypothesized crime functions are as follows:**

*Totalcrime/Vcrime/Pcrime/EconOff/CrimeAWomen=f(pov,Unemp,conv,Polstr,TArrest, SGDP, SGDP2, postcrisis, HEdu, SoSec Exp)* 1

All major crime heads have the exact model specification for all estimation techniques.

**a)FixedEffectModel:**

$$Totalcrime_{it}/VCrime_{it}/PCrime_{it}/EconOff_{it}/CrimeAWomen_{it.}=\alpha_{it}+\beta_0 pov_{it}+\beta_1 Unemp_{it}+\beta_2 Hedu_{it}+\beta_3 con_{it}+\beta_4 Polstr_{it}+\beta_5 TArrest_{it}+\beta_6 SoSecExp_{it}+\beta_7 Postcrisis_{it}+\beta_8 SGDP_{it}+\beta_9 SGDP2_{it}+\square_{it} \quad 2$$

b) 2SLS-FE:

The2SLSanalysisbeginswiththefirststagerun.

$$\pi o \varpi \iota \tau.=\delta_{55}+\beta 5_{55}+\theta_1 5555_{55}+\theta_2 55555555_{55}+\xi_{55} \quad 3$$

Where X represents all the exogenous variables included in the equation [2]. The instrument variables are HEdu (Higher Education) and SoSecExp (Social Sector Expenditure).However, the Stata program runs the two-stage equation as a single equation, and the two steps are given here for clarity.In the second stage equation, pov(poverty)'s predicted value is used instead of the observed poverty rates.

$$Total\ crime_{it}/VCrime_{it}/PCrime_{it}/EconOff_{it}/CrimeAWomen_{it.}=\square_{it}+\square pov_{it}+\square X_{it}+\square_{it} \quad 4$$

# RESULTS AND DISCUSSION

The results section is divided into three sub-sections. In the first sub-section, summary statistics of all variables are given. In the second sub-section, the Fixed effect panel estimation results are given. In the third section, results from 2SLS-FE are given.

**Descriptive Statistics:** Table 5 below provides the variables' descriptive statistics. The highest documented number of crimes—353,131—was committed in Uttar Pradesh in 2015, while the lowest—443—was committed in Sikkim in 2003. The standard deviation of 80323.65 shows that the data is more dispersed than the mean value. The majority of crime-related variables also deviate greatly from the mean, which is to be anticipated. Comparatively more minor crimes occur in certain Indian states than others. The highest number of violent crimes, 65,155, were reported in Uttar Pradesh in 2018, while the lowest number, 51, were reported in Sikkim in 2003. Only 100 property offences were reported in Sikkim during the same year as Delhi, which had 251,548 registered. In general, there are around 17,602 property crimes. In 2012, the state of Tripura registered no economic violations. The highest number of economic crimes, 27,071, was, interestingly, reported in Sikkim, which has low crime rates relative to major crime chiefs. Again at the top of the list for crimes against women is Uttar Pradesh. 2015 had 59,853 instances reported by the state. Only 24 incidences of crime against women were again reported in Sikkim in 2003. It should be mentioned, nevertheless, that many crimes, particularly those against women, go unreported since most victims are afraid of the perpetrator taking revenge,

others feel ashamed, and some don't want to jeopardise their families' honour. In addition, a lot of minor crimes like theft and robberies involving less expensive items go unreported. People are deterred from reporting crimes due to the drawn-out legal procedure and bureaucratic red tape.

**Table 5. Summary Statistic**

| Variable | Obs | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| Totalcrime | 551 | 79749.873 | 80323.655 | 443 | 353131 |
| VCrime | 551 | 9662.77 | 10993.135 | 51 | 65155 |
| PCrime | 551 | 17602.41 | 25192.662 | 100 | 251548 |
| EconOff | 550 | 3310.373 | 4524.686 | 0 | 27071 |
| CrimeAWomen | 551 | 8212.105 | 9680.782 | 24 | 59853 |
| HEdu | 522 | 768861.77 | 1020375.9 | 3850 | 6500000 |
| Unemp | 551 | 4.144 | 3.772 | 0.55 | 21.35 |
| pov | 539 | 23.709 | 12.672 | 3.48 | 57.2 |
| conv | 551 | 65739.857 | 78157.886 | 23 | 352340 |
| PolStr | 550 | 41862.042 | 38281.306 | 1641 | 209397 |
| TArrest | 551 | 170582.64 | 364999.43 | 246 | 3300000 |
| SGDP | 548 | 78621.44 | 62259.92 | 9888.25 | 439756 |
| SoSecExp | 550 | 183.137 | 245.808 | 2.6 | 1576.9 |

In Uttar Pradesh, there are a total of 6.5 million college-level students. Not surprisingly, given the vast disparity in size and population, Sikkim only had 3,850 students enrolled in 2003. Nagaland had the highest rate of unemployment in 2015, at 21.35 per thousand, while Gujarat had the lowest, at 0.55 per thousand in 2018. There is now a statewide average unemployment rate of 4.14 per one thousand people.In 2009, 57.2% of Odisha's population was considered to be poor, making it the state with the highest poverty rate. In 2003, just 3.48 percent of the population lived in poverty in Jammu & Kashmir. In addition to Odisha, states like Bihar, Jharkhand, and Chhattisgarh all have poverty rates higher than 30%. In 2015, 352,340 offenders were found guilty in Uttar Pradesh, but in 2017, just 23 were found guilty in Arunachal Pradesh. Nonetheless, we can observe that the number of arrests is far higher than the percentage of convictions. There were at least 246 arrests in Sikkim in 2014, whereas about 3.3 million people were taken into custody in Maharashtra in 2017. All 50 states have, on average, 41,000 civil and armed police officers. In 2017, there were 209,397 police officers in Maharashtra, making it the state with the largest police force. In 2011, Sikkim had the world's smallest police force, with just 1,641 officers on duty. The standard deviation of each state's GDP per capita is around $834, with the average being $1046.72. Goa's 2015 GDP per capita of 4,39,756 rupees ($5854.62) was the highest in India, while Bihar's 2012 GDP per capita of 9,888.25 rupees ($131.61) was the lowest. Uttar Pradesh spent the most on social services of any state in 2015. The expenditure was almost $2 billion, or 1,577 billion rupees, made by the state government. In 2005, the government of Sikkim spent little over $ 34 million, or 2.6 billion rupees.

**Fixed Effect Panel Estimation:** The result from Panel fixed effect estimation is given in table 6. It is given to present a reference point for acknowledging differences in the two estimation techniques used in this paper. The unexpected results are shown in FE estimation also laid the basis for undertaking an additional estimation procedure which is 2SLS-FE.

**Table 6. Fixed Effect Estimation Results**

| | (1) | (2) | (3) | (5) | (6) |
|---|---|---|---|---|---|
| VARIABLES | Totalcrime | VCrime | PCrime | EconOff | CrimeAwomen |
| pov | -0.00495 | -0.0507* | 0.0715 | -0.0984* | -0.116*** |
| | (0.0171) | (0.0306) | (0.0958) | (0.0504) | (0.0377) |
| Unemp | 0.0297 | 0.0348 | 0.0366 | 0.0280 | 0.0589 |
| | (0.0215) | (0.0383) | (0.120) | (0.0632) | (0.0473) |
| HEdu | -0.0289* | -0.0643** | 0.113 | -0.130*** | -0.0151 |
| | (0.0168) | (0.0299) | (0.0938) | (0.0494) | (0.0369) |
| conv | 0.147*** | -0.140** | -0.168 | 0.427*** | 0.151* |
| | (0.0367) | (0.0654) | (0.205) | (0.108) | (0.0807) |
| PolStr | -0.0370 | -0.0394 | 0.0595 | -0.0654 | -0.0981 |
| | (0.0574) | (0.102) | (0.321) | (0.169) | (0.126) |
| TArrest | 0.321*** | 0.515*** | 0.573** | 0.164 | 0.216** |
| | (0.0442) | (0.0789) | (0.247) | (0.130) | (0.0974) |
| SoSecExp | 0.175*** | 0.185** | 0.0452 | 0.183 | 0.215** |
| | (0.0416) | (0.0742) | (0.232) | (0.122) | (0.0915) |
| postcrisis | -0.00129 | 0.00337 | -0.00179 | -0.101* | -0.00256 |
| | (0.0193) | (0.0344) | (0.108) | (0.0567) | (0.0424) |
| SGDP | 0.603 | -3.047*** | 4.775* | 3.249** | 1.207 |
| | (0.441) | (0.786) | (2.462) | (1.296) | (0.970) |
| $SGDP^2$ | -0.0262 | 0.142*** | -0.226* | -0.128** | -0.0413 |
| | (0.0211) | (0.0376) | (0.118) | (0.0620) | (0.0464) |
| Constant | 2.012 | 21.01*** | -23.21* | -17.23** | -3.579 |
| | (2.499) | (4.458) | (13.97) | (7.349) | (5.500) |
| Observations | 218 | 218 | 218 | 218 | 218 |
| R-squared | 0.691 | 0.362 | 0.090 | 0.479 | 0.551 |
| Numberofc_id | 29 | 29 | 29 | 29 | 29 |

Standard errors in parentheses; ***p<0.01, ** p<0.05, * p<0.1

Unexpectedly, all categories of serious crime except property crime are negatively correlated with poverty. But only the first three are really noteworthy. As poverty rises by 1%, violent crime, economic crime, and crime against women all decrease. However, unemployment does not seem to affect various crime types in any noticeable way. Total crime drops by 0.02%, violent crime drops by 0.06%, and economic crime drops by 0.13% as a result of higher education. Conviction and total arrest both greatly increase crime, although in different ways. On the other hand, there is a 0.14-percent reduction in violent crime for every percentage point rise in convictions. Total arrest shows a positive correlation with all types of crime. Total crime would rise by 0.32%, violent crime by 0.52%, property crime by 0.57%, and crime against women by 0.26% if the arrest rate were to increase by 1%. Only the police-strength coefficients have the predicted negative signs, but they do not affect the results. Spending on the social sector would also considerably raise overall crime by 0.17 percent, violent crime by 0.19 percent, and crime against women by 0.22 percent. Great Recession (Post-Crisis) Dummy Variable Has No Statistical Significance. However, there is a negative sign next to every coefficient. While a 3% decrease in violent crime is shown with every 1% rise in SGDP, considerable increases in property crime (4.8%) and economic crime (3.2%) are seen instead. A U-shaped crime trend is shown by the negative sign of the SGDP coefficient and the positive sign of the SGDP2 coefficient. This trend predicts that as the economy continues to expand, violent crime will follow suit. The opposite is true for property and economic crimes; if the economy improves, crime rates will fall.
In this model, SGDP has no appreciable effect on either overall crime or crime committed against women.

**2SLS-FEEstimation:** The results from the 2SLS-F Eestimation are given in table7. Due to unusual results from the Panel fixed effect, 2SLS-FE is applied to address the endogeneity.

**Table 7. 2SLS-FE Estimation**

| | (1) | (2) | (3) | (4) | (6) |
|---|---|---|---|---|---|
| VARIABLES | totalcrime | VCrime | PCrime | EconOff | CrimeAwomen |
| pov | 0.317** | 0.266 | 0.238 | 0.169 | 0.294 |
| | (0.135) | (0.177) | (0.441) | (0.251) | (0.221) |
| Unemp | -0.0836* | -0.0733 | -0.0332 | -0.0565 | -0.0870 |
| | (0.0508) | (0.0668) | (0.166) | (0.0945) | (0.0833) |
| conv | 0.236*** | -0.0666 | -0.0736 | 0.461*** | 0.272** |
| | (0.0774) | (0.102) | (0.253) | (0.144) | (0.127) |
| PolStr | -0.130 | -0.125 | -0.00814 | -0.126 | -0.219 |
| | (0.111) | (0.145) | (0.362) | (0.205) | (0.181) |
| TArrest | 0.296*** | 0.459*** | 0.671*** | 0.0511 | 0.202* |
| | (0.0719) | (0.0945) | (0.235) | (0.134) | (0.118) |
| SGDP | 3.842** | 0.204 | 6.199 | 6.138** | 5.281** |
| | (1.547) | (2.033) | (5.061) | (2.875) | (2.536) |
| $SGDP^2$ | -0.184** | -0.0168 | -0.293 | -0.270* | -0.239* |
| | (0.0767) | (0.101) | (0.251) | (0.143) | (0.126) |
| postcrisis | 0.0928*** | 0.106** | 0.00933 | 0.00792 | 0.111** |
| | (0.0315) | (0.0414) | (0.103) | (0.0585) | (0.0516) |
| Constant | -14.84* | 4.193 | -30.95 | -31.99** | -24.83* |
| | (8.139) | (10.70) | (26.63) | (15.13) | (13.34) |
| Observations | 218 | 218 | 218 | 218 | 218 |
| Numberofc_id | 29 | 29 | 29 | 29 | 29 |

Standard errorsin parentheses; ***p<0.01, ** p<0.05, * p<0.1

At the 5 percent level of significance, the poverty variable in the model only has an effect on overall crime. However, the prior estimate shows that no major criminal figures have shown up bearing an ominous indication. In this model, spending on higher education and social services act as instruments to control for the endogenous poverty variable. If poverty levels rose by one percentage point, crime rates would go up by 0.31 percent. In 2015, the United Nations Development Program (UNDP) published the results of its worldwide Multidimensional Poverty Index (MPI), and India was one of the ten nations whose MPI levels decreased. Between 2006 and 2016, 271 million Indians were rescued from poverty thanks to the country's efforts. Jharkhand's poverty rate has fallen from 74.9 percent in 2005-06 to 46.5 percent in 2015-16, the largest decline of any Indian state ((MPI) | Human Development Reports, n.d.). The crime rate in Indian states may go down if multidimensional poverty is reduced. While progress has been made in alleviating poverty in India, 28% of the population still lives below the poverty line in 2015. A large part of the population may be missing out on the benefits of anti-poverty initiatives because of this. Many economic initiatives, for instance, prioritise helping those who are already doing well rather than those who are poor and hence more likely to commit crime. Young people, the jobless, the poorly educated, and the unskilled are nearly invariably overlooked by these initiatives, leading them to turn to crime. In the baseline model, unemployment had no discernible effect on crime rates; nevertheless, it now reduces overall crime by 0.08 percent. Nothing else has changed in terms of crime rates' significance. The outcomes for unemployment were predictable, given the contradictory findings in the literature. Depending on the study, researchers have discovered either a positive (Ayhan& Bursa, 2015) or negative (Bharadwaj, 2014) (Cantor & Land, 1985) (Janko &Popli, 2015) (Krohn, 1976) correlation between joblessness and criminality. Opportunity cost of unemployment, as described by Cantor and Land (1985), accounts for the inverse link. Criminals have fewer opportunities to commit crimes because the unemployed are more likely to be at home and ready to offer security for their homes and family. As a result, it will have a deterrent impact on criminal activity. The three variables representing deterrence have the same signs and levels of significance in both models. An rise of 0.23

percent in overall crime, 0.46 percent in economic crime, and 0.27 percent in crime against women is a substantial effect on the conviction rate. As predicted, only violent and property offences show statistical significance. Many convicted offenders in India do not always serve prison time. If the offence was one for which bail may be granted (section 389 CrPc, n.d.), the convicted person can commit further offences while out on bail until the outcome of the appeal. The existence of a connection between the criminal and the victim helps to explain the recent uptick in crimes committed against women. In most cases, the perpetrators are spouses, other family members, or close friends. Many times, women are harassed until they recant their charges and the perpetrator is acquitted. Furthermore, the Indian police and court systems are plagued by corruption and bureaucracy, which might prolong the offender's evasion of justice. Most categories of serious crime, with the exception of economic crime, are likewise significantly affected favourably by the arrest rate. An increase of one percent in arrests would lead to a 0.29 percent rise in overall crime, 0.45 percent rise in violent crime, 0.67 percent rise in property crime, and a 0.20 percent rise in crime committed against women. These findings are consistent with those of Dutta and Husain (n.d.) (2009), who discovered that there is a positive correlation between conviction and crime in India, as well as between arrest and crime. A person's conviction and imprisonment are not certain only because of an arrest. Because of the criminal justice system's inefficiency and weakness, trials take longer than they should, clouding jurors' ability to make fair decisions. Petty crime offenders may be deterred by the possibility of their release on bond or after receiving a warning for their offence. And corruption, particularly favouritism, just makes things worse. Criminals who are related to prominent persons in politics, commerce, or other fields are sometimes able to avoid punishment or get special treatment under the law. Furthermore, in many Indian states, corruption permeates the whole police force, from the lowest ranks to the highest, making it difficult to dispose of criminal cases. The police officers' access to unchecked authority is the root cause of this problem (Lamani&Venumadhava, 2013). By creating a safe space for criminals and encouraging them to commit crimes, bribery allows criminals to wander freely. There is no evidence that increasing police presence reduces violent crime, although the trends are consistent with what was predicted and supported by prior research (Mello, 2015). (Witt et al., 1999). The crime rate may be lowered by increasing the number of police officers.

In the prior model for overall criminal activity, SGDP and SGDP2 had no role. In this case, both have a major bearing on the prevalence of crime overall, economic crime, and violence against women. Total crime would go up by 3.8% for every percentage point increase in SGDP, whereas it would go down by 0.18 percentage points for every percentage point increase in SGDP2. Similar to how economic offence would grow by 6.1% as SGDP grew, it would begin to decrease by 0.3% as SGDP2 grew. As SGDP grows, crime against women increases by 5.2% but has a 0.2% decreasing trend. For overall crime, economic offence, and crime against women, this points to an inverted u-shaped curve against GDP growth. In the early stages of economic expansion, crime rates tend to climb before levelling off. Increasing economic disparity may account for this correlation. The increase in wages has not benefited all segments of society in this country. Even now, the poorest states in India include Bihar, Assam, Odisha, Rajasthan, and Uttar Pradesh, while the richest are Gujarat, Maharashtra, Haryana, Kerala, and Punjab. Inequality exists in these countries as well. People may feel emboldened to perpetrate acts of violence and vandalism against the wealthy as a result of this social injustice. If criminals can't find anybody else to hurt, they'll pick on the most defenceless members of society, including kids and women. Consequently, crimes against women increase. We know that expanding economies may widen the income gap, which may have a negative effect on crime. However, crime rates begin to fall when the economy improves and inequality decreases (Nayebyazdi, 2017). In contrast to the previous estimate, in which the three major crime categories each had a unique curve, all three display an inverted U-shaped curve in this one. In this estimating method, the dummy variable post-crisis is positive and has a major effect on criminal activity. Assuming no change in other factors, crime rates increased by 0.09 percent overall, 0.10 percent for violent crimes, and 0.11 percent for crimes committed against women during the great recession of 2008 and 2009. It agrees with the conclusions of the UNODC concerning third world nations. They discovered that nations with a higher propensity for violence also had higher rates of violent crime. Joblessness tends to spike during economic downturns. The unemployment rate in India has been around 5% for the previous two decades, which is quite high for such a populous nation (Statista, n.d.). As a result of jobless people becoming more frustrated, criminal activity is expected to rise. This runs counter to the conventional wisdom that the Great Recession of 2008–2009 will lead to lower crime rates as a result of heightened parental oversight. All of the data came from developed nations. Therefore, it would be unreasonable to assume the same result for emerging nations.

# CONCLUSION

**Summary of Findings:** The effects of poverty, the Great Recession, deterrence, and economic development on five types of significant crime in Indian states were examined in this article. There are 28 Indian states and 1 union territory included in the sample, and the time period is 2005-2015. Ten independent variables and five dependent ones are employed in this study. I used two distinct estimate strategies, Panel Fixed effect and 2SLS-FE, and the results varied. There was an econometric flaw in the fixed effect panel estimate, which meant that it did not offer a sufficient amount of data. Unemployment was initially underappreciated whereas the negative symptoms associated with poverty were a complete surprise. To get over the endogeneity problem and provide a more reliable outcome, we use 2SLS-FE.

**The study found mostly these results:** There is a strong correlation between poverty and all types of crime, and poverty also has a major effect on overall crime rates. Due to the opportunity effect, which was proposed by Cantor and Land, higher unemployment rates lead to lower overall crime rates (1985). The crime rate declined significantly during the Great Recession of 2008–2009. As a result, crime rates throughout Indian states rise, as do rates of violent crime and crime against women. The

correlation between a country's GDP and its crime rate is not linear. The inverted u-shaped curve for total crime, economic crime, and crime against women shows that crime increases with a rise in SGDP at first but decreases as the economy develops. Conviction and police force both play important roles as deterrents against criminal behaviour. Because of significant corruption in the police system, convictions and increases in police personnel only serve to make the crime problem worse in Indian states. However, the intended impact of dissuasion is not produced. It is common knowledge that poverty is widespread in India, affecting at least two-thirds of the population (Poverty in India, n.d.). That's a huge sum for such a big population. Although it would be unfair to generalise that all impoverished individuals are criminals, it is probable that poverty provides a foundation for criminal activity. Poverty may negatively impact a person's mental health, making them more likely to commit violent crimes including crimes against women. Numerous plans and initiatives are now in place to finally end poverty for good. However, these programmes' potential for impact is limited, and they may not always reach their intended audience. Corruption and ineffective leadership, particularly in rural regions, make it difficult for these kinds of initiatives to succeed. Therefore, the best way to increase human capital is via education. Future crime may be reduced if resources were put toward improving people's education and career prospects. Moreover, government authorities should educate people about poverty programmes via different media, including commercials on radios and televisions, in order to overcome the ignorance of the general public and increase participation. The legal system in India needs to be more flexible. The efficiency of the judicial system may be improved by adopting new laws and procedures in light of the current criminal landscape. Corruption, a lack of openness, and a lack of cooperation are important problems in the Indian judicial system. This has to be fixed so that the legal system can function consistently. For swifter trials and convictions, more specialised "fast track" courts, judges, and attorneys should be established. Although the effects of the Great Recession were less severe in developing nations, growing inequality is a major concern. Once again, closing the gap will require investment in education, an increase in the minimum wage, and the creation of more work possibilities. Second, in order to reduce criminal activity, bribery of government officials must be severely punished and closely monitored. Ex-offenders need access to programmes and schemes that help them find work, schooling, and housing that allows them to lead respectable lives and discourages them from returning to criminal activity.

**Limitation and Future Recommendation**

This study has certain caveats that should be taken into account. The first is that we have access to the information. The most recent census data for India is from 2011, and it is done every 10 years. Because of data limitations, we were unable to account for several relevant factors that may have an impact on crime rates, such as income disparity and population. Second, Telangana and the Union Territories are not included since they did not have sufficient data for the years included in this study. The results of this research may change if they were included. Separate studies of high-crime and low-crime states may help researchers determine which policies and programmes are most effective in each situation. District, town, and village statistics, if available, may potentially provide a fresh perspective on this study. Since previous crime rates may affect future crime rates, several studies have recommended introducing a lag variable of crime. The lack of a correlation between the deterrence factors and the crime variables across the Indian states examined in this research suggests that the inclusion of a lag of police strength variable may produce different outcomes. Crime rates in a given year may be affected by the previous year's police staffing levels. However, this paper's premise was hampered by the authors' lack of expertise in advanced econometrics. It is possible to reproduce the model used in this study by adding these supplementary variables.

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