CRIME IN INDIA

BY

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ALLIANCE UNIVERSITY
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Executive Post Graduate Diploma in Management

Term – IV: Project Work

Declaration

This is to declare that the Report entitled "**CRIME IN INDIA**" has been made for the partial fulfilment of the Course: Project Work in Term – IV by me on **CRIME IN INDIA shared on Open Govt Data Platform India portal under Govt. Open Data License - India** under the guidance of Prof. Mihir Dash

I confirm that this Report truly represents my work undertaken as a part of my Project Work. This work is not a replication of work done previously by any other person. I also confirm that the contents of the Report and the views contained therein have been discussed and deliberated with the Faculty Guide.

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ABSTRACT

In today's world of extensive crime, fighting crime is a major concern. With data analytics, we could see crime epidemics reduce to a large scale. It is proving to be a valuable tool in the arsenal of law enforcement officials in every jurisdiction. By analyzing data for major crimes such as shootings, murders and robberies, patterns and trends in the behavior of these crimes can be noted down which would in turn help in reducing these crimes. These crimes can be noted down for weeks or even anniversaries of them a year to figure out the patterns in an area. The current study investigated the crime in India using analytics which involves variety of data in real world. This dataset contains complete information about various aspects of crimes happened in India from 2001. There are many factors that can be analyzed from this dataset which helps to understand better about crime in India. The study sought to determine many things like major reason people being kidnapped in each state, Offenders relation to the rape victim and creation of awareness to common people and areas which are not safer in India. The study used a case study research design. The target population was the citizens of India and data collected is from National Crime Records Bureau (NCRB). The primary data was collected based on facts and investigation done by National Crime Records Bureau (NCRB), Govt of India which published this dataset on their website and also has shared on Open Govt Data Platform India portal under Govt. Open Data License - India. Content analysis was used to analyze qualitative data while the quantitative data was analyzed using descriptive statistics using SPSS. Regression and Correlation analysis was used to show the relationships among the variables. The data was presented through percentages, means, standard deviations and frequencies. The study found many interesting facts on Investigation analysis has significant relationship with decrease in crime rate and helps crime department to take decisions more wisely to make forward steps in decreasing crime rate and therefore is a key determinant in influencing citizens of country. The study determined many interesting facts which are beyond imagination using data visualization techniques. Analytics, with its enormous use in various functioning in the society, has proven to be useful in fighting crimes. Police, along with data, can solve and even prevent these crimes using accurate and timely data of crimes. Analytics can help police with their job and even come up with better results.

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Crime is no longer viewed as only one problem to a given society. Rather it is a part of understanding a nation's socio, cultural, political, and economic situation. India is no exception. Crime exists in India in various forms such as murder, extortion, drug trafficking, money laundering, fraud, human trafficking, poaching and prostitution etc.

Crime produces law and order situation. It is a social evil. It is generated by the society and the society also suffers a lot because of crime committed by its members. The rising wave of crime to-day has caused alarm any the public. With the development in science and technology criminals are using scientific techniques while committing the crime and police has been baffled by the techniques used. In every society there are some accepted patterns of behavior approved by the society and culture. To lead a harmonious life following the approved patterns of behavior certain rules, laws and regulations are framed. Anybody who violates these rules is said to commit a crime. In India now, crimes are so rampant that in one hour about 187 cognizable crimes under IPC and 443 crimes under the local and special laws are committed

1.1.1 Concept of Crime

- Crime is an anti-social and illegal behavior to which penalties are attached. This anti-social behavior is rejected by the by the society and punished by law. Those actions which are sinful but no punishments are attached to them they are not criminal acts like anti-social activities.
- Through no anti-social activity is punished by law the society and public condemns it. But in certain criminal tribes stealing is not looked upon as a crime. Children are

praised if they steal property from others. They are taught the art of crime and how to become careful while committing the crime.

1.2 Types of Crime

For the purposes of data collection and comparison, crime data is usually divided into two broad categories:

- personal crimes and,
- property crimes.

Personal crimes include crimes of violence such as murder as well as any other criminal offenses that involve direct contact between a person who carries out a harmful, illegal or immoral act and a victim, such as rape, aggravated assault, and battery. **Property crimes** are those in which personal property is the object of the offense and there is no force or threat of force used against the person to whom the property rightfully belongs.

1.2.1 Correlates of Crime

The are many factors which are major causes of occurring crime like aggression which states that with aggression crime can be happened. With lack of proper education, crime may happen. Due to unemployment, to earn their live hood crime can also happen. Here are few such correlations:

- Age and Crime
- Aggression and Crime
- Citizenship and Crime
- Education and Crime
- Unemployment and Crime
- Family and Crime
- Gender and Crime
- Gun Crime
- Immigration and Crime
- Intelligence and Crime
- Mental Illness and Crime
- Neighborhoods and Crime

- Peer Pressure and Crime
- Race and Crime
- Religion and Crime
- Social Class and Crime
- Crime Victimization
- Weather and Crime

Crime is related to variables which are correlates of criminal behavior. Correlates of crime are variables that relate to crime. It is important to understand that correlation is not the same as causation. Thus, while the correlates we will be examining are in some ways connected with criminal behavior, they do not necessarily cause crime. The major correlates of crime are age, gender, race, drug, socioeconomic status in which few are explained in this project.

1.3 Research Problem or Problem Definition

Crime prevention is critical to maintain law and order in the country. Deterring criminals through deployment of more police is one of the major strategy practiced. However, their relationship is very complex. There are also other reasons such as unemployment, poverty, a lower per capita income which can affect the crime rates in India. Accordingly, this research will attempt an overview of the trends and characteristics of crime and crime control in India and in doing so will provide a general understanding of crime in Indian society. Going deeper into the concept of crime, it is related to various factors like weather, like crime is more in summer in Northern states. Crime Vs Time which states during midnights crime is happening more particularly after 2:00 AM IST. This project helps us in finding few such correlations with a deeper picture of visualization.

1.3.1 Data and Methods

The data on crime, arrests, and prosecutions, upon which we rely, come in large part from the Analytical Report on Crime, published by National Crime Records Bureau. The Analytical Report on Crime is the most comprehensive compilation of statistical data on crime, police activity, and the Crime Rates in India. Although official crime

statistics are not entirely accurate, they are the most reliable sources available and do provide an indication of crime trends.

According to the Criminal Code, offenses are classified into seven sub-categories: violent crimes, property crimes, forgeries, and crimes by government officials, crimes against public morals, crimes of negligence, and others. Of these, violent and property crimes consist of approximately four-fifths of all Criminal Code Offenses. The violent crime category is composed of criminal homicide, robbery, arson, rape, assault, aggravated assault, intimidation, kidnapping, and illegal confinement. Property crimes consist of larceny theft, stolen property, fraud, embezzlement, breach of trust, and destruction of property. Official Criminal data of National Crime Records Bureau are used to determine the statistics of crime in India.

1.3.2 Responsible factors for crime rate

There are many factors which are responsible for increase in crime rate even though a lot of unstable political and social conditions continued to exist. It is interesting to note that increases in crime rates, show different patterns over the past four decades: a notable increase in the crime against human body; a decrease in crime against property. Indian society experienced rapid structural changes brought on by industrialization and modernization after Independence. Major institutions like the family, schools, government, churches, and others were undergoing rapid transformation. An increasing number of Indians moved to urban areas, the society became increasingly heterogeneous.

Social changes always tend to produce social disorganization, some of which is crime. While property crimes normally show a rapid rise with increased industrialization in India, economic growth and an increase in employment opportunities, brought on by industrialization and modernization in the cities, seemed to contribute to a moderate increase in property crimes during that time. As Indian society increasingly put greater emphasis on material success as a means of determining personal worth, there was a correspondingly higher rate of property crime. As India enjoyed enormous economic growth, and the overall size of the Indian economy rapidly expanded during the 1990s, the number of available targets for property offenses increased as well.

One of the main reasons for the sustained trend in the increase in the number of major criminal offenses may be attributed to a continued increase in the number of violations of legislation. The other reason is due to revisions and improvements of the criminal justice system, laws and regulations. The improved regulations represent an attempt to exert more efficient control over India's increasingly complex society.

1.4 Research Objectives

The objectives of the study were to:

- To study Correlates of crime using descriptive statistics and finding various insights from the data which is interesting and useful.
- Establish the relation between correlates of crime like age with crime using predictive data analytics.
- Establish the relation between correlates of crime from dataset of Juveniles who are arrested and their education using predictive data analytics.

1.5 Value of Study

This study helps in finding interesting insights by analyzing this dataset of crime. This is also helpful for crime investigation who are interested in finding answers to the things like main reason behind people being killed in each state, Juveniles family back ground, education and economic setup, state which is safest for foreigners etc.

Before understanding the data present for further analysis, it is more important to understand the meaning of crime and how it is impacting India in various forms. As the project is to understand the various correlates of crime like education, age and other social and economic factors and its influence on crime in many ways.

The government from this study would understand the value of education and the factors which are highly influenced and the reasons by which more crimes are happening in our country and therefore would help in taking measures to eradicate them and helps in safe guarding the interests of common people.

This study forms a basis upon which future research on crime and further analysis in deeper can be established. This work is done using excel techniques under data science and SPSS for predictive data analytics. The findings may be resourceful in providing viable information to academicians, researchers and students on various concepts involved like logistic regression analysis and polynomial regression.

1.6 Conclusion

Trends in crime and the crime rate in India over the past four decades can be summarized as follows. The incidence of crimes fluctuated during that time. One exception to this trend was the crime against human body, which displayed a general pattern of increase. However, it is especially noteworthy that the overall crime rate rose during the 1990s. A cross national comparison with USA reveals that overall rates of crime in India were substantially lower than that in the U.S.

According to this study, the overall crime problem in India is not as serious as that in the U.S. However, recent data indicates an alarming increase in the crime rate. From the data analyzed, we can determine that economic, political, and social factors have played a crucial role in the occurrence of crime and crime control practices in India. Recent phenomena, like the financial crisis and the current political stalemate in India, seem to have contributed to this recent disturbing increase in crime. If these factors can be stabilized, then we may anticipate the improvement of the crime situation in India.

CHAPTER TWO
FUNDAMENTAL METHODOLOGY

2.1 Research Design

This study used descriptive research. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution and therefore offered a better clarification on online advertising, and ultimately give a clear picture on the correlates of crime and its influencing factors.

2.2 Population of the Study

This dataset contains information about various aspects of crimes happened in India from year 2001 which involves investigation report from a total of 35 states and its districts containing crime reported divided among district level in India.

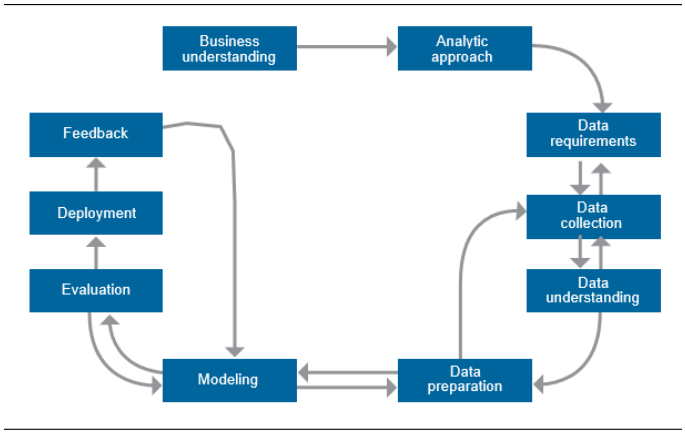
The data collected and used in this project is explained in separate chapter with name content which explains the description of data in brief.

2.2.1 Data Collection

The research made use of primary data, which was published from the National Crime Records Bureau (NCRB), Govt of India, on their website and has shared on Open Govt Data Platform India portal under Govt. Open Data License – India.

2.3 Methodology

Figure 2.1 Foundational Methodology for data science



2.3.1 Stage 1: Business Understanding

As discussed above business understanding is the major step of business. This first stage lays the foundation for a successful resolution of the business problem. To help guarantee the project's success, the sponsors should be involved throughout the project to provide domain expertise, review intermediate findings and ensure the work remains on track to generate the intended solution.

Here the problem statement is to investigate the correlates of crime such as age, gender and its influencing factors.

2.3.2 Stage 2: Analytical approach

Once the business problem has been clearly stated, the data scientist can define the analytic approach to solving the problem. This stage entails expressing the problem in the context of statistical and machine-learning techniques, so the organization can identify the most suitable ones for the desired outcome. The analytical technique used in our problem is descriptive statistics. Descriptive analysis helps us in giving a clear picture of sample parameters like mean, median and quartile ranges of data. If data is large we use Inferential statistics like calculating population mean and variance. In our case descriptive statistics is likely enough to obtain information.

2.3.3 Stage 3: Data requirements

The chosen analytical approach determines the data requirements. Specifically,

the analytical methods to be used require certain data content, formats and representation. Here, a total of 13 data sets were included to understand and analyze to bring useful insights from data. They are

Figure 2.2 Data Requirement File names

NAME OF DATA FILE
10_Property_stolen_and_recovered
20_Victims_of_rape
25_Complaints_against_police
28_Trial_of_violent_crimes_by_courts
29_Period_of_trials_by_courts
31_Serious_fraud
32_Murder_victim_age_sex
35_Human_rights_violation_by_police
39_Specific_purpose_of_kidnapping_and_abduction (1)
42_Cases_under_crime_against_women
43_Arrests_under_crime_against_women
18_01_Juveniles_arrested_Education

2.3.4 Stage 4: Data Collection:

In the initial data collection stage, data scientists identify and gather the available data resources—structured, unstructured and semi-structured—relevant to the problem domain.

Typically, they must choose whether to make additional investments to obtain less-accessible data elements. It may be best to defer the investment decision until more is known about the data and the model. If there are gaps in data collection, the data scientist may have to revise the data requirements accordingly and collect new and/or more data.

While data sampling and sub setting are still important, today's high-performance platforms and in-database analytic functionality let data scientists use much larger data sets containing much or even all the available data. By incorporating more data, predictive models may be better able to represent rare events such as disease incidence or system failure.

Figure 2.3 Data Description

NAME OF DATA FILE	Period	Scale	Variables	Rows* Colums
10_Property_stolen_and_recovered	2001-2010	Nominal,Ordinal, Interval	7	2450*8
20_Victims_of_rape	2001-2010	Nominal,Ordinal, Interval	10	1051*11
25_Complaints_against_police	2001-2010	Nominal,Ordinal, Interval	21	350*22
28_Trial_of_violent_crimes_by_courts	2001-2010	Nominal,Ordinal, Interval	6	4474* 7
29_Period_of_trials_by_courts	2001-2010	Nominal,Ordinal, Interval	10	1787*11
31_Serious_fraud	2001-2010	Nominal,Ordinal, Interval	8	448*9
32_Murder_victim_age_sex	2001-2010	Nominal,Ordinal, Interval	10	1018*11
35_Human_rights_violation_by_police	2001-2010	Nominal,Ordinal, Interval	6	2268*7
39_Specific_purpose_of_kidnapping_and_abduction (1)	2001-2010	Nominal,Ordinal, Interval	20	3570*21
42_Cases_under_crime_against_women	2001-2010	Nominal,Ordinal, Interval	15	4166*16
43_Arrests_under_crime_against_women	2001-2010	Nominal,Ordinal, Interval	15	4166* 16
18_01_Juveniles_arrested_Education	2001-2010	Nominal,Ordinal, Interval	7	351*8

2.3.5 Stage 5: Data Understanding and Cleaning

After the original data collection, data scientists typically use descriptive statistics and visualization techniques to understand the data content, assess data quality and discover initial insights about the data. Additional data collection may be necessary to fill gaps. The data is cleaned using excel when found NULL treating the data as numerical zero and after cleaning of data the prepared data is deployed.

2.3.6 Stage 6: Data Preparation

This stage encompasses all activities to construct the data set that will be used in the subsequent modeling stage. Data preparation activities include data cleaning with missing or invalid values, eliminating duplicates, formatting combining data from multiple sources (files, tables, platforms) and transforming data into more useful variables. Data preparation is usually the most time-consuming step in a data science project. In many domains, some data preparation steps are common across different problems. Automating certain data preparation steps in advance may accelerate the process by minimizing ad hoc preparation time. With today's high performance, massively parallel systems and analytic functionality residing where the data is stored, data scientists can more easily and rapidly prepare data using very large data sets.

2.3.7 Stage 7: Modeling:

Starting with the first version of the prepared data set, the modeling stage focuses on developing predictive or descriptive models according to the previously defined analytic approach. With predictive models, data scientists use a training set

(historical data in which the outcome of interest is known) to build the model. The modeling process is typically highly iterative as organizations gain intermediate insights, leading to refinements in data preparation and model specification. For a given technique, data scientists may try multiple algorithms with their respective parameters to find the best model for the available variables.

2.3.8 Stage 8: Evaluation

During model development and before deployment, the data scientist evaluates the model to understand its quality and ensure that it properly and fully addresses the business problem. Model evaluation entails computing various diagnostic measures and other outputs such as tables and graphs, enabling the data scientist to interpret the model's quality and its efficacy in solving the problem. For a predictive model, data scientists use a testing set, which is independent of the training set but follows the same probability distribution and has a known outcome. The testing set is used to evaluate the model so it can be refined as needed. Sometimes the final model is applied also to a validation set for a final assessment.
In addition, data scientists may assign statistical significance tests to the model as further proof of its quality.

2.3.9 Stage 9: Deployment

The model is developed into the production environment or a comparable test environment. Usually it is deployed in a limited way until its performance has been fully evaluated. Deployment may be as simple as generating a report with recommendations, or as involved as embedding the model in a complex workflow and scoring process managed by a custom application. Deploying a model into an operational business process usually involves additional groups, skills and technologies from within the enterprise.

2.3.10 Stage 10: Feedback

By collecting results from the implemented model, the organization gets feedback on the model's performance and its impact on the environment in which it was deployed. Analyzing this feedback enables data scientists to refine the model to improve its

accuracy and usefulness. They can automate some or all the feedback-gathering and model assessment, refinement and redeployment steps to speed up the process of model refreshing for better outcomes.

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2.4 Validity and Reliability

Reliability can be ensured by minimizing sources of measurement error like data collector bias. Data collector bias was minimized by the researcher's being the only one to administer the questionnaires, and standardizing conditions such as exhibiting similar personal attributes to all respondents, e.g., friendliness and support. The data which is presented as NULL indicating the value is not present or either zero. To analyze the data with more accuracy it is treated as zero.

2.5 Data Analysis

The study applied both nominal and ordinal scale to measure a range of factors establishing the relation between crime and age, crime and education of Juveniles etc. Descriptive statistics was used to analyze this data. The mean responses, standard deviation and other relevant statistics were computed to better understand the data. The data collected was compiled and edited to check for logical inconsistencies. The data was then coded according to the responses using python. Relationships between responses was assessed and presented using tables and graphs and analysis was done using excel. Regression and Correlation analysis was applied in this study to reveal relationships among variables in the findings from the data

CHAPTER THREE
DATA ANALYSIS, RESULTS AND DISCUSSION

3.1 Introduction

This chapter presents analysis and findings of the study as set out in the research methodology. The results were presented on the correlations of crime with dependent variables like weather, education, unemployment and more other social or environmental conditions that contributed to specific criminal acts. The study objectives were to cross it with weather and demographic (census) data or other sources and see what crimes are affected by weather, season, regional income, neighborhood, population density, unemployment, taxes, home values, etc. and to determine the relationship between crime and other factors directly or indirectly. The study is based on the data that has been collected from National Crime Records Bureau(NCRB), Govt of India. The chapter covers the demographic information, and the findings based on the objectives.

3.2 Background information

The study initially sought to ascertain the general information on the dataset involved in the study with regards to the year of study, age, and gender. The demographic information obtained from the dataset helps to find suitability in answering the questions on the correlations of crime. We have taken the dataset **28_Trial_of_violent_crimes_by_courts** to obtain basic information necessary for the study. The study findings are illustrated in Table 3.1.

Table 3.1 Distribution of the crimes by year of study in India

Year	Sum of Crimes_by_Courts_By_Confession1	Sum of Crimes_by_Courts_Total	Sum of Crimes_by_Courts_By_trial
2001	5741	297405	291664
2002	7712	318015	310303
2003	2966	305832	302866
2004	2923	308312	305389
2005	3988	306067	302079
2006	4326	312948	308622
2007	3307	292086	288779
2008	4502	290659	286157
2009	4518	258850	254332
2010	4335	299892	295557
Grand Total	**44318**	**2990066**	**2945748**

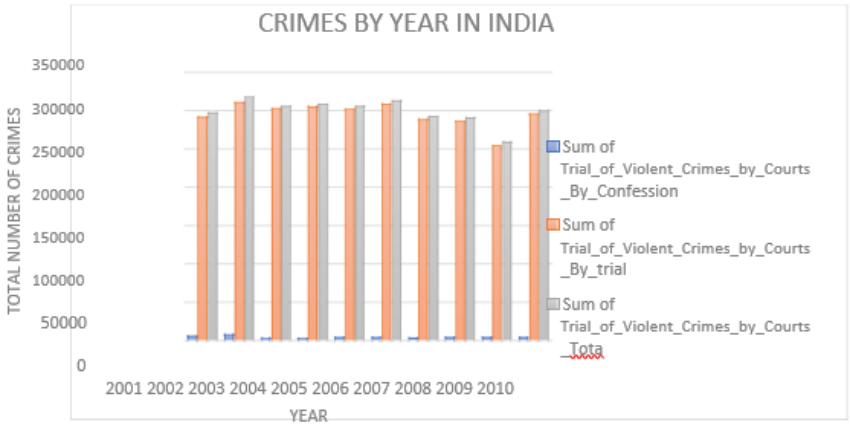
As shown in table 3.1, the study sample was representative of all the years of crimes happened in the country with a total of 2990066 crimes recorded in the first 10 years of 21st century

which includes crimes of murder, Rape, Attempt to murder, Robbery etc. and among them crimes confessed are 44318 and in trail are 2945748.

Let us visualize more on the data set and get a clear understanding on crime and its correlates by investigating more and further. When the data is visualized and a graph plotted between total number of crimes in India divided by years, we can see that year 2002 holds the highest record of trail of violent crimes by court and 2009 takes last spot in number of crimes reported. and one of the important visualization we could find is almost 7 years in this country total of crimes are recorded with a total of above 3 lakhs and from the year 2007 the crimes reported in court started to decrease gradually till 2009 and again it touched the 3 lakhs figure mark.

As population shows a steady increase from 2001 and crime rate in India is at most maintaining constant mark and shows a decrease in 2006 we can say that India is moving forward in protecting the interests of citizenship and their lifestyle more secured.

3.1 Plot of distribution of the crimes by year of study in India



Among the count of total crimes committed by confession, when the data is sorted with subcategory of crimes the study findings are illustrated in above table. Factors including poverty, alcohol and drug abuse can be connected to why people break the law. Some are at risk of offending because of their circumstances. Some are at greater risk of becoming offenders because of the circumstances into which they are born. Crime in India can be committed by various means from murder to dowry, robbery, kidnapping etc.

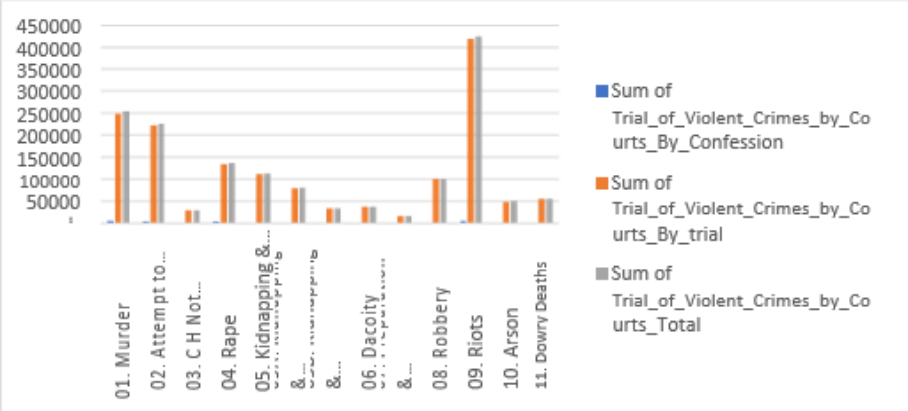
Table 3.2 Distribution of the crimes by categories of study in India from 2001-2010

Crime	Sum of Crimes by Courts By Confession	Sum of Crimes by Courts By_trial	Sum of Crimes by Courts Total
01. Murder	5080	248291	253371
02. Attempt to Murder	2827	221976	224803
03. C H Not Amounting to Murder	253	28545	28798
04. Rape	2938	133400	136338
05. Kidnapping & Abduction	1728	111078	112806
05A. Kidnapping & Abduction of Women & Girls	1250	77854	79104
05B. Kidnapping & Abduction of Others	478	33224	33702
06. Dacoity	421	37764	38185
07. Preparation & Assembly for Dacoity	127	14862	14989
08. Robbery	1238	99341	100579
09. Riots	5612	418702	424314
10. Arson	642	48292	48934
11. Dowry Deaths	429	55084	55513
12. Total Trials (Sum of 1-11 Above)	21295	1417335	1438630
Grand Total	**44318**	**2945748**	**2990066**

Source: National Crime Records Bureau(NCRB)

This table 3.2 shows that from the year 2001 to 2010, among the total number of cases by court and total crimes are categorized in twelve.

Plot 3.2 Distribution of the crimes by category of study in India from 2001-2010



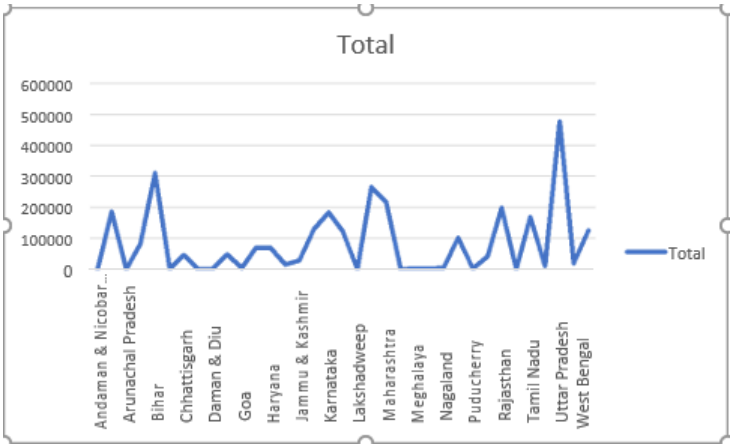
In a developing country like India, taking into concern the categories of crimes sorting them in an order of top 3, by visualizing, most number of cases in a total are reported with riots. A violent disturbance of peace by a crowd who are unsatisfied with government are more followed by murders and attempt to murder taking next two positions.

3.3 Safety in India

Distribution of Crime by states

In India, crime and location are directly related. According to the statistics in the below data from plot we can visualize that Uttar Pradesh is the most **dangerous** state in India. The state reported highest number of violent crimes in 2010, accounting for about 40 lakh crimes accounting almost 12% of country's population.

Plot 3.3 Distribution of the crimes by states of study in India from 2001-2010



This plot states that Uttar Pradesh takes the top spot in total number of crimes followed by Bihar in second and Maharashtra in 3rd.

Note:

The following statistics come from the National Crime Records Bureau, and consist of crime rates per 100,000 of the population**.**

3.4 Statistics on sexual Violence in India

3.4.1 Rape in India

Considering that crime statistics, especially those on sexual violence, tend to suffer from under-reporting, here is a look at the data on sexual violence in India. In India, on every day basis there are more such incidents being reported such as ones in Maharashtra. These barbaric incidents at various parts of the country have once again put the spotlight on India's poor track record in protecting its women. Many rapes go unreported in various countries including India. In India, consensual sex given on the false promise of marriage constitutes rape. The willingness to report the rape has increased in recent years, after several incidents of rape received widespread media attention and triggered public protest.

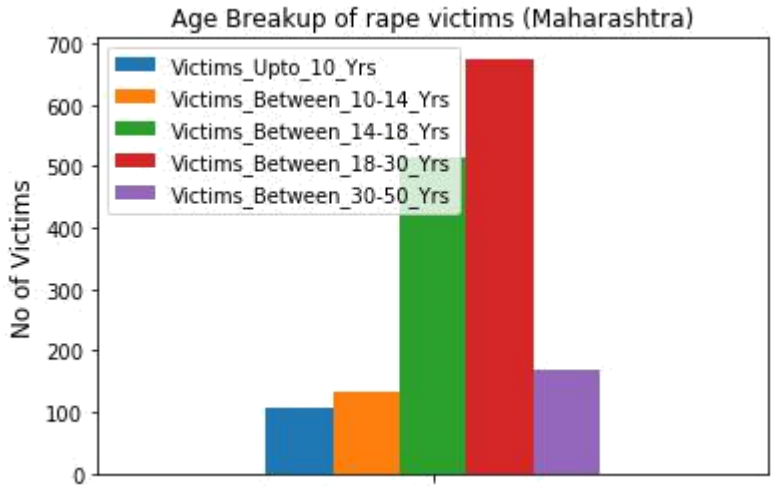
3.4.2 Rape of Minors

Estimates of unreported rapes

Most rapes go unreported because the rape victims fear retaliation and humiliation, both in India and throughout the world. Indian parliamentarians have stated that the rape problem in India is being underestimated because many cases are not reported, even though more victims

are increasingly coming out and reporting rape and sexual assaults. Keeping this in mind, we take a closer look at the data from the data table Victims of Rape for the state of Maharashtra

Plot 3.4 Age Breakup of rape victims

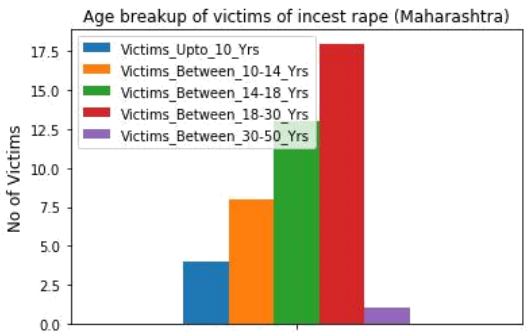


While it is difficult to generalize results for the entirety of India, Maharashtra is taken for the case of analyzing and graph is plotted for the victims of incest rape, we can see that victims are of younger age. The victims are almost double in number for the age group 10-14 age and few in 30-50 age group.

3.4.2.1 Rape victims in India known to offenders

One of the biggest misconceptions around rape is the "other-in" of both the criminal and the victim — that a "certain" type of man rapes and a "certain" type of woman gets raped. The overwhelming complicity of perpetrators in familial positions of power, or those who are known to victims, is grossly understated.

Plot 3.5 Age breakup of victims of incest rape(Maharashtra)



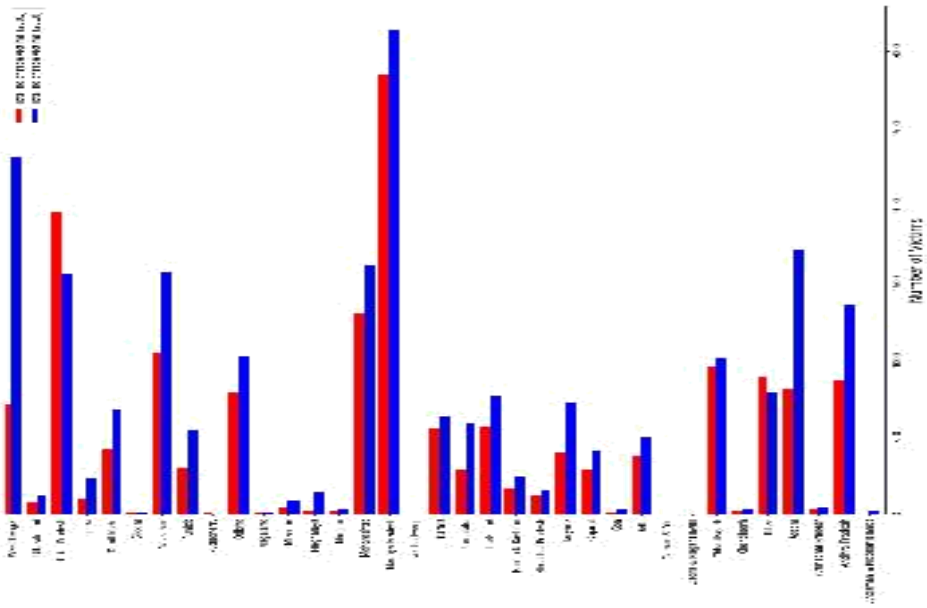
The analysis clearly dispels the myth that stranger rape accounts for most of cases are of the age 18-30. These offenders might be Immediate Family/Close Family/Relatives or known persons due to other reasons

The result shows other rape cases are much higher in age group 18-30 years as compared to their counterpart. The results also show in age group 14-18 years have greatly contributed in other rape cases after 2001to 2010 as compared to age group up to 10 years, 10-14 years and 30-35 years. In age group, 50 years and above have no any incensement in term of changing the status of rape

3.4.2.2 Results of rape victims in total

The total number of rape victims in year 2010 with 2001:

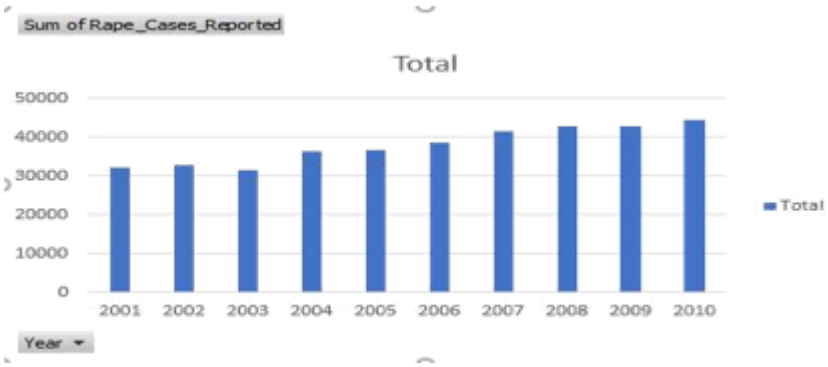
Plot 3.6 Total number of rape victims from 2001-2010



3.4.3 Offenders relation to rape victim

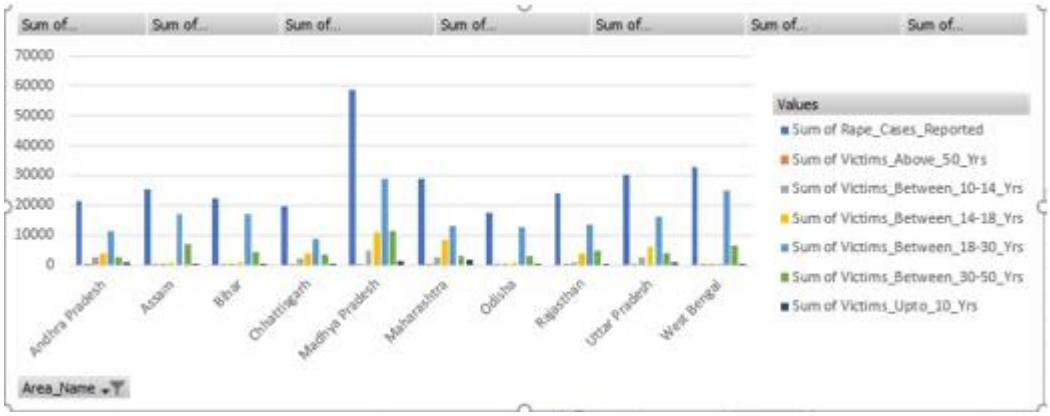
In country like India, a total of 380016 rapes are committed during the period of 2001-2010. When a graph plotted during each period shows that rape victims are there by increasing every year with increase in population of the country.

Plot 3.7 Total of rape cases reported in year



Of all the years from 2001, Madya Pradesh has more rape victims and from the age group between 18-30 years. From this graph we could see that of majority of rape victims belongs to the age group 18-30 years in all the top 10 states which has the maximum count of rapes reported.

Plot 3.8 Comparison of Rape cases in age group



Plot 3.9 Comparison – Victims of Incest Rape -Other Rape

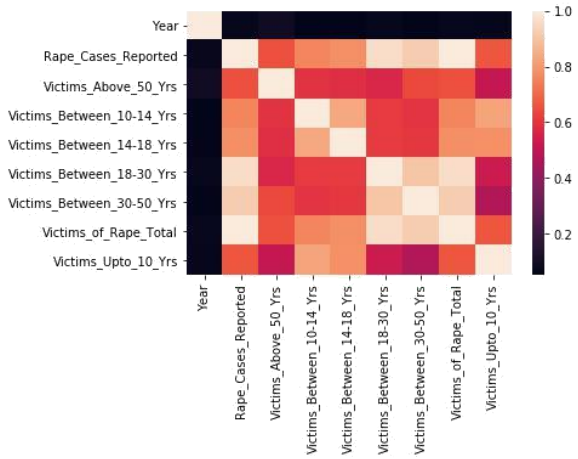
Of all the rape victims from 2001 to 2010, there are also few rape cases reported which are of incest type. This table shows that a total of 239 cases reported which are of the type incest among the 5229 rape cases reported.

Table 3.3 Analysis of Rape Victims

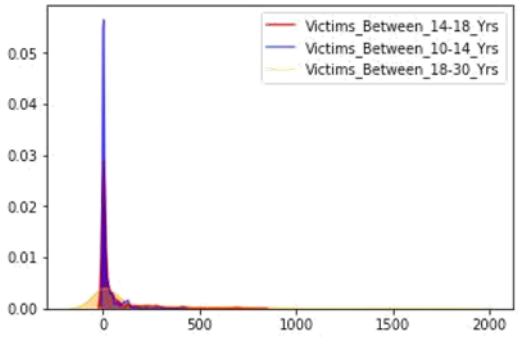
Year	Total Rape Victims	Victims of Incest Rape	Victims of Other Rape	Grand Total
2001	530	24	506	1060
2002	411	15	396	822
2003	389	23	366	778
2004	532	12	520	1064
2005	557	36	521	1114
2006	512	24	488	1024
2007	617	28	589	1234
2008	639	23	616	1278
2009	710	24	686	1420
2010	571	30	541	1142
Grand Total	**5468**	**239**	**5229**	**10936**

From the above table we can see that from 2001 to 2010, total number of rape victims are increasing till 2009, and in the year 2010, total number of cases reported decreased to 571 which is a good scenario. And there are also few incest rape victims in all the years. As the population in the country is increasing year to year, increasing rape cases reported states that it is an alarming scenario in which more focus should be kept in securing women in the country.

3.6 Plotting a correlation between all age groups with year:



Plot 3.7 Rape Victims of ages



From this graph we can see that victims are more between the age groups of 18-30. There are also child victims under the category of age 14-18. This states that India is still to be developed in thought process and at circumstances these culprits should be punished. Research also shows stigmatization and blame of rape victims to be widespread in many societies, culture affecting the victim's mental and physical health. Victim's needs sympathy; claim assistance, temporary relief from other role responsibilities, legal recourse and many other advantages, cannot be exercised if survivors do not identify their experience such as rape.

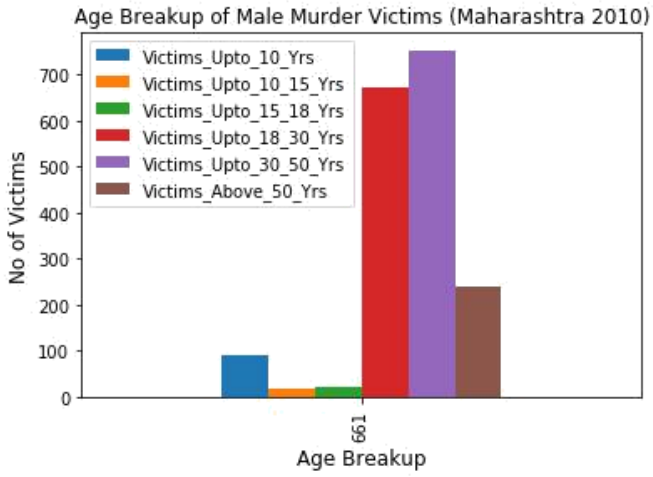
3.5 Crime against Human Body

Now let us have a look on crime which India tops in murder count across the world by an article published in 2008. According to that article, India has earned the dubious distinction of being the country where maximum number of murders takes place in the world, three times more than its neighbor Pakistan and double the figures in United States. India records the second highest number of murders in the world every year. With a youth bulge, large unemployed male population, chaotic urbanization and increasing drug abuse, India is a ticking time-bomb of everyday violence. To visualize the data, let us take the state Maharashtra for the year 2010 and start visualizing it for male victims categorized with age:

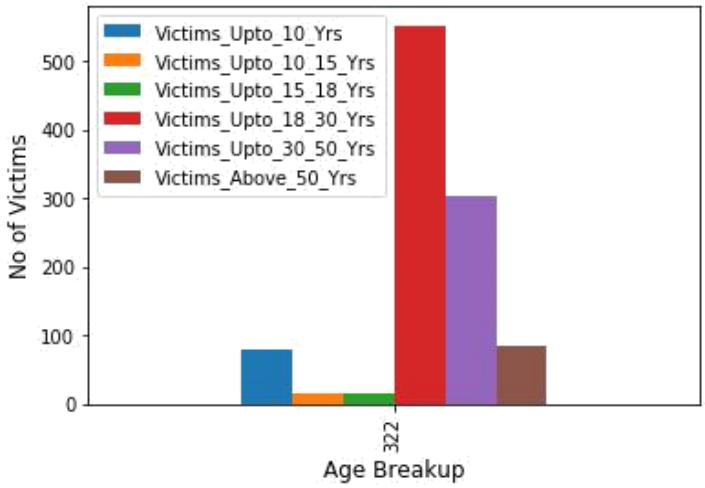
Plot 3.8 Age Breakup of Male Murder Victims

From the results generated using excel we can clearly say that, age group between 30-50 are more in number among males followed by the age group 18-30 in second spot. When the same

is taken all over the country it clearly shows that most of the male victims are of the age group 18-30.



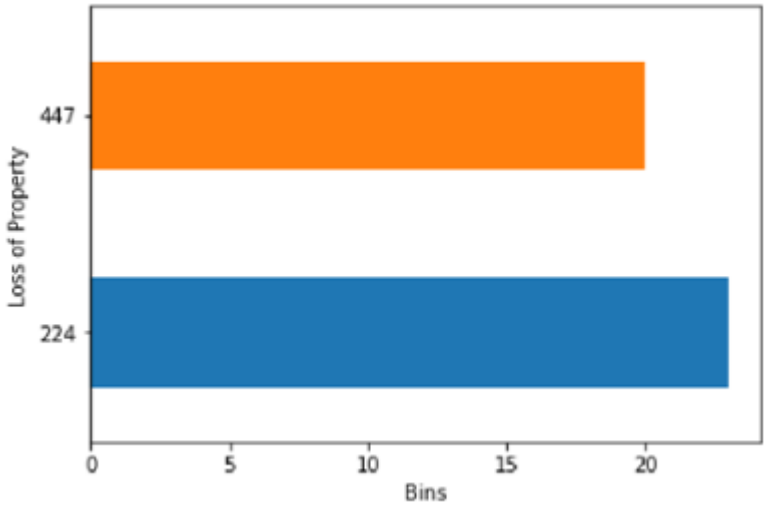
Plot 3.9 Age Breakup of Male Murder Victims



3.6 Crime against Property

A noticeable pattern could be witnessed in crime against property. The crime related to property has decreased from 1973. The rates have seen a downfall. Dacoit was 10627 in the year 1973 and 4579 in the year 2007. Though there was an initial rise but after few years, the rate of dacoit started to fall. This shows an improvement in reducing crime in the society.

Plot 3.10 Loss of Property



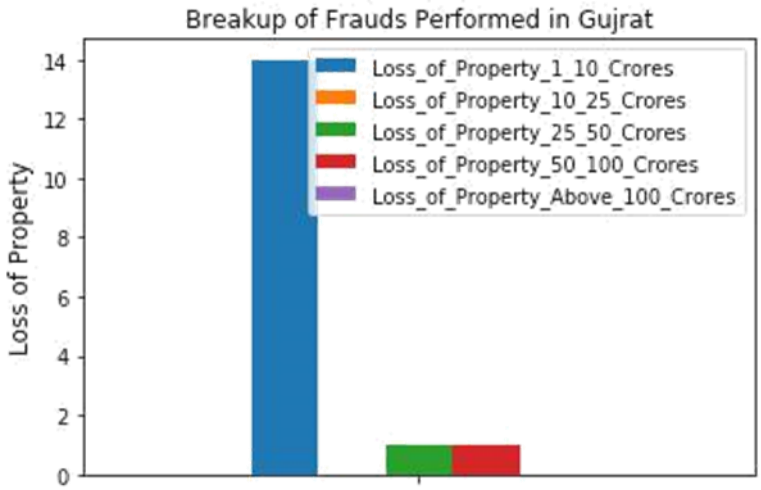
Loss of Property in India can be further analyzed into two categories which among them is the first property below 10 crores and property above that. Let us take three states and analyze the property stolen in terms of money in Gujarat, Delhi and Andhra Pradesh.

Let us consider 3 cities and analyze each of them individually:

1.Gujarat

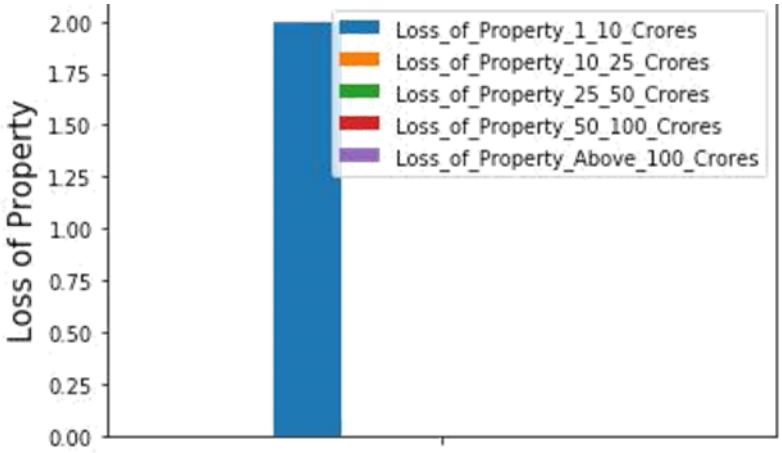
One of the main reasons of property crime in India is unemployment. Gujarat being one of the state which literacy rate is high despite that loss of property cases is high in this state. More number of property cases are recorded for loss against property from 1-10 crore rupees.

Plot 3.11 Breakup of Frauds Performed in Gujarat



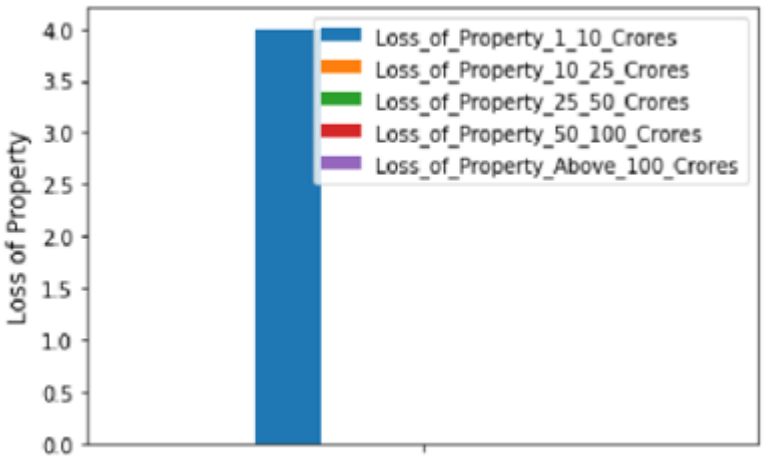
2.Delhi

Plot 3.12 Breakup of Frauds Performed in Delhi



3.Andhra Pradesh

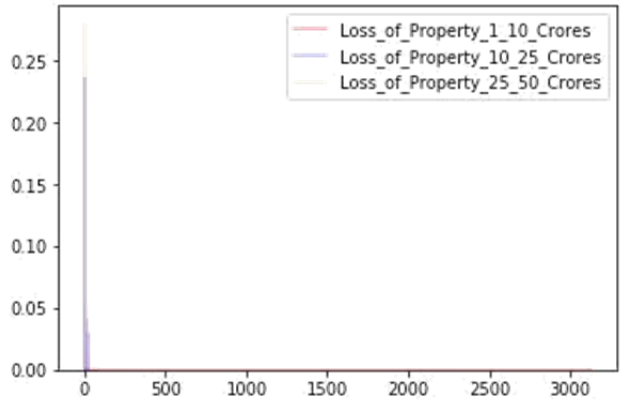
Plot 3.13 Breakup of Frauds Performed in Andhra Pradesh



From the results which are visualized in graph we can clearly see that in country most of the robbery cases under loss of property are at a maximum of the range below 1-10 crores.

There might be many reasons behind that as property value which is lower has high chances of theft happening in the country when compared to property with a high value. Now days, due to increase in security measures and CC cameras which are also installed in majority of the shopping malls, robbery violence is happening in places where development is low compared to cities and the main cause for robbery is due to unemployment.

Plot 3.20 Breakup of Frauds Performed in India



3.7 Child trafficking in India:

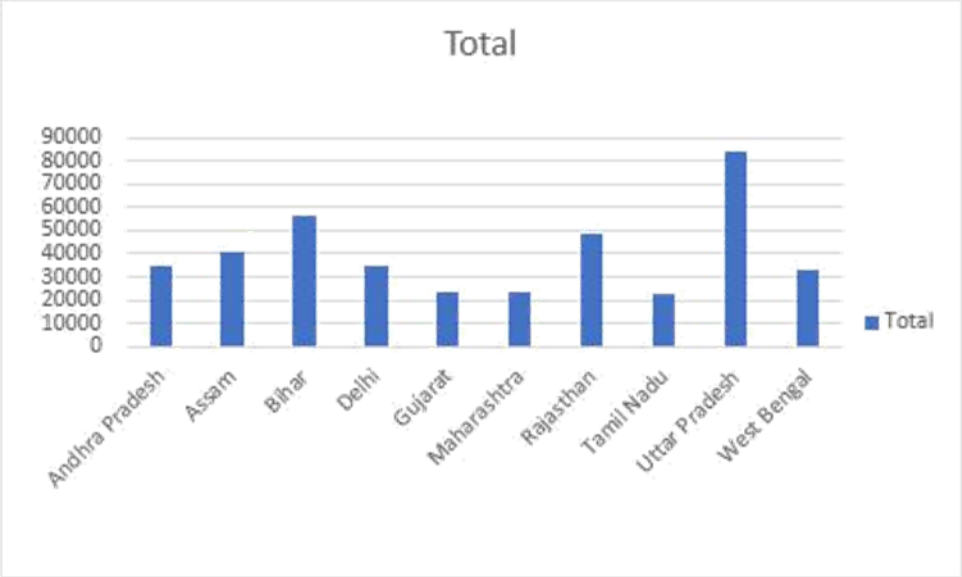
India has a high volume of Child trafficking. There have been many cases where children just disappear overnight, as many as one every eight minutes, according to the National Crime Records Bureau. In some cases, children are taken from their homes to be bought and sold in the market. In other cases, children are tricked into the hands of traffickers by being presented an opportunity for a job, when, upon arrival they become enslaved. There are many different causes that lead to child trafficking, with the primary reason being poverty and weak law enforcement. The traffickers that take advantage of children can be from another area in India, or could even know the child personally.

Major reason people being kidnapped in each state

Calculating from the year 2001-2010, total number of cases reported in the country are more than 5 lakhs. These cases include Adoption, Begging, Prostitution, selling body parts, slavery and other unlawful activities.

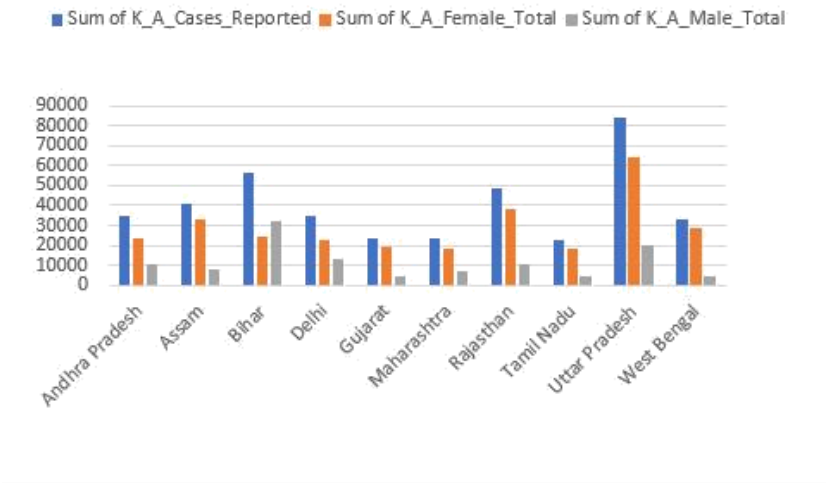
Plot 3.21 Total number of missing cases in the country

From this graph, we can clearly visualize that Uttar Pradesh holds the top spot in specific purpose of kidnapping and abduction happened in the country among the states in country when filtered top 10 positions among the states available.



Now let us look of females and males kidnapped in these states among the total number of kidnapped

Plot 3.22 Analysis of missing cases in the country



From the graph we can see that in every state during the period of 2001 to 2010, females are kidnapped more when compared to males except Bihar where males are kidnapped more compared to females.

Among the total number of cases reported during the period 2001-2010, of 401938 cases reported, 291898 are females and 114660 are males. This is approximately 72% of females are kidnapped and abduction among the total number of kidnapping cases registered.

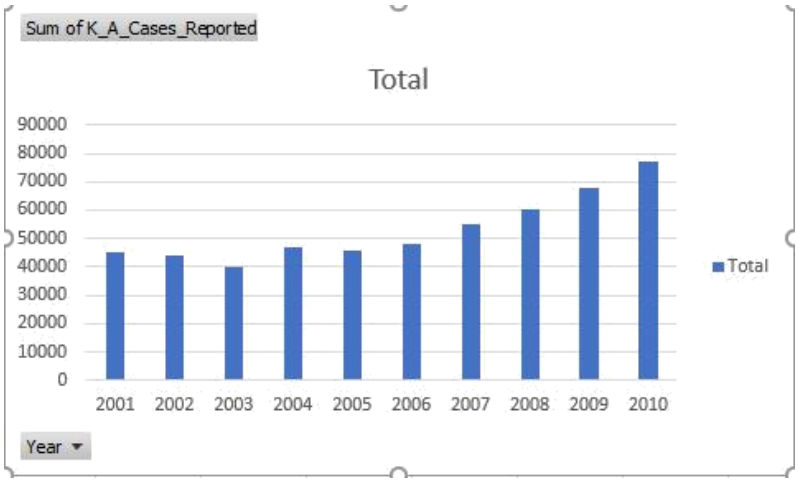
From the below table we can notice that, Assam among every 10-people kidnapped 8 are women and the same happened with Gujarat and West Bengal.

Table 3.4 Analysis of missing cases in the country

States	Sum of K_A_Cases_Reported	Sum of K_A_Female_Total	Sum of K_A_Male_Total	% of females kidnapped and abducti
Andhra Pradesh	34430	23720	10854	68.89340691
Assam	40726	32890	7836	80.75922015
Bihar	56290	24270	32090	43.1160064
Delhi	34692	23084	13350	66.53983627
Gujarat	23824	19464	4554	81.69912693
Maharashtra	23698	18754	6716	79.13747996
Rajasthan	48560	38448	10178	79.17627677
Tamil Nadu	22748	18166	4862	79.8575699
Uttar Pradesh	83776	63984	19920	76.37509549
West Bengal	33194	29118	4300	87.72067241
Grand Total	**401938**	**291898**	**114660**	72.62264329

Here abduction in the sense, the action of forcibly taking someone away against their will. Let us look of total number of kidnapped cases with year

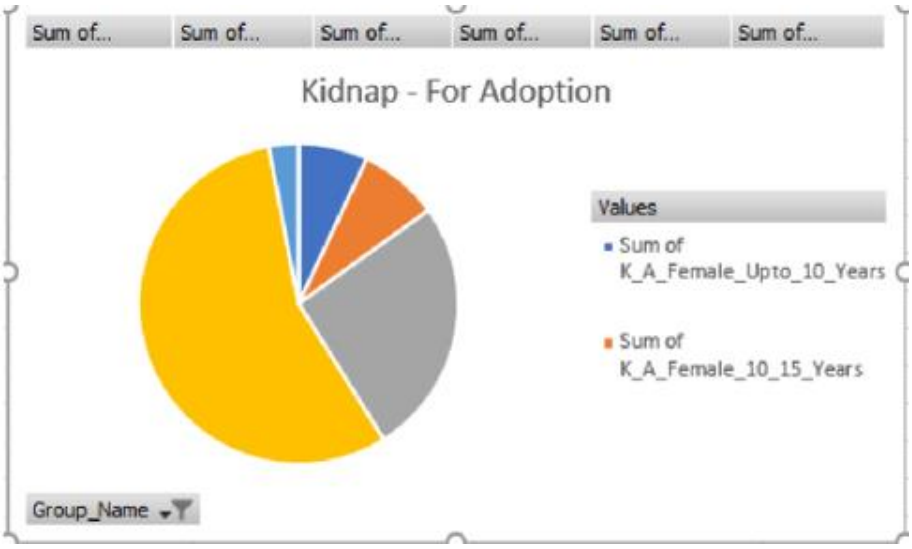
Plot 3.21 Analysis of cases reported as missing in the country from 2001



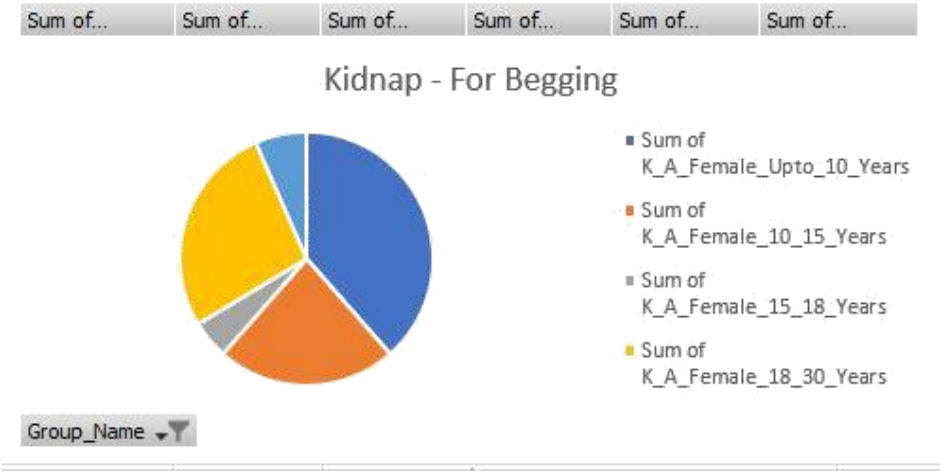
From this graph we can see that with an increase in year by 1, total number of cases are increasing each year which states that it is directly proportional to total number of cases.

It states that as population of the country like India is increasing every year and cases which is not a good sign, when keeping the population constant, number of cases should decrease but the scenario is completely different.

Plot 3.22 Kidnap – For Adoption



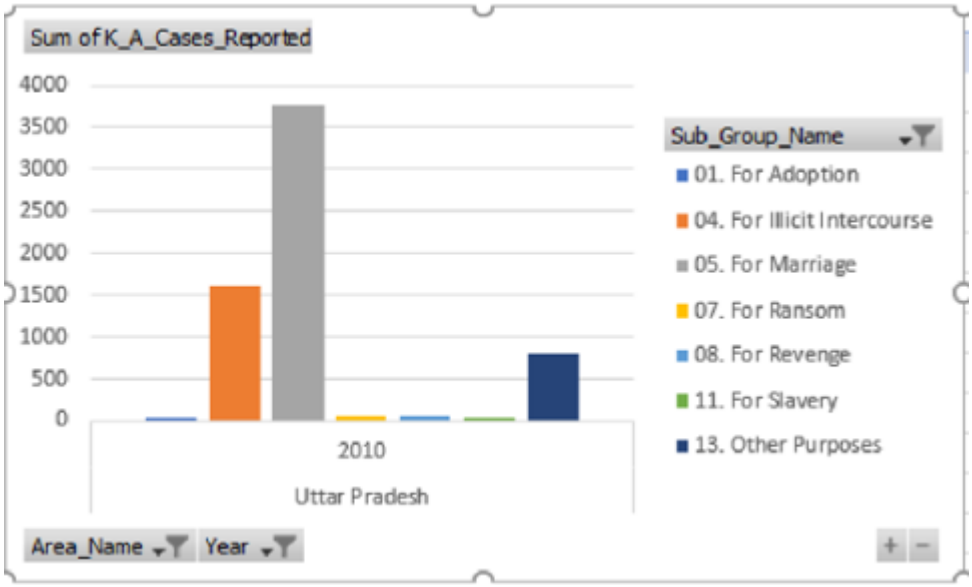
Plot 3.23 Kidnap – For Begging



Among the total number of kidnapping cases reported for the purposes of begging, majority are of the age group below 10 years and 10-15 years age group children are targeted next.

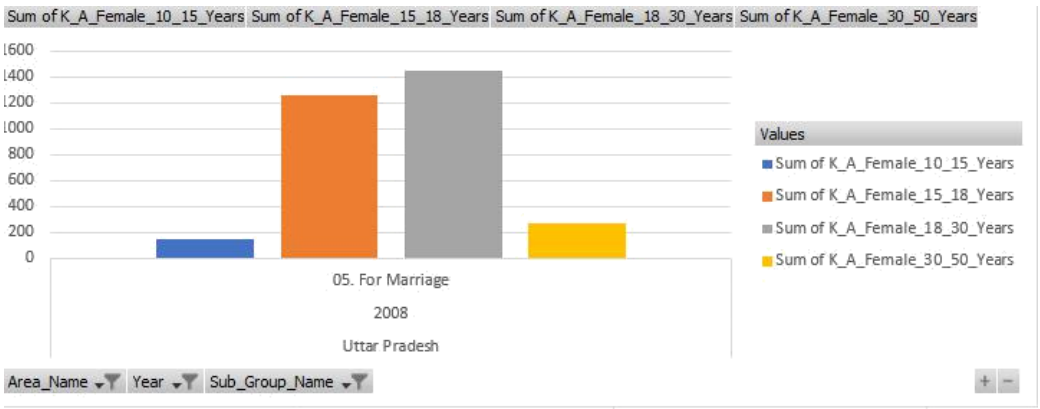
Let's take Uttar Pradesh which takes top spot in total number of kidnapping cases for analyzing the major reason for the kidnapping.

Plot 3.24 Kidnap – Uttar Pradesh



In Uttar Pradesh, more number of women are kidnapped for marriage in the year 2010. This is happening every year from 2001 of the age group 15-30 years.

Plot 3.25 Kidnap – For Marriage



Majority of women of Andhra Pradesh and Bihar of the age group 18-30 years are kidnapped for prostitution.

Plot 3.26 Comparison – Prostitution AP- Bihar

From the plot above we can clearly visualize that in Andhra Pradesh prostitution is more than Bihar in which literacy rate is low compared to Andhra Pradesh. Even many children of age of 15-18 which are not into adults are brought into prostitution. Exploring through the causes of prostitution, the first and the foremost factor is Poverty. Poverty is one of the main causes which brings helpless woman to the doors of prostitution. A woman distressed economically,

often ill-treated by parents or seduced by boyfriend who later turns out to be a pimp or procurer, and lastly uneducated or with a very low education level seldom finds any other avenues to feed herself other than prostitution.

Safest state for foreigners

With safety against women becoming rampant in the country, the safety of women and property has become a matter of grave concern. In India a total of 7517 crore rupees was stolen under cheating and 1499 crore under breach of trust. From above analysis, considering the safety of women, taking the variables as property, protection, total number of cheating cases registered, we can say that Goa is one of the safest place among the metro politician cities taking the population of 10 lakh and above as criteria.

Table 3.4 Analysis of property loss in the country with category

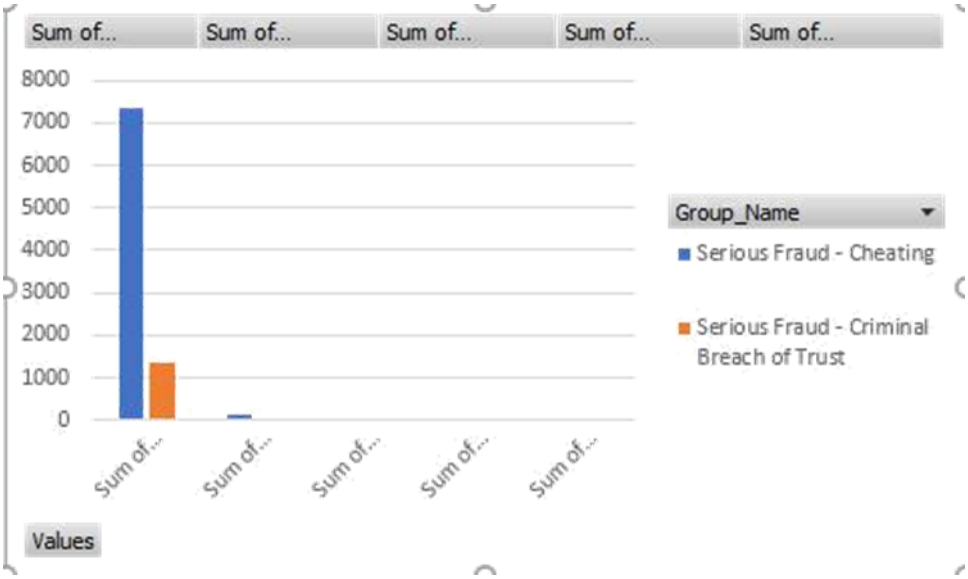
	Column Labels		
Values	Serious Fraud - Cheating	Serious Fraud - Criminal Breach of Trust	Grand Total
Sum of Loss_of_Property_1_10_Crores	7325	1364	8689
Sum of Loss_of_Property_10_25_Crores	113	61	174
Sum of Loss_of_Property_25_50_Crores	61	30	91
Sum of Loss_of_Property_50_100_Crores	9	31	40
Sum of Loss_of_Property_Above_100_Crores	9	13	22
	7517	1499	

Now let us analyze the category of cheating where a total of 7325 cases are reported in our country stating that loss of property is below 10 crore rupees. Loss of property under 10-25 crore is reported that a total of 113 cases have been registered among the total cheating cases reported. It also states that major fraud is cheating in India and the amount which the fraud happened is of below 10 crore which is majority in all cases.

There are also few cases registered with a total of 1364 with the name of trust and cheating and property loss in majority is of 1-10 crore rupees. The graph shown below states how cheating cases are dominated in country.

Analyzing further and let us have a look on plot below which states clearly that cheating and criminal breach of trust both are more in India but cheating is ¾ of total cases reported.

Plot 3.28 Comparison of Serious Fraud- Cheating and Criminal Breach of Trust



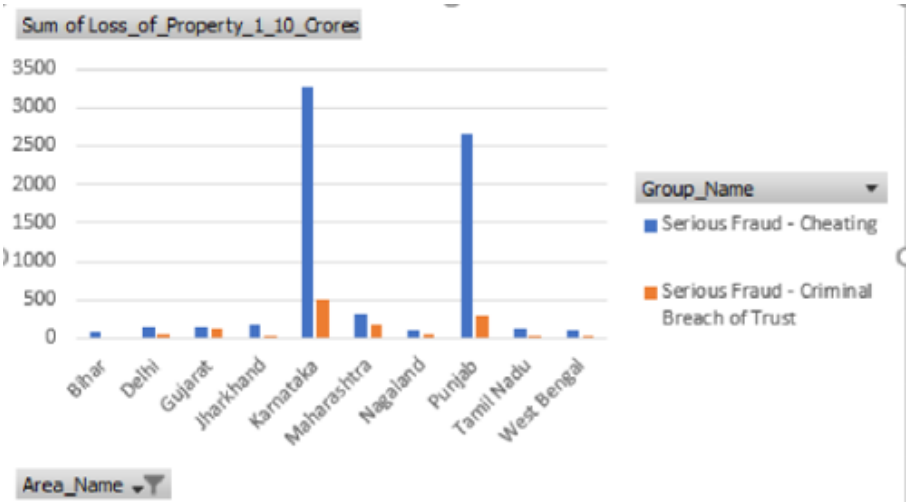
The following states hold the total number of cheating cases recorded during the 10-year period from 2001-2010

Table 3.5 Analysis of Serious Fraud- Property Loss in States

Sum of Loss_of_Property_1_10_Crores	Column Labels		
Row Labels	Serious Fraud - Cheating	Serious Fraud - Criminal Breach of Trust	Grand Total
Andhra Pradesh	25	14	39
Bihar	73	0	73
Chandigarh	11	4	15
Chhattisgarh	16	10	26
Delhi	141	59	200
Goa	17	4	21
Gujarat	164	122	286
Haryana	13	0	13
Jammu & Kashmir	5	12	17
Jharkhand	182	5	187
Karnataka	3264	500	3764
Kerala	21	13	34
Madhya Pradesh	10	18	28
Maharashtra	307	178	485
Mizoram	37	24	61
Nagaland	101	52	153
Punjab	2644	293	2937
Sikkim	56	11	67
Tamil Nadu	131	18	149
West Bengal	95	7	102
Grand Total	**7313**	**1344**	**8657**

Among them Karnataka and Punjab hold the top two spots in both categories Serious Fraud - Cheating and Serious Fraud – Criminal Breach of Trust and the property holds at an average between 0-10 crore rupees. Capital city of India New Delhi holds a total of 141 cases with an average of 15 cases per year and Goa which is also one of the tourist destination of India has the total of 14 cases and can also be treated as one of the safest place in India.

Plot 3.28 Comparison of Serious Fraud- Property Loss in States



By looking at the data, we can say that the most common types of crime are theft, armed robbery and rapes. Agree on all fares and payments in advance and being told that you can pay "as you like" is a bad sign. While travelling in the transport and in general never accept any food or drinks as they might be spiked. India is the 106th safest country in the world, based on the safest and most dangerous countries ranking.

These are the states where serious fraud is low reported and safer for foreigners.

Plot 3.29 Comparison of Serious Fraud- Cases Registered in total

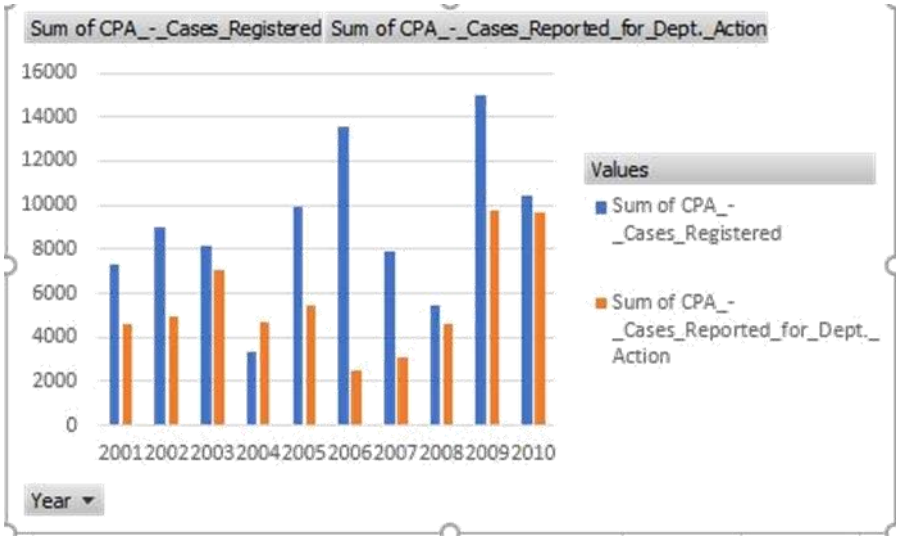
Sum of Loss_of_Property_1_10_Crores	Column Labels		
Row Labels	Serious Fraud - Cheating	Serious Fraud - Criminal Breach of Trust	Grand Total
Andaman & Nicobar Islands		1	1
Arunachal Pradesh	0	0	0
Assam	0	0	0
Daman & Diu	1	0	1
Himachal Pradesh	1	1	2
Manipur	1	0	1
Odisha	0	0	0
Puducherry	1	1	2
Tripura	0	0	0
Uttarakhand		2	2
Grand Total	**4**	**5**	**9**

Note: This report generated is taken consideration of theft in crore rupees

Analysis-Complaints against police

More number of police cases are registered in the year 2009 followed by 2006. The total number of police cases registered against their officials is lowest in the year 2004. There is a gradual decrease the number of police cases registered in the year 2010 but the cases registered for department action is same in both years.

Plot 3.30 Comparison of Cases Registered against police in total



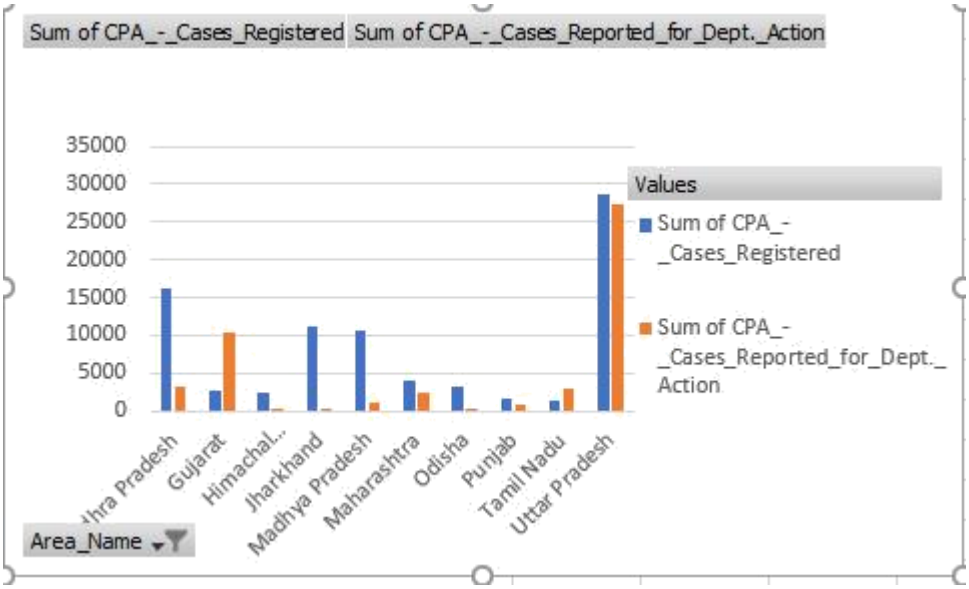
Among the total number of states, in this country let us analyze data taking the criteria of cases against police on top 10 by cases registered, Uttar Pradesh takes top position in the crimes against police.

Table 3.6 Comparison of Cases Registered against police in states

Row Labels	Sum of CPA_-_Cases_Registered	Sum of CPA_-_Cases_Reported_for_Dept._Action
Andhra Pradesh	16327	3279
Gujarat	2749	10490
Himachal Pradesh	2544	17
Jharkhand	11294	2
Madhya Pradesh	10747	1047
Maharashtra	4001	2406
Odisha	3135	249
Punjab	1523	873
Tamil Nadu	1328	2912
Uttar Pradesh	28622	27315
Grand Total	**82270**	**48590**

Among the total number of cases registered, 48590 are taken for action by the department. Uttar Pradesh has more number of cases against police. When Gujarat has a different scenario in which only 2749 cases are registered and more than 10000 cases are in pending for department action.

Plot 3.31 Comparison of Cases Registered against police in total



Majorly complaints against police are registered only when he or she is not helpful and harmed common man with no reason by officials, a complaint can be filed against him. In such a case he may be found guilty for dereliction of duty.

Cases against women:

By visualization of rape cases committed against women, we can see that Madya Pradesh tops in rape cases acquitted or discharged having a total of 19543 and Maharashtra lists top 2 with 8956 cases. This also states that these top 10 states are not much safer among the country for women among the total number of states.

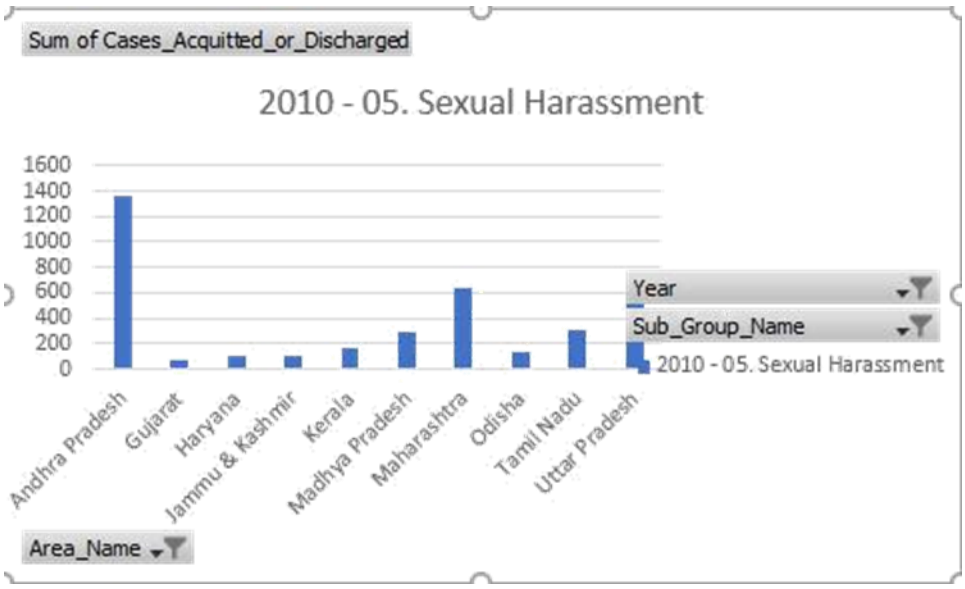
Table 3.7 List of Cases Registered against rape in states

Sexual Harassment:

Sexual harassment is an unwanted intrusion of a sexual nature in the personal space of an individual. Although a large proportion of the complaints are by women, sexual harassment is not limited to women alone

For the year 2010, Andhra Pradesh holds the highest number of sexual harassment cases.

Plot 3.31 Sexual Harassment in states



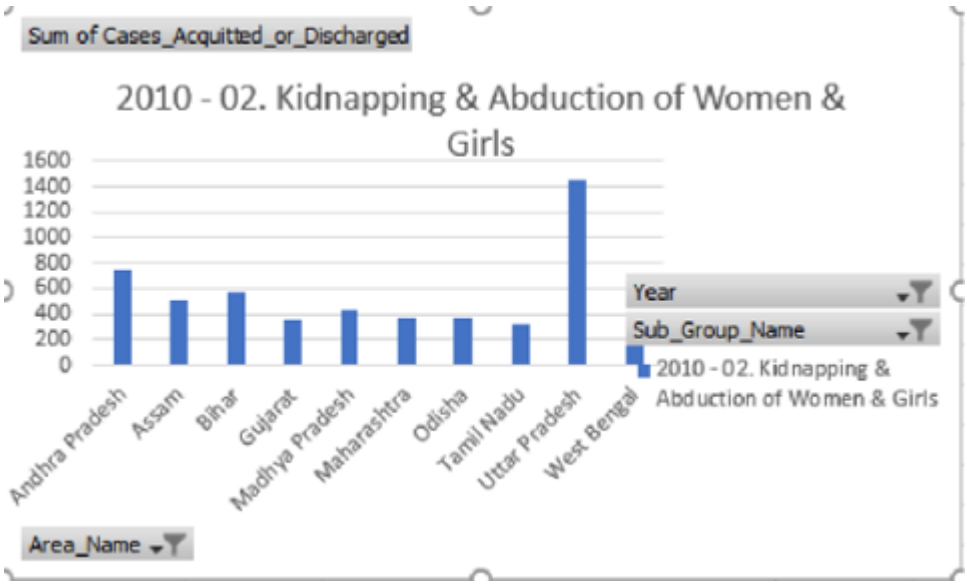
According to the statistics of year 2010, Andhra Pradesh holds the highest record of cruelty by husband and Relatives cases and Uttar Pradesh, Maharashtra takes the second spot in sexual harassment cases.

Kidnapping and Abduction of Women and Girls:

The rise in child abductions appears to be a countrywide phenomenon, with all states witnessing an increase in such crimes. The states that fare the worst in terms of the rate of child abductions include Uttar Pradesh, Andhra Pradesh and Assam which have witnessed lynching's related to child-lifting rumors as well as Delhi and Goa.

Kidnapping and abduction of women and girls is more in Uttar Pradesh

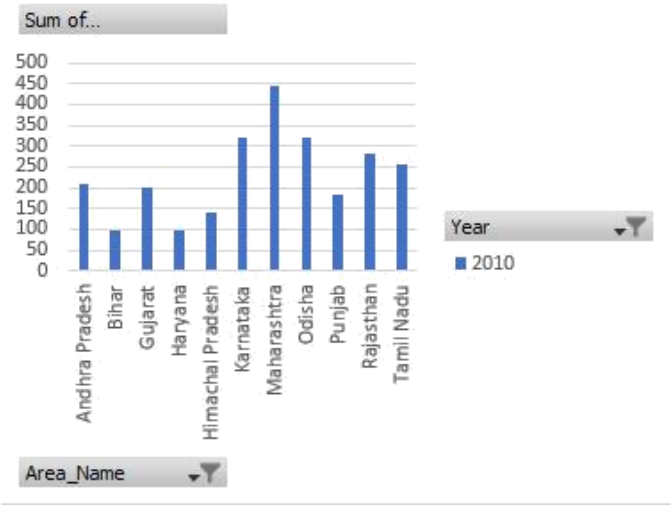
Plot 3.32 Kidnapping & Abduction of Women in states



Corruption in India:

No of anti-corruption cases registered during the year 2010 where charge sheet has been held are more in Maharashtra, Karnataka, Rajasthan and Tamil Nadu.

Plot 3.33 Corruption cases in states for 2010



Maharashtra has the highest record of highest cases proved against corruption among the list of top 10 investigated proving wrong.

PART-2

3.8 Inferential Statistics:

3.8.1 MURDER VICTIMS BY AGE GROUP:

In determining the crimes happened when compared from year 2001 to 2010 with age group of victims, the study conducted a regression analysis to determine the nature of relationship between the variables.

Sometimes linear regression can be used with relationships which are not inherently linear, but can be made to be linear after a transformation. We consider the following exponential model:

$$y = \alpha e^{\beta x}$$

Where;

Y= crime rate

X= age group categories

ε= error term

β=coefficient

α= constant

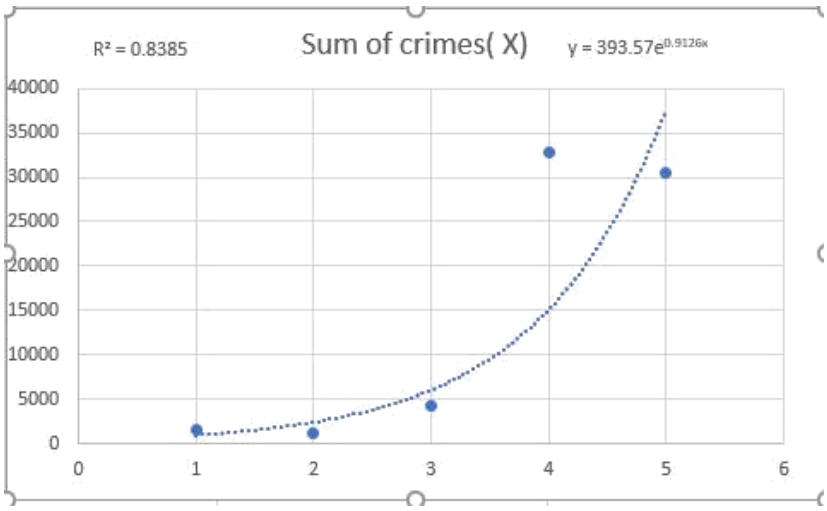
TABLE:

Table: Relation between victims and crime with ages

Victims Category	Sum of crimes(X)
Sum of Victims_Upto_10_Yrs	1680
Sum of Victims_Upto_10_15_Yrs	1174
Sum of Victims_Upto_15_18_Yrs	4218
Sum of Victims_Upto_18_30_Yrs	32824
Sum of Victims_Upto_30_50_Yrs	30454

GRAPH:

Plot: Relation between victims and crime with ages



This graph is plotted by taking Sum of crimes happening on Y-axis and Victims into 5 categories (1 to 5) on X-axis.

Example:

Sum of victims up to 10_yrs is categorized as 1 and so on.

Taking the natural log of both sides of the equation, we have the following equivalent equation:

$$\ln y = \ln \alpha + \beta x$$

This equation has the form of a linear regression model (where I have added an error term ε):

$$y' = \alpha' + \beta x + \varepsilon$$

Observation: Since $\alpha e\beta^{(x+1)} = \alpha e^{\beta x} \cdot e^{\beta}$, we note that an increase in x of 1-unit results in y being multiplied by e^{β}.

Observation: A model of the form ln y = $\beta x + \delta$ is referred to as a **log-level regression** model. Clearly any such model can be expressed as an exponential regression model of form y = $\alpha e^{\beta x}$ by setting $\alpha = e^{\delta}$

ORIGINAL DATA			LOG TRANSFORMED DATA	
Sum of crimes(Y)	X		ln Y	X
1680	1		7.426549072	1
1174	2		7.068172	2
4218	3		8.347116361	3
32824	4		10.39891523	4
30454	5		10.32397263	5

The table on the right side of Figure 1 shows ln y (the natural log of y) instead of y. We now use the Regression data analysis tool to model the relationship between ln y and *x*.
The table in Figure 2 shows that the model is a good fit and the relationship between ln y and *x* is given by

= 5.975 + 0.91 *x

Applying *e* to both sides of the equation yields

The study further applied logistic regression to determine the effect of crime on age group. The researcher conducted a logistic regression analysis so as to test relationship among variable (independent) on the age group. The researcher applied the excel to code, enter and compute the measurements of the logistic regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (crime) that is explained by the independent variable (age group).

Table : Model Summary

Regression Statistics	
Multiple R	0.915685534
R Square	0.838479998
Adjusted R Square	0.784639997
Standard Error	0.731252129
Observations	5

Source: Field data

The independent variable that was studied, explain only 83.8% of the as represented by the R^2. This therefore means that other factors not studied in this research contribute 16.2% of the crime recorded. Therefore, further research should be conducted to investigate the other factors that affect crime (dependent variable).

Table: ANOVA of the Regression

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	8.32764	8.32764	15.57355	0.029014613
Residual	3	1.604189	0.53473		
Total	4	9.931829			

The significance value is 0.029 which is less than 0.05 thus the model is statistically significance in predicting how age group is affects the crime. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 15.575), this shows that the overall model was significant.

Table: Coefficients

	Coefficients	*Standard Error*	*t Stat*
Intercept	5.975267956	0.766943704	7.791012467
X Variable 1	0.912559034	0.231242227	3.946333873

Logistic regression analysis was conducted as to determine the relationship between crime and the one independent variable (age group). As per the excel generated table, regression equation (= 5.975 + 0.91 *x) becomes:

According to the regression equation established, taking all factors into account (age group) constant can't be zero. The data findings analyzed also shows that taking all other independent variables at zero

Observation: Since $\alpha e\beta^{(x+1)} = \alpha e^{\beta x} \cdot e^{\beta}$, we note that an increase in x of 1-unit results in y being multiplied by e^{β}.

393.4681 * e0.91(x+1) =393.4681 * e0.91x * e0.91

a unit increase in crime will lead to increase in multiplication factor 977.57; This infers that age group (18-30) contribute most to the crime. At 5% level of significance and 95% level of confidence, age group was a significant, factor in predicting the crime. To quantify the strength of the relationship between the variables, the study used Karl Pearson's coefficient of correlation. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by r. The Pearson correlation coefficient, r, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases. The data presented before on internet advert ising was computed into

single variables per factor by obtaining the averages of each factor. Pearson's correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed. The Table below indicates the correlation matrix between the age group and crime

	Crime	Age group
Crime	1	
Age group	0.915685534	1

According to the Table 4.15, there is a positive relationship between crime and age group of magnitude 0.9156. The positive relationship indicates that there is a correlation between the crime with age group.

This notwithstanding, all the factors had a significant p-value ($p<0.05$) at 95% confidence level. The significance values for relationship between crime and age group implies that age group was a significant factor on crime.

DISCUSSION OF FINDINGS:

ANALYSIS-2:
CASES ON SUM OF EDUCATED ILLERATES WITH YEAR:

In determining the total number of cases filed against Juveniles with years, the study conducted a multiple regression analysis to determine the nature of relationship between the variables.
The regression model specification was as follows

$Y=\alpha+\beta_1 x + \beta_2 x^2 + \beta_3 x^3 + \text{error}$

Where;

Y= sum of cases filed against juveniles

X= years (1 1 to 10 scales from 2001 to 2010)

β=coefficient

α= constant

The study further applied multiple regressions to determine the total number of cases on educated liberates with year. The researcher conducted a multiple regression analysis to test relationship among variable (independent) on the cases on juveniles. The researcher applied the excel analytics Tool Pak to code, enter and compute the measurements of the multiple regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (total number of liberate cases) that is explained by the independent variable (years).

Plot: Relation between cases filed against juveniles with years

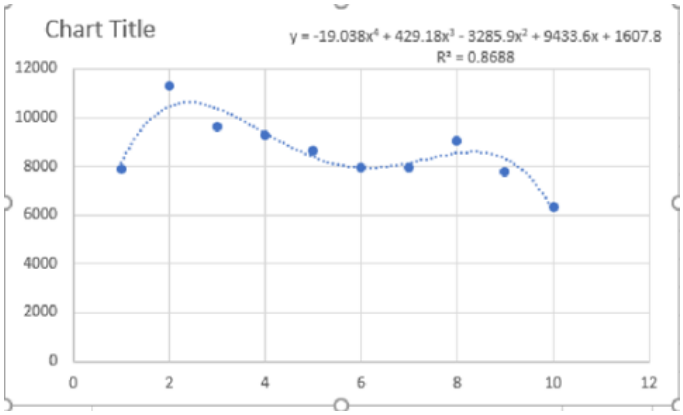


Table: Model Summary

The independent variable that was studied, explain only 91.3% of the cases of juveniles as represented by the R^2. This therefore means that other factors not studied in this research

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.955855673
R Square	0.913660067
Adjusted R Square	0.861856107
Standard Error	521.0109779
Observations	9

contribute 8.7% of the cases by juveniles. Therefore, further research should be conducted to investigate the other factors that affect cases registered.

Table: ANOVA of the Regression

ANOVA					
	df	*SS*	*MS*	*F*	*gnificance F*
Regression	3	14362719.8	4787573	17.63688	0.004322
Residual	5	1357262.196	271452.4		
Total	8	15719982			

The significance value is 0.043 which is less than 0.05 thus the model is statistically significance in predicting cases registered against juveniles with year. The F critical at 5% level of significance which is less than the F critical (value = 17.63), this shows that the overall model is significant.

Table: Coefficient of determination

	Coefficients	*Standard Error*
Intercept	18039.60317	2228.420097
1	-4667.743386	1376.081594
1	752.5508658	250.1501054
1	-40.11700337	13.79901322

Multiple regression analysis was conducted as to determine the relationship between cases registered and the one independent variable (years). As per the excel generated table,

regression equation ($Y=\alpha+\beta_1 x + \beta_2 x^2 + \beta_3 x^3 +$ error) becomes

$Y=18039.6 - 4667.7^* x + 752.550^* x^2 - 40.11700^* x^3 +$ error

According to the regression equation established, taking all factors into account (years) constant can't be zero. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in years will lead to a value decrease in crime rate; At 5% level of significance and 95% level of confidence, cases registered is varying with years.

To quantify the strength of the relationship between the variables, the study used Karl Pearson's coefficient of correlation. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by *r*. The Pearson correlation coefficient, *r*, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the

two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases. The data presented before on years was computed into single variables per factor by obtaining the averages of each factor. Pearson's correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed.

Correlation	Cases against juveniles	Years
Cases against juveniles	1	
Years	-0.632281186	1

According to the Table above, there is a negative relationship between both advertising of magnitude 0.632. The negative relationship indicates that there is a correlation between both years and cases against juveniles

CHAPTER FOUR
SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Introduction

This chapter presents summary of findings, conclusion and recommendations of the study in line with the objectives of the study

4.2 Summary of the Study

In determining the murders happened in India when summarized with age we can see that the findings are in exponential form. It says that as age increases the murder killing is also increasing exponentially. In India, as crime can be of various forms taking the population of the country as 1 crore according to the statistics it was found that cases of crime under various categories in the country increased by about 5 percent last year as compared to 2009.

According to "Crime in India 2010," a total of 22,24,831 crimes were analyzed against 21,21,345 cases in 2009. **Murder** cases during the year (33,335) went up by 3 percent against 32,369 cases in 2009. Cases under the following heads showed an increasing trend — attempt to murder increased by 1.3 percent, rape cases increased by 3.6 percent, **kidnapping** and abduction cases increased by 13.5 percent, robbery rose by 4.4 percent, and dowry deaths went up marginally by 0.1 percent.

Crime against women during 2010 (2,13,585) went up by 4.8 percent compared to 2,03,804 cases recorded in 2009. Crime against children went up by 10.3 percent (26,694) as against 24,201 cases in 2009. Looking of data on Accidental Deaths and Suicides in India 2010, as many as 3,84, 649 lives were lost in accidents in 2010. In 2009, this figure stood at 3,57,021 indicating an increase of 7.7 percent in 2010. Road accidents claimed the lives of 1,33,938 people last year, indicating a rise of 5.5 percent compared to 1,26,896 deaths in 2009. From the Pearson's correlations analysis, the study established that there is a positive relationship between crime and age group.

4.3 Conclusion

The objective of the study was to find the correlations between crime and other social and economic factors using the data provided. After the analysis of the study findings, the study concluded that crime rate in India is increasing every year. Taking the population into consideration as population is increasing every year with crime rate. We also found the reasons behind crime like theft, robbery, prostitution which has been explained earlier the reasons behind is poverty which has become an important concern. Eradication of poverty and reduction of unemployment and educating the youth of country could reduce crime to some extent. Taking into consideration, as India is the 7^{th} largest country and factors into consideration incidents of crime fluctuated during this period. From the data analyzed, we can determine that economic, political, and societal factors have played a crucial role in the occurrence of crime and crime control practices in India. Recent phenomena, like the financial crisis and the current political stalemate in India, seem to have contributed to this recent disturbing increase in crime. If these factors can be stabilized, then we may anticipate the improvement of the crime situation in India

A cross national comparison with USA reveals that overall rates of crime in India were substantially lower than that in the U.S. Considering the crime rate with United States, the overall crime rate against human body is high when compared. It is also noteworthy that that the crime rates of violent crimes, as well as of property crimes, have all decreased in the U.S. since the early 1990s. But, in comparison between India and U.S, India can consider as the safer place as compare to U.S

4.4 Recommendations

This project

- The study established a relation between correlations of crime and concluded that in few crime rates of violent crimes had reduced.
- The study also found that crime rate is less compared to United States but keeping in mind the population of India is also in top position
- An interesting fact is that south states has recorded less crime rate in overall stating the fact that people in south are more religious and sensitive in nature according to general surveys.

Finally, the study determined that there is a positive relationship between both correlations of crime with juveniles and crime against human body.

taking all remaining factors for comparison purposes and to allow for generalization of findings on the effect of crime behavior

4.5 Suggestions for further studies

Since this study explored the relationships between crime and other socio-economic factors taking a few into consideration, the study recommends that a similar study should be done More aspects of crime records and data is required for us to take into consideration of population across states. Standardized criteria should be formed to measure efficiency of handling crimes.

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