

**SOCIO-ECONOMIC CORRELATES OF CRIME IN
DELHI-NCR**

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CERTIFICATE

I do hereby declare that the dissertation entitled “**Socio-Economic Correlates of Crime in Delhi-NCR**” for the award of M. Phil is a bona fide work and it has not been submitted to any other University for the award of any other degree.

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(Tara Shanker Chaudhary)

*DEDICATED TO
MY PARENTS
AND
FRIENDS*

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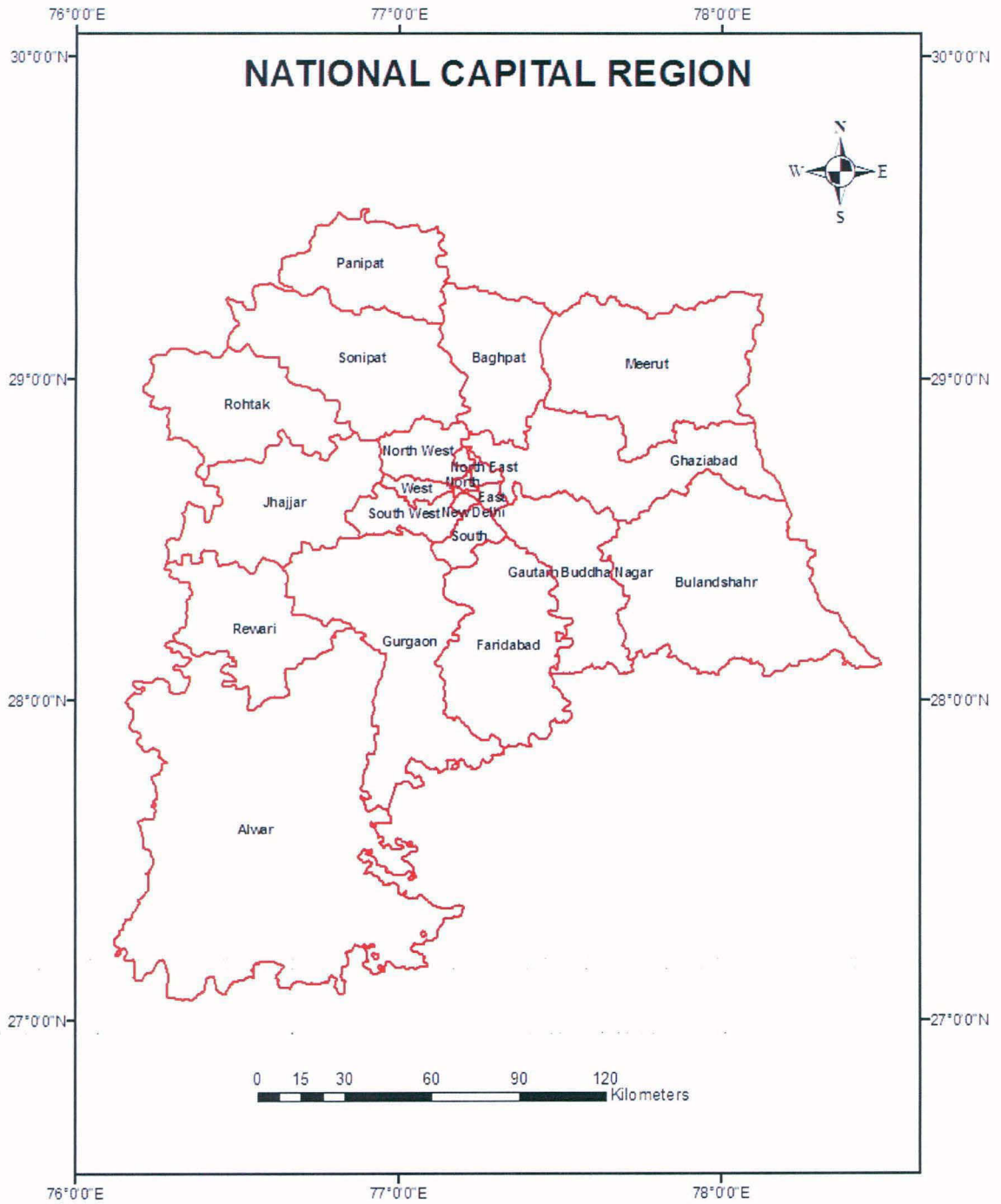
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Figure 1.1 National Capital Region



CHAPTER-1

INTRODUCTION

There is always a tension between economic change and social stability since the benefits and costs of socioeconomic change, including crime, are unevenly distributed among urban neighborhoods. Labor market changes, demographic shifts, housing patterns, and public policy all influenced the rise in crime. Economic changes have affected migration and urban employment patterns, social organization suffered helping to create crime-prone environments. When some sectors are growing relatively rapidly, there is an indication of rising economic inequality. Social tension also arises due to uneven distribution of the growth. Hence questions arise: Is there any evidence of a strong relationship between crime and income inequality? What are the socio-economic correlates of crime? Total number of incidences may not be increasing but certain types of crimes like crime against women are emerging out in recent years. Some parts of the urban areas are emerging as hotspots of crime after globalization; a particular segment of the society is being victimized. Therefore it would be interesting to study crime distribution and its changing pattern in urban areas like National Capital Region for last few years of faster socio-economic changes.

The presence of crime in society today is a multifaceted problem. It is the result of many factors and no attempt will be made here to explain all crime. It can be said is that the economic forces of globalization have created a group of circumstances that have created environments, friendly to the formation of criminal activity in the society such as concentrated poverty, residential mobility and population turnover, family disruption, and population density. The logic of growth driven by globalization has benefited some regions and cities more than others. All of these things have been influenced by globalization and all contribute to the problem of crime. Economic growth has actually led to an increase in crime rates. The reason lies in the quality of growth occurring after liberalization. Liberalization operates in many ways: (1) it has increased inequalities, and hence social

tension. 2. The capital intensive nature of industrialization has squeezed the growth of employment opportunities for the general public. (3) Rising consumerism has led to a sharp increase in consumer demand. Coupled with restrictions on legal means to satisfy this demand, this may lead to an increase tendency towards relying on criminal means to satisfy this demand. Simultaneously, rising education levels – without any corresponding increase in economic opportunities for the masses – seems to have led to increasing frustration with legal means of livelihood, and increased crime rates. (Mousumi Dutta and Zakir Husain 2009)¹

Statement of the Problem

The process of globalization, urbanization in developing countries go hand in hand with various processes of disorganization and deviant behaviour, and among them the most noticeable is rising crime. Increasing crime is perhaps the price our society has to pay for the neglect of the social consequences of economic changes. While a little change happened in the types of crimes in rural areas, a huge change in the nature of crime in urban areas has taken place. Crime is a very complex phenomenon, determined by various factors working simultaneously and it is an inherent part of every society irrespective of their level of development, geographical location etc. But the magnitude and the nature of crime vary across time, space and societies. Crime is always defined by law and laws are made according to the situation emerging in society time to time. It is seen that crime are higher in urban areas compared to the rural areas. Present study is based on some hypotheses such as some specific crimes are going up in recent years and the nature of crime in urban areas is changing visibly. Thus an effort is made to understand the changing nature of crime in Delhi-NCR and to find out the determining factors of crime.

1. Dutta Mousumi and Husain Zakir (2009), 'Determinants of crime rates: Crime Deterrence and Growth in post-liberalized India', MPRA Paper No. 14478 posted 05. April 2009

1.1 Literature Survey

Crime is the violation of the rules and regulations enforced by the society from time to time for which definite punishment is set by law. Members in every society are expected to act according to its established norms and laws. But when an individual finds it difficult or impossible to satisfy his wants and desires in a direct and socially accepted manner, he attempts to find a substitute satisfaction. When good solutions are not available, he engages himself in anti-social behaviour of criminal nature. Crime is considered as a deviant behaviour, because it is an act of human against customary norms of the society. A crime is further viewed by different parts of the world, even by different sections of the same people differently. Emile Durkheim one of the eminent sociologists made an outstanding contribution to the study of crime. He says that a society without crime is impossibility. Moreover, crime may even have positive consequences for a social system. The existence of crime strengthens collective sentiments as to what is right and proper.

Violence free life is an important aspect of social well-being. But it has been a neglected issue in development studies. Crime degrades quality of life in many ways. Crime is also more 'expensive' for poor people in poor countries. Crime undermines the ability of the state to promote development. High crime rates can drive out foreign and domestic investment as well as skilled or high productive labor. Thus, protection from violence can be said as one of the "capabilities" that contribute to the quality of life. (Sen. 1985)²

There is another reason why protection from violence is a "capability" of much interest: it does not necessarily improve as income levels rise. Many other basic capabilities, such as nutrition, longevity, and literacy, are positively related to per capita income and tend to improve with economic growth even in the absence of direct intervention. Hence protection from violence is not assured by economic growth, and in fact there are evidences of violence rising as per capita income rise and other development indicators also.

² Sen. Amartya (1985). *Social Exclusion*

1.1.1 Theories of Crime

For most of the last two decades, ecological studies of crime have been informed by two somewhat different perspectives: (1) *social control-disorganization theory* and (2) *routine activities theory*. Although the two schools of thought are closely related, an important distinction can be made. Social control-disorganization theory focuses on the ability (or lack thereof) of residents of some geographic unit (e.g. a neighborhood) to come together to achieve a common goal, like reducing rapacious crime. Alternatively, routine activities theory focuses on the presence of opportunities for crime in an area, as shaped by residents' daily activities. In addition, the two theories suggest different levels of analysis: social control theory considers community explanations for crime, while routine activities theory is often interpreted as focusing on the individual. However, the difference between the two perspectives can be reconciled, and an integration of the two theories provides the most robust theoretical explanation for ecological studies of crime.

Social disorganization theory (discussed earlier) is concerned with the way in which characteristics of cities and neighborhoods influence crime rates. The roots of this perspective can be traced back to the work of researchers at the University of Chicago around the 1930s. These researchers were concerned with neighborhood structure and its relationship to levels of crime. Classical Chicago School theorists, and Shaw and McKay³ in particular, were most concerned with the harmful effects of racial and ethnic heterogeneity, residential mobility, and low socioeconomic status on an area's ability to prevent crime.

Social disorganization takes a macro-level focus, considering ecological units and the development of formal and informal controls within those units. While *routine activities theory* focus on both individual routines and the emergence of criminal opportunity in places, both of which are products of a larger social structure. But what *opportunity theory* says is that:

- Criminal behavior is accomplished in an opportunity context.

³ Shaw. C. R. and McKay. H. D. (1969), 'Juvenile Delinquency and Urban Areas'. Chicago University Press.

- An opportunity context is the convergence of motivated offenders, suitable targets, and capable guardians in time and space. Criminal opportunity contexts exist at the individual and environmental levels. Environmental contexts are manifested in a variety of bounded locales (e.g., schools, neighborhoods, or cities).
- Individual-level criminal opportunity context is a function of the convergence of exposure to motivated offenders, of target vulnerability, target enmity, target gratifiability, social control, and social ties.
- The likelihood of a criminal act occurring is the result of simultaneous direct effects at the individual and environmental levels of criminal opportunity contexts as well as individual-environmental-level interaction effects.

Based on their respective opportunity costs, individuals choose to specialize in either legal or criminal activities. An increase in inequality lowers the economy's growth rate and possesses negative welfare effects for all agents with endowments equal to or above average and for agents with endowment below average that are born sufficiently far in the future(Stefan Dietrich Josten).⁴

Subcultural theories to explain urban crime are of two types—*subculture of violence* and *subculture of poverty*. Common to both types is the belief that certain groups carry sets of norms and values that make them more likely to engage in crime. The subculture of violence thesis holds that high rates of violence result from a culture where criminality in general and violence in particular, are more acceptable forms of behavior. Carriers of a subculture of violence are quicker to resort to violence than others. Situations that normally might simply anger others could provoke violence by those carrying subculture of violence values. In the formulation of these ideas, sub cultural theorists claim that social institutions themselves contribute to the development and persistence of a subculture conducive to criminality and violence. For example, the disintegration of particular institutions (i.e., churches, families, and schools) denies certain populations (and in

⁴ Stefan Dietrich Josten (2003), 'Inequality, Crime and Growth: A Classical Argument for Distributional Equality' *International Tax and Public Finance*, 10, 435–452, 2003

particular, minorities) the opportunity to learn conventional norms and values. The result of such processes is that certain groups are more likely to use violence in their day-to-day encounters, and violence is seen as an acceptable means to solving disputes. The classic statement on the subculture of violence is Wolfgang and Ferracuti's ⁵*The Subculture of Violence: Towards an Integrated Theory in Criminology* (1967). According to critics, the main drawbacks with this perspective are that it tends to overlook the interrelation of normative processes and institutional deterioration with more structural features of a given community, and that it is difficult to operationalize it in a testable fashion (how is the presence of sub cultural values measured in individuals other than by the behavior that is being predicted?).

Subculture of poverty explanations has focused more on urban crime than have subculture of violence explanations. Subculture of violence explanations have been used to explain crime in urban and nonurban settings, but those who have written about the subculture of poverty have been concerned primarily with the criminal behavior in the ghettos and outskirts of central cities.

The most notable expression of *conflict theories* as an explanation of urban crime has focused on income inequality (Blau and Blau)⁶. Here scholars have argued that frustration is a byproduct of income gaps that are viewed as unjust by those in subordinate positions. Marxist scholars describe how the contradictions inherent in advanced capitalism make crime—particularly where populations are concentrated, such as in the city—more likely. Most of their critics emphasize that conflict theorists are incorrect (e.g., it is not income inequality that predicts crime, but absolute poverty), or too political.

⁵ Wolfgang E. Marvin and Franco Ferracuti, *Subculture of violence: towards an integrated conceptualization*. Pp.95-269

⁶ Blau Judith R and Blau Peter M (1982), 'The Cost of Inequality: Metropolitan Structure and Violent Crime', *American Sociological Review*, Vol. 47, No. 1 (Feb., 1982), pp. 114-129 Published by: American Sociological Association

Wilcox, Land, and Hunt's (2003)⁷ recent articulation of the integration of social control-disorganization and routine activities theories into a *criminal opportunity perspective* provides the most successful attempt yet. A breakdown in social integration due to population turnover, ethnic or racial heterogeneity, and broken families are the processes that worsen the disorganization of the society. In these areas, residents are not organizing to address crime and other problems. The socialization of children becomes problematic due to the lack of social integration, and informal control of youths in those areas is difficult. Adults are either not present to provide supervision or are hesitant to supervise children that are not their own, as often happens in relatively stable neighborhoods. The result is that children are not socialized or supervised, leading to the acceptance, or at the very least, unawareness of deviant behavior. Levels of poverty and urbanization intensify the process of an area becoming disorganized. The erosion of social institutions is one main source of persistent crime. Thus poor local economic conditions and inadequate participation in the labor market come to be the results of social disruption in addition to being causes of it. The quantity and quality of employment for local residents, adults as well as youths, is a central factor in explaining neighborhood and social disorganization and high crime. Workers in the era of LPG are in low-wage, sporadic, dead-end jobs. They tend to be less skilled, educated, and reliable, again both mirroring and influencing the character of their jobs. *Classical criminology* held that individuals have free will to commit or avoid crime (Siegel, 2001)⁸. The rational choice theory derives from classical criminology, where individuals weigh the benefits and risks of crime. Positivists believe that behavioral choices result from external forces beyond the individual's control. Durkheim described the progression to a large, urban, organic society as creating anomie or societal strain. This is related to the conflict view of crime, where law appears to be written by the *haves* to protect themselves from the *have-nots*. Likewise, street crimes are given greater sentences than crime in the suites, and often the poor are given stiff sentences

⁷ Wilcox, P. Land, K. C., and Hunt, S. A. (2003). *Criminal Circumstance: A Dynamic Multicontextual Criminal Opportunity Theory*. Aldine de Gruyter, New York.

⁸ Siegel, L. J. (2001). *Criminology: Theories, Patterns, and Typologies* (7th ed.). Belmont, CA: Wardsworth.

while the wealthy are given leniency for even serious crimes. The interactionist view of crime holds that crime and deviance is defined in terms of those in power, and crime is given meaning by the way people react to it.

The Chicago School believed that behavior was influenced by the social and physical environment. Urbanization was seen as the source of crime, as there would be more people moving to the city than there were jobs for them. Large numbers of unemployed people became a burden and led to the creation of social work organizations that were needed to support them. Despite this, crime seemed to fester in city slums. This is highly relevant to explaining theft or any other crime designed to provide an illicit gain.

Social learning theory, credited to Ronald Aker, holds that individuals learn how to act by watching others or watching television. If an individual, particularly a child, lives in a poor neighborhood surrounded by crime, he is at a high risk for acting out the same behaviors that he observes every day. When friends or family members steal, young impressionable children will model that behavior and begin a life of theft to support their own lifestyle. The idea is that an individual imitates others in proportion to how much contact time he has with others.

Sutherland's⁹ *differential association theory* likewise held that criminal behavior was learned in a social environment. Crime was seen as a result of a combination of situation, opportunity, and values.

Albert Cohen¹⁰ wrote of *subculture theory*, which was created out of merger of anomie theory and the Chicago School (Williams & McShane, 1999)¹¹. He felt that subcultures formed in groups, gangs, and in inner city neighborhoods abandoned by middle-class residents who moved to the suburbs. Those who remained in slum neighborhoods would feel status-frustration, much like in conflict theory. These subcultures are often subcultures

⁹ Sutherland, E.H. (1949) *White Collar Crimes*. Dryden Press, New York

¹⁰ Cohen, L. and Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44:588–608.

¹¹ Williams III, F. P., & McShane, M. D. (1999). *Criminological Theory* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

of deviance. While subcultures can develop among individuals who are not poor, the members of a gang or an inner-city slum are certainly suffering from poverty or unemployment. A non-integrated community would lack organization, lack social control over juvenile offenders, and lead individuals to associate in groups that provide respect and a sense of belonging. This may also be known as a conflict subculture, having abandoned the norms of society, seeking belonging, seeking money-making opportunities that are unlawful, and otherwise rebelling against the dominant culture as a group.

Eimle Durkheim and Robert Merton contributed the *theories of strain and anomie*. Strain results in times of change, as society becomes more organic and complex. Strain also results where a culture places a strong emphasis on the achievement of wealth and material possessions. The structure of the society may limit the possibility of poor individuals to achieve success through institutionalized and socially-acceptable means. The clarity of norms breaks down. Strain results from its theoretical components, such as poverty, lack of opportunity, and the formation of lawless groups. Anomie leads individuals to develop alternative values, often rebelling against societal norms to achieve success through illegitimate means. Strangely, during periods of economic prosperity, crime rates may actually increase. According to relative deprivation theory, greater success by some motivates the lower-class even more to commit crime for their own benefit. Relative deprivation is more of a perception, a comparative process in the mind of an individual concerning his surroundings, than it is a theory.

Broken windows theory relates to social disorganization as it links neighborhood decay to an increase in crime. If petty offenses are not prosecuted or decaying facilities not maintained, it signals a disinterest in the community by residents and serves to invite worse crime. This may lead to an increase in vandalism, gangs, and the sale of narcotics, but will also lead to an increase in burglary, robbery, and theft. There is a perception that no one is watching and no one cares. Crimes and social disorganization are believed to derive from poverty, unemployment, population density, and low collective efficacy. Broken windows theory views urban deterioration as a cause of crime, and it is a supporting argument for community policing.

There are three overlapping branches in the social structure perspective of crime. *Social disorganization theory* focuses on environmental conditions. It considers: neighborhood condition, lack of social control, criminal gangs and groups, conflicting social values, unemployment, family condition, and single-family homes. *Strain theory* focuses on conflict between goals and means. It considers: the unequal distribution of wealth and power, frustration, and alternative methods of reaching goals, such as robbery, theft, and drug trafficking. *Cultural deviance theory* is the merger of the other two. Because of strain, disorganization, and isolation, a unique subculture is formed. That lower-class culture has its own values and beliefs, usually in support of criminal activity, such as taking from and conquering those in the upper classes. Those values may be spread or taught to others through cultural transmission. This transmission of values can also be explained by social learning theory.

Many authors and researchers have at least indirectly linked crime and poverty. It is widely believed that the poor commit more of the crime, at least street crime. However, it is more a link to property crime, not violent crime. Even in rural areas where crime is less frequent, acts of violence are of similar proportions, and those are often linked to socio-economic conditions (Arthur, 1991)¹². The poor have a greater motivation to steal to satisfy their means. They only resort to violence when needed to accomplish the theft, such as in an armed robbery.

Positivist criminology states that criminal motivations are beyond the criminal's control. Arguably poverty is an influence on the criminal, but there is some inconsistency in linking economic variables with all crime. This may be due to the difficulty of accounting for multiple variables in research, such as divorce, unemployment, broken homes, neighborhood decay, or other variables. Many authors suggest that individuals in poor families and communities are more likely to steal, rob, sell drugs, and otherwise make illicit gains.

Early studies on crime and economic conditions were conducted by Quetelet¹³ in France nearly 200 years ago. He found that there was more property crime in wealthy

¹² Arthur, J.A. (1991) 'Socio-economic predictors of crime in rural Georgia'. *Criminal Justice Review*, 16: 29-41.

¹³ Quetelet. A.J. (1842) *A Treatise on Man*. Gainesville. Scholars Facsimiles and Reprints 1969

communities, because there was more to steal. Similarly, there was little property crime was low in poor communities because there was no inequality. Everyone was equally poor. The resulting lesson from that research is that if poverty leads someone to steal, they are more likely to go to affluent areas to do it. As for unemployment, there is not conclusive evidence that unemployment makes any one individual more predisposed to crime. However, on the macro-level, an increase in unemployment is accompanied by an increase in crime rates. Research problems in this area often deals with the multi-variate causes of crime, such as: unemployment, poverty, divorce, broken homes, poor schools, poor housing quality, racial and ethnic mix, residential mobility, and population turnover. A wealthy person makes a rational choice not to steal, but he also has no motivation to do so, since his standard of living is sufficient.

Rational choice has its critics too. Boudon (2003)¹⁴ argues that rational choice is legitimate but weak. There are many variables and factors to explain a person's decision to commit a deviant act. There are other social factors to consider, even if a person makes a rational choice in committing crime, understanding his behavior requires an observer to see the big picture and understand the motivations for his actions. While the decision may be rational, the underlying circumstances of being poor will motivate many to steal. If a person is starving to death, it is difficult to resist the urge to steal in order to eat.

Social reaction theory or labeling theory explains society's reaction to crime and how the labeled deviant reacts to the new label. Labeling is a social construction, based upon what society determines is deviant. The individual responds to the image that others have created for him, such as when he is labeled as a *troublemaker*, *ex-con*, *delinquent*, or *thief*. Whether the offender likes it or not, society has given him a new identity. The offender is highly likely to adopt that identity, internalize it, and live up to the new, lower expectations for him. It is a stigma that produces low self-image, self-esteem, and self-respect. It leads to secondary deviance, where individuals commit more deviant acts in keeping with their assigned label. Conflict theory holds that crime is a weapon of the *haves* over the *have-nots*. Marxists refer to this power-differential as the instrumental view, where the

¹⁴ Boudon, R. (2003) 'Beyond rational choice theory' *Annual Review of Sociology*, 29. Retrieved April 19, 2007, from PsycINFO database

capitalists impose their standards onto the poor. The Marxist approach sees crime as a representation of class struggle.

One thing that this compilation study has shown is that there are conflicting views as to the motivations of crime and the influences on criminal behavior. Economic deprivation or poverty can motivate individuals to commit crime or create the circumstances that serve as a breeding ground for crime, especially property crime. Several theories have been used in this writing to tie-in to the socio-economics of crime. Nevertheless, there are many who are poor but still choose to live a life of high moral standards and to adhere to societal norms. As such, poverty cannot be a lone explanatory variable for crime.

1.1.2 Initial Studies on Crime

Crime is closely related to time and place. A brief historical review is vital to a proper understanding of its modern manifestations. There have been four major phases in the development of spatial and ecological perspectives on crime: the nineteenth-century cartographic school, the Chicago ecological school of the 1920s and 1930s (e.g., Shaw et al. 1929; Shaw and McKay 1931)¹⁵, the factor analytic school of the 1950s and 1960s and, most recently, environmental criminology (Mayhew et al. 1976; Brantingham and Brantingham 1981a)¹⁶ and the geography of crime (e.g., Harries 1974, Herbert 1976, 1982).¹⁷ Ecological studies at University of Chicago can be said the first step towards the spatial study of crime. Shaw and McKay, researchers at the Chicago school, specialized in using official data to make pin maps, spot maps, rate maps, and zone maps. The study of crime on an intra-region or intra-urban level began with Henry Shaw's, and later, Clifford McKay's studies of Chicago. They studied and noticed that the same neighborhoods in Chicago seemed to have about the same delinquency rates regardless of which ethnic group moved in. They said that "poverty areas" tended to have high rates of residential mobility and racial heterogeneity that made it difficult for communities in those areas to

¹⁵ Shaw. C. R. and McKay. H. D. (1969), 'Juvenile Delinquency and Urban Areas'. Chicago University Press

¹⁶ Brantingham. R. and Brantingham. P. L. (1982), 'Environmental Criminology' pp 147-165, Prospects Heights. IL: Waveland Press

¹⁷ Herbert T. David (1989), 'Crime and Place: an introduction' in *The geography of crime*, 1989, pp. 1-15

avoid becoming socially disorganized. These two variables declined the effectiveness of neighbourhood that led to higher and higher rates of delinquency. Shaw and McKay's work revealed five factors causing crime: low socioeconomic status, high residential mobility or population turnover, and high racial or ethnic heterogeneity. Two other factors, family disruption (e.g., divorce, single parent families) and urbanization (often measured with a density variable). The basic thrust of this modern stream of research is the pervasive belief that crime cannot be understood without having accurate knowledge of the full context—demographic, economic, geographic, and social—in which it occurs. The most immediate geographic contexts are the neighborhoods in which people live and the places where their lifestyles frequently situate them.

The study of crime on an intra-region or intra-urban level began with Henry Shaw's, and later, Clifford McKay's studies of Chicago. During the early-to-mid twentieth century, the research undertaken by Shaw and his associates became the best known of this kind (Shaw and McKay, 1942, 1969). Their work in Chicago, rooted in the human ecology model was motivated by the belief that human behavior was best viewed as being situated. Among other things, this meant that the geographic context of human behavior was very important in sociological studies (Shaw, 1929). The basic thrust of this modern stream of research is the pervasive belief that crime cannot be understood without having accurate knowledge of the full context—demographic, economic, geographic, and social—in which it occurs. The most immediate geographic contexts are the neighborhoods in which people live and the places where their lifestyles frequently situate them. Wider geographic contexts, reflecting variation in both individual-level resources and society-wide norms, are determined by the different activities, both routine and non-routine, in which these people engage.

Initial theories of crime emphasized on the effect of poverty and social deprivation on crime rates (Shaw and McKay, 1942. Fleisher (1963, 1966)¹⁸ pioneered the study of criminal behavior among economists. He argued that crime rates are positively associated with unemployment and low income levels. Ehrlich (1973), too, showed that low income

¹⁸ Fleisher, B., (1966) 'The Effects of Income on Delinquency', *American Economic Review*, 56 (1/2), pp. 118-137

levels led to high crime rates. Becker (1968)¹⁹, however, argued that a criminal should be viewed, not as a helpless victim of social oppression, but a rational economic agent. Like any other people, the potential criminal weighs costs/risks and benefits when deciding whether or not to commit crime. Following these theories, a substantial body of empirical literature has originated in developed countries, attempting to identify the determinants of crime. Similar studies have rarely been undertaken in developing countries. Among other important issues examined were the effects of police presence, convictions, and the severity of punishment on the level of criminal activity (Becker, 1968, Ehrlich, 1973, 1975, 1996). This led to the development of deterrence theory, arguing that potential crimes evaluate both the risk of being caught and the associated punishment. The empirical evidence from developed countries confirmed that both factors have a negative effect on crime rates

1.1.3 Geography of Crime

Crimes are not distributed equally over the space and it is important to know how the different types of crime are distributed in the urban area. Studies showed that there is a positive relationship between crime and season, temperature. He explained that Burglary is committed more in longer winter nights and overall crimes are committed in summer.

Cohen (1941)²⁰ in his paper “The Geography of Crime” has explained that crime against body is always higher in summer while property crimes are committed usually in winter. Wolfgang (1972) in his paper “Urban Crime” has explained that some crimes take place where the criminal live but some take place where victims live e.g. rape, homicide and assault occurs where criminals live whereas serious property crimes take place where

¹⁹ Becker, G.S., (1968) ‘Crime and Punishment: An Economic Approach’, *Journal of Political Economy*, 76 (2): 169-217.

²⁰ Cohen. Joseph. (1941), ‘The Geography of Crime’ *Annals of the American Academy of Political and Social Sciences*, 217 (September, 1941): 29-37

victims live. Occurrence of crime incidences is highest in the months of June- July (Mary Jos 1988)²¹.

Ashok, Noble and Sitaram (1979)²² found that there is a seasonal rhythm of dacoity in North Central India. They found that dacoity is committed in winter. Sivamurthy (1982)²³ in his paper “The Spatio-Temporal Variation in the Incidence of Theft in Madras City” found that property crimes take place in affluent areas of the city. So property crime is a function of physical characteristics and economic prosperity of the area.

1.1.4 Spatiality and crime

The period of 1960s revolutionized the spatial study. Earlier geographers were concerned with crime studies increasingly emphasized specific places in terms of its analysis. Since geographers identify clusters of crime and identify them as delinquent areas, the task was to understand the ways in which such places have emerged and characters which they have assumed. (Herbert, 1989) according to Evans and Herbert²⁴ there are two important things to be noted when studying the space and crime, first is the area where criminals are residing and the second the place where the crime is committed because crime sites and criminal residences are often different. According to Curtis (1974) delinquency rates are to be high in areas with declining population and also in areas receiving a rapid influx of immigrants. Poverty area with low income families; children under age 18 not living with both parents and unskilled labour force and substandard housing attract crime. Thus criminal areas may be located in any part of the city, but crime areas were to form pockets of particular type of crime depending upon the favourable environment to the criminals.

²¹ Jos Mary. (1988). A Socio-Spatial Analysis of Crimes in India: A Case Study of Delhi, Dissertation Submitted to Jawaharlal Nehru University, New Delhi

²² Dutt, Ashok K.; Noble A.G and Singh Sitaram (1979). ‘Is There a North-Central Subculture of Violence in India’ *The National Geographical Journal of India* 25(1979)

²³ Sivamurthy. A. (1982), ‘The Spatio-Temporal Variation in the Incidences of Theft in Madras City,’ *Indian Journal of Criminology* 10 (1982): 108-116

²⁴ Herbert T. David (1989), ‘Crime and Place: an introduction’ in *The geography of crime*, 1989, pp. 1-15

1.1.4 Studies on Rural-Urban crime

The research literature on urban crime is generally of two types. There are studies that compare cities, seeking to understand why some have higher crime rates than others. And there are studies that focus on explaining variations in crime levels within cities. However, both types of studies use similar theories and focus on the same social forces to understand their observations. The primary theories used to study urban crime are social disorganization, subculture, and conflict theories.

Comparative studies are often made on crimes in rural and urban areas. Usually the reported crimes are more frequent in urban areas than in rural areas. A study by Robert H. Gordon has found that for a variety of reasons, cities seem to produce and nurture considerably more crimes than rural areas. Suburban crime rates are higher than rural crime rates, but still considerably below urban crime rates. One reason for the high urban crime rates is the presence of slum or ghetto areas with their poverty, unemployment, and overcrowding conditions associated with crime. Fear of crime is often found in inner-city population. According to Kinsey in the inner cities crime is a social problem, second only to unemployment. It is the problem of the poor, the weak, and the vulnerable. For them, losing the fight against crime is the worst crime of all.

Wolfgang (1972) in his paper, "Urban Crime" has stated that the total crime rate in metro cities is nearly two times higher than the rates in other cities and about three times higher in rural areas. That is larger the city, higher the crime rate. Urban areas are characterized by high population density, spatial mobility, ethnic and class heterogeneity, reduced family functions and greater anonymity. When these traits are found in high degrees combined with unemployment, illiteracy, poverty and unskilled labour, it ultimately leads to deviant behaviour.

Cities are filled with property from vegetables and fruits to jewelry and bank notes. Hallenback (1951)²⁵ argued that when standard of living is higher in the cities then the

²⁵ Hallenback (1951), '*American Urban Communities*', New York: Harper & Brothers Publishers, 1951

urge for possession is higher and this increases more of crime against property. While rural areas do not have these characteristics hence face lesser property crimes.

The transformation of production systems and labor markets has made the disparity wider. Industry is now based on smaller and more flexible production systems, and workers are more likely to be in the service sector, working part-time or engaged in informal sector activities greatly weakening the potential of organized labor and reducing the capacity of the state to enforce labor standards, collect taxes and fund welfare programmes. Research that identifies determinants of criminal behavior and explores the relationships existing between criminal activity and different socio economic variables has significant policy relevance. Robert H. Gordon observes that cities seem to produce and nurture considerably more crime than rural areas. Suburban crime rates are higher than rural rates but still considerably below urban rates. One reason for the high urban rate is the presence of slum or ghetto areas with their poverty, unemployment and overcrowding results with crime. Urbanity was supposed to destroy rigid primordial identities and lead to the emergence of a new, open accommodative and pluralistic culture. It was also believed that urban centers would represent scientific rationality, techno-industrial progress and a vibrant civil society filled with an active public sphere and life-affirming cultural institutions. But now urban centers are becoming increasingly insecure, tension ridden, and pathological. *Urban-rural differences are the most significant factors in the geographic distribution of crime.* For obvious reasons, states with large urban centers usually have higher crime rates than rural states. The geography of crime spans a broader range of subject matter than is often recognized. Using the example of victimization in an ethnically mixed inner city, it is suggested that the distribution of crime reflects the lifestyle and activity patterns of a community; and that the effects of crime, in turn, help to shape these routine urban behaviors. Thus, social structure and its spatial organization are both reflected in the form of criminal activity, and affected by the fear that this behaviour engenders. Crime infuses a range of social, economic and political relations; its geography offers insights into how these structural phenomena are played out in everyday life. (Susan J. Smith (1984))²⁶.

²⁶ Susan J. Smith (1984), 'Crime and the Structure of Social Relations', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 4 (1984), pp. 427-442

Wolfgang (1972) analyzed why urban areas have higher crime rates. He found that urban areas are characterized by high population density, higher spatial mobility, ethnic and class heterogeneity, reduced family bondage and greater anonymity. When these traits are found in high degree combined with physical deterioration, unemployment, illiteracy, unskilled labor and poverty, it ultimately leads to higher crime incidents. In a study of suburban crime it was found that, for property crime, the characteristics of surrounding neighbourhoods were a better predictor of crime than were the economic characteristics of a neighbourhood's local population. Furthermore, violent crime was influenced by local poverty more than surrounding economic conditions. He concluded that, while a neighbourhood's local demographic composition provides a good statistical explanation of violent crime, property crime is better understood in terms of the demographic composition of surrounding neighbourhood. These results are related to differences in criminal mobility that property crime offenders travel greater distances when committing a crime. So surrounding neighbourhood will have a greater effect on local property crime rates.

Elmer conducted research with regard to the factor, that density of population in urban neighbourhoods had been considered a factor in the production of delinquency and crime, the thought being that the incidence was greater in the thickly populated areas than in the sparsely populated areas. But however, he came to the conclusion that it was not the density of population, which was of great significance in juvenile delinquency but rather the transitional zone (slum sections), where the details of the individual's life did not definitely fit into the established group organizations and activities.

Raghavan²⁷ observes that crimes in the urban areas are quantitatively different from that of semi-urban and rural areas. Moreover, he also identifies crime prone cities in India. Out of 23 mega-cities, Delhi has the highest share of urban crime, followed by Mumbai and Bangalore.

Chockalingam²⁸ in his study on crime victimization survey in four major cities of Tamil Nadu State of India namely, Chennai, Coimbatore, Madurai, and Trichy selected randomly

²⁷ Jayamala. M. (2008), Trend and Spatial Pattern of crime in India: A case study of a district in India. A Dissertation submitted to Annamalai University, India

²⁸ Mentioned in Jayamala. M. (2008)

1500 households as samples. Compared to Chennai city the other three cities are less urbanized. The capital city Chennai mostly comprises higher class, higher middle class and middle class population. The other cities comprise mostly the middle class, and the lower class. He says that there is a significant relationship between victimization of burglary and residential area status. Burglary victims seem to be more in the middle class residential area status respondents (53.66%) and the higher class (31.07%) probably because of the increased possessions at house when compared to the lower class.

1.1.5 Crime against Women

Violence against women is a persistent and ongoing problem in India and around the world. It affects women's social and economic equality, physical and mental health, well-being and economic security. Decision-makers require a clear understanding of the nature and severity of social problems in order to develop effective responses. According to the Beijing Platform for Action adopted at the Fourth United Nations World Conference on Women in 1995:

Violence against women is an obstacle to the achievement of the objectives of equality, development and peace. Violence against women both violates and impairs or nullifies the enjoyment by women of their human rights and fundamental freedoms. The long-standing failure to protect and promote those rights and freedoms in the case of violence against women is a matter of concern to all States and should be addressed. (paragraph 112)

Why focus on violence against women?

Until recently, researchers and statistical agencies often gathered statistics generically, compiling data on violence regardless of the gender of victims or offenders. Data that are made available by gender demonstrate the specific risk areas for men and women and highlight the need for targeted programs to address violence for each gender. Men's and boys' experiences of violence are different than women's and girls' in important ways. While men are more likely to be injured by strangers in a public or social venue, women are in greater danger of experiencing violence from intimate partners in their own homes. Women are also at greater risk of sexual violence. The fear of violence is more pervasive for women and can prevent them from taking part as full citizens in their communities.

Worldwide, violence against women is an impediment to women's equality. According to the United Nations Population Fund (2005):

*Gender-based violence is perhaps the most wide-spread and socially tolerated of human rights violations. It both reflects and reinforces inequities between men and women and compromises the health, dignity, security and autonomy of its victims.*²⁹

There are forms of violence which are directed specifically against women ~ rape, sexual harassment, sexual exploitation as in prostitution, sexual debasement as in pornography, domestic violence ranging from battery to torture and even death. All these spring from the structure of patriarchy, defined broadly as a system of male dominance legitimated within the family and society through superior rights, privileges, authority and power. The degree and forms of expression of patriarchy vary from society to society. But the process of subordination is generally achieved by devaluing women's contribution, while at the same time extracting a significant contribution from them. A second process occurs through a powerful ideology of rigidly assigned roles for women, which act as boundaries for all their actions — boundaries which can be overstepped at their own peril. The most potent and restrictive injunction is the virtual debarment of women in *public* places or places typically designated as the male sphere. Further, sexual morality has double standards for men and women, the latter being subjected to strict norms. The following accounts of violence against women poignantly illustrate the conjunction of all these processes, and also bring out the cultural specificity of some types of violence. Finally, they emphasize the inadequacy, ineffectiveness and unwillingness of the State machinery to curb violence against women.

The question as to whether violence against women is really increasing, or whether a false impression of greater incidence is created because it is being reported to a greater degree than before, is a debatable one. There is reason to believe that there is an increase in both

²⁹ Measuring Violence Against Women: Statistical Trends 2006, Statistics Canada – Catalogue no. 85-570 pp. 1-97

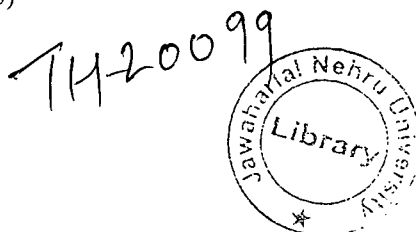
incidence and reporting. The increased incidence can be inferred from the fact that some types of violent crimes are relatively new, as for example the burning of brides for not fulfilling of exorbitant dowry demands, and the use of the new clinical sex selection tests for female foeticide. At the same time, it must be emphasized that in spite of increased reporting and awareness, the proportion of reported crimes to total crimes remains very low. This is true of crimes such as rape or forced prostitution which stigmatize the victim, as also of domestic violence which is considered to be an internal family affair and a matter of family honour. The general tendency of women, thus, is to avoid reporting incidents of violence against them; in addition, pressure is often brought upon them to remain quiet. (Meera Kosambi (1993)³⁰

Violence against women is partly a result of gender relations that assumes men to be superior to women. Given the subordinate status of women, much of gender violence is considered normal and enjoys social sanction. Cultural and social factors are interlinked with the development and propagation of violent behaviour. With different processes of socialization that men and women undergo, men take up stereotyped gender roles of domination and control, whereas women take up that of submission, dependence and respect for authority. A female child grows up with a constant sense of being weak and in need of protection, whether physical social or economic. This helplessness has led to her exploitation at almost every stage of life. Kumaraswamy (1992)³¹ points out that women are vulnerable to various forms of violent treatment for several reasons, all based on gender.

1) Because of being female, a woman is subject to rape, female circumcision/genital mutilation, female infanticide and sex related crimes. This reason relates to society's construction of female sexuality and its role in social hierarchy.

³⁰ Kosambi Meera (1993), 'violence against women: reports from India and Korea', Social and Human Sciences In Asia and the Pacific RUSHSAP Series of Monographs and Occasional Papers pp. 1-100)

³¹ Mentioned in Saravanan Sheela, 2000, 'Violence Against Women in India: A Literature Review', *Institute of Social Studies Trust (ISST)* March 2000 pp 1-83)



2) Because of her relationship to a man, a woman is vulnerable to domestic violence, dowry murder, *sati*. This reason relates to society's concept of a woman as a property and dependent of the male protector, father, husband, son, etc.

3) Because of the social group to which she belongs, in times of war, riots. Or ethnic, caste, or class violence, a woman may be raped and brutalized as a means of humiliating the community to which she belongs. This also relates to male perception of female sexuality and women as the property of men. (Saravanan Sheela (2000)³² and R.N. Mangoli ,Ganapati M. Tarase, 2009)³³

Most crimes against women go unreported for understandable reasons: attached social stigma, distrust in legal mechanisms, and fear of retaliation and so on. Institutional indifference makes matters worse. It is almost impossible to lodge a complaint against men in the police and the armed forces, or in government services. Crimes against women have roots in the male dominated socio-economic, legal and political order assaults on women are often visibly associated with their social status, their communal, ethnic and caste identities. Implicit in all this is the treatment of women as private property, to be protected by men of particular family, social, communal and caste groups. The notion that women need protection is linked to the traditional value placed upon their virginity and chastity. This has influenced the legal treatment of women as well, both in the provisions of the Indian Penal Code (IPC) and injustice procedures. Reporting of crime tends to be incomplete; so the data are prima facie suspect. Nevertheless, they may be useful in studying regional variations, considering that underreporting is a universal feature. Social scientists have neglected the study of crime despite its increasing presence in our daily lives. Violence against women is of undoubted importance in the context of assessing women's status. However, the commonly used indices such as the gender development index (GDI) and gender-related empowerment index (GEM) ignore this aspect of the well-being (or the lack of it) of women. A word about the reliability of the data: it is true that

³² Saravanan Sheela, 2000, 'Violence Against Women in India: A Literature Review', *Institute of Social Studies Trust (ISST)* March 2000 pp 1-83)

³³ Mangoli R.N. ,Ganapati M. Tarase, 2009, 'Crime Against Women in India: A Statistical Review', *International Journal of Criminology and Sociological Theory*, Vol. 2, No. 2, December 2009, 292-302

crimes against women are under-reported. The extent of under-reporting is expected to vary across space and time; as well as by type of crime. For example, rape is grossly under-reported, but it is believed dowry deaths rarely go unreported. Thus while it is risky to rank regions by crime rates, the latter may still be useful for a broad grouping of regions characterized by very high or very low crime rates. This is because regions with high (low) reported crime are quite likely to be those with actually high (low) crime rates. The only crime that seems to be clearly associated with sex ratio is that of dowry death (Chandan, Preet and Krishnaji)³⁴. Victims of dowry harassment, molestation, and rape etc., often stay back at home due to the lack of knowledge on legal awareness. This encourages the criminals to commit more such offences. The result indicates that demographic composition provides a good statistical explanation of property crimes; violent crimes and crimes against women, i.e. age and sex do have a significant effect on criminal activities. In other words environment variables interact with demographic variables in the creation of high crime areas. (Jayamala)³⁵

1.1.5 Other Aspects of Crime

Applying a “routine activities” approach to explain the relationship between macro level indicators of leisure activities and rates of serious crime would be interesting. Hypothesis behind this is that most of the leisure activities took place within the households, should have a negative relations with rates of crime whereas indicators of the volume of leisure activities that are usually conducted away from households will yield positive associations with rates of crime because non household activities place members of the population at a relatively high risk for criminal victimization. (Messner 1983)³⁶

³⁴ Mukherjee Chandan, Rustagi Preet, Krishnaji N. (2001), ‘Crimes against Women in India: Analysis of Official Statistics’, *Economic and Political Weekly*, Vol. 36, No. 43 (Oct. 27 - Nov. 2, 2001), pp. 4070-4080

³⁵ Jayamala. M. (2008), Trend and Spatial Pattern of crime in India: A case study of a district in India. A Dissertation submitted to Annamalai University, India

³⁶ Messner, S.F. (1983) ‘Regional differences in the economic correlates of the urban homicide rate: Some evidence on the importance of cultural context.’ *Criminology*, 21: 477-488.

Mousumi Dutta and Zakir Husain (Jan 2009), is possibly the first attempt to undertake a rigorous econometric analysis of determinants of crime in India. They found that both socio-economic as well as deterrence variables determine the crime rates significantly. Ray Jeffery explains that crime is not evenly distributed spatially or temporally. Ecological locations and design of the buildings influence the crime pattern of the city. Brantingham and Brantingham in his study have found that residences, schools and meeting places (entertainment locations) are the places of the gang's activities. And the 80 per cent of the gang's delinquent acts occur within this core area.

Demographic analysis is extremely important in the temporal analysis of crime. Sex as a demographic factor, is a crucial variable in predicting criminality. Simpson found that in the United States in the 1920s about 90 per cent of all reported murders with known assailants were committed by males. Simpson³⁷ uses data from the National Crime Victimization Survey, to analyse the hypothesis that high structural density (the percentage of housing units in buildings with five or more units) "impedes environmental social control", reduces surveillance, and increases opportunities for successful criminal activity. His results indicate that structural density, when controlling for level of urbanization, poverty, age of victim and racial composition, does have a significant effect on victimization. In fact, structural density accounts for more variance in theft and violent crime than both poverty and racial composition combined. *Age of victim is the most powerful predictor of violent crime*, followed by structural density. *The level of urbanization has the strongest effect on theft*, followed by structural density. Also "structural density tends to have a greater effect in rural areas than in suburbs or central cities".

Capitalism is a system of accumulation that organizes production and social re-production to extract surplus value. As it does so, accumulation generates those behaviors registered as crime by the state. Contributing to an empirically grounded theory of crime in advanced

³⁷ Simpson. M. E.(1985), 'Violent Crime, Income Inequality and Regional Culture: Another Look', *Sociological Focus* 18: 199-208

capitalism, findings show that selected personal and property crime rates vary with accumulation trends (Humphshire and Wallace, 1980)³⁸

Immigration is a controversial issue in all destination countries for at least two reasons. First, worker flows from countries characterized by a different composition of the labor force may have significant redistributive consequences for the native population. Second, there are widespread concerns that immigrants increase crime rates. In their paper Bianchi, Buonanno and Pinotti³⁹ examine the empirical relationship between immigration and crime across Italian provinces during the period 1990-2003. Drawing on police administrative data, we first document that the *size of immigrant population is positively correlated with the incidence of property crimes and with the overall crime rate*. Then, they use instrumental variables based on migration toward other European countries to identify the causal impact of exogenous changes of immigrant population in Italy. According to these estimates, immigration increases only the incidence of robberies, while leaving unaffected all other types of crime. Since robberies represent a very minor fraction of all criminal offenses, the effect on the overall crime rate is not significantly different from zero.

Pablo, Daniel and Norman⁴⁰ took an empirical cross-country perspective to investigate the robustness and causality of the link between income inequality and crime rates. First, they studied the correlation between the Gini index and, respectively, homicide and robbery rates along different dimensions of the data. Second, they examined the inequality-crime link when other potential crime determinants are controlled for. Third, they controlled for the likely joint endogeneity of income inequality in order to isolate its exogenous impact on homicide and robbery rates. Fourth, they controlled for the measurement error in crime rates by modeling it as both unobserved country-specific effects. Lastly, they examined the robustness of the inequality-crime link to alternative measures of inequality. They found that *crime rates and inequality are positively correlated (within each country and,*

³⁸ Hampshire. D. and Wallace. D. (1980), 'Capital Accumulation and Urban Crime: 1950-1971'. *Social Problems*. 28: 179-193

³⁹ Bianchi Milo, Buonanno Paolo and Pinotti Paolo (2008), 'Do Immigrants Cause Crime?' Paris School of Economics Working Paper No. 2008-05 pp 1-32

⁴⁰ Fajnzylber Pablo, Lederman Denial and Loayza Norman (2001), 'Inequality and Violent Crime' *The Journal Of Law And Economics*, August 2001, pp 1-38

particularly, between countries), and it appears that this correlation reflects causation from inequality to crime rates, even controlling for other crime determinants.

Neighbourhood organization does matter in determining the nature and rate of crimes. There are evidences that persistent unemployment among adult residents limited the development of stable households and youth employment opportunities. The resulting lack of informal social controls contributed to the persistence of crime in some poor urban neighborhoods. Property crime, drug sales, and other illegal activities provided income to youths in neighborhoods where legitimate employment options are scarce or provided low wages and irregular hours. Public policy on crime control in poor neighborhoods has concentrated on providing delinquents with vocational training. (Rechar M. McGahey, 1986)⁴¹

Dutt, Noble and Singh in the paper-‘Is There a North-Central Subculture of Violence in India’ came to the general conclusion after a district level analysis that its one’s environment, urban as well as rural, that very often induces criminal conduct like a physically dilapidated neighborhood setting, historic circumstances and high population densities.

There is a relationship between age and crime; the age crime curve is peak in the teenage years and then decreasing. There is little specialization in offending, but specialization does increase with age. Age effects need to be separated from period and cohort effects. The age-crime curve probably reflects decreasing parental controls, a peaking of peer influence in the teenage years, and then increasing family and community controls with age. (David P. Farrington, 1986)⁴²

1.2 Salient Features of Crime

Man is not inherently guilty. Nobody is born criminal from the womb of his or her mother. The circumstances and the environments or the economic conditions may force any one to commit an anti-social act. The problem of crime is not uniform or caused by the same factors. It is true that lack of stable background, faster change, and greater need of

⁴¹ McGahey Rechar M.(1986), ‘Economic conditions, Neighborhood Organization and Urban Crime’ *Crime And Justice*, Vol. 8, Communities and Crime(1986), pp. 231-270

⁴² David P. Farrington (1986), ‘Age and Crime’ *Crime and Justice*, Vol. 7 (1986), pp. 189-250

adaptability are the social characteristics, and they are the general background against which criminals must be viewed. Family structures and relationships, peer-group relations, education, and occupational status are related to social factors of crime.

1.2.1 Geographical Factors and Crime

Early observers had noted the geographic factors for the crime occurrence. Breckeridge and Abbott⁴³ published a study showing the geographical distribution of juvenile delinquency cases in the city of Chicago. Susan J. Smith says Urban-rural differences are the most significant factors in the geographic distribution of crime.

1.2.2 Demographic Factors and Crime

Demography is about the population growth and change. It includes age structure of population, fertility and mortality patterns, migration and mobility patterns, and the ethnic composition of society. The relative proportion of males to females in the population, race, age or sex is also linked to actual crime rates. Hasenpunsch⁴⁴ has found that the percentage of young males is a good predictor of crime rates in Canada. Similarly the influence of the age composition of a population on crime rates has generally shown relationship. Fox conducted a more sophisticated study using temporal data in the United States in an attempt to predict crime rates. He found that the proportion of the population (non white) between the age group of eighteen and twenty-one years was significantly related to the violent crime rate.

1.2.3 Economic Factors and Crime

The economic determinist, Karl Marx, advocates that private ownership of property results in poverty which distinguishes those who own the means of production from those whom they exploit for economic benefit, the latter turn to criminal as a result of this poverty. Crime is, at least in part, the result of economic conditions. At an individual level, lack of income creates an inability to maintain an adequate standard of living, and consequently triggers crime as a means to gain income. Lack of income is often the result of unemployment. Unemployment also creates excess leisure. This excess leisure is often spent in socializing with others in similar circumstances or in committing deviant

⁴³ Clinard, M. B. and Abott, D. J. (1973), 'Crime in Developing Countries'. New York: Wiley

behaviour. As might be expected, most persons who commit the ordinary or index crimes, come from low socio-economic backgrounds. This is particularly true for younger offenders.

1.2.4 Opportunity Factors and Crime

Crime is not caused by a single factor. Traditionally crime is related to socio economic or socio demographic variables. For a crime to occur there must be both an individual who wants to commit an offence and an opportunity to commit that offence. Mayhew describes “opportunities that attach to the properties of objects involved in crime” and present four characteristics that help to show how opportunity and crime are related. The abundance of goods: As more goods enter into circulation, more goods are available to be stolen. The physical security of goods: As objects are made more secure, they are more difficult to be stolen; conversely, insecure goods may be stolen easily. The level of surveillance: Opportunities for crime are mediated by surveillance; high levels of supervision provide some protection. The occasion and attraction for crime: For a crime to occur there must be a moment in time and space when the crime can happen. Insecure cars, even with the keys left in the lock will not create a crime. A person who wants to steal a car must come across the insecure car. Therefore crime can be considered in a cultural or social content as well as in a legal content.

1.3 The present study

Thus it is obvious from the above survey that most of the studies are from outside India. It is the late 1990s and early 2010s which saw some important work on geography of crime in India. But due to their narrow coverage, lack of statistical strength and lack of spatiality, only offender oriented study not victim has been the limitations of these studies. (Chakraborty 2004)⁴⁵ The present study will explore some important aspects of crime like age, time, sex, place and relation between victim and offender and will try to explain different vulnerability settings of crime. Delhi is primarily inhabited by the people from

⁴⁵ Chakraborty. N. K. (2004), ‘*Restorative Justice and Role of Judiciary*’, Paper presented in 1st International and 5th biennial Conference 18-20 Nov. 2004 Tirunelveli

surrounding states hence most of the immigrants in Delhi are cut off from both the cultures of the origin as well as destination. It results into the stress and increase the likelihood of violence.

Rapid urbanization in India faster urban growth especially in metropolitan cities and high crime rates therein is noticeable and proved. Delhi the capital of India is almost a perfect example in this regard. This work is done at two levels-state level and district level. This work is perhaps the first work on National Capital Region of its nature. This study will also focus on the changing nature of crime in urban areas vis a vis the crime in areas of rural nature. Apart from seeking different aspects of the spatio-temporal distribution of various types of crimes, this study also aims to find out the socio-economic correlates of crimes. Present study perhaps would be the first detailed study of urban crime in India in post liberalization period especially after year 2000, the real economic boom period. This would be the attempt to find out a general theory of determinants of urban crime. It will be interesting to find out the determinants of urban crime in Delhi with large number of socio-economic variables.

1.4 Objectives

- To examine the spatial pattern and temporal variation of various crimes in India and Delhi-NCR.
- To evaluate the incidence and prevalence rates of crimes in Delhi-NCR and finding out the patterns of incidences and prevalence rates.
- To find out the relationships and determinants of the changing nature of crimes in Delhi NCR.
- To analyze the changing nature of crimes in Delhi-NCR (i.e. the age, sex, time and place, type and relational aspects of crimes etc) with help of content analysis of news papers.

1.5 Hypothesis

On the basis of the survey of literatures done above following hypotheses can be drawn:

- Higher the urban population to total population, higher the crime rate
- Higher the sex ratio, lower the crime rate
- Rate of unemployment is directly related to crime rate
- Higher the share of young population in total population, higher the rate of crime
- Greater the economic development in the area, higher the crime rate especially crimes against property

1.6 Research Question

How do the different crimes intersect with the geographies of social, economic, and demographic characteristics of the area?"

Sub-Questions

- Do certain types of crime cluster together spatially?
- What are the variables that determine the crimes rates?
- What is the most vulnerable section of the society?

1.7 Data Base

1. Crime In India, National Crime Record Bureau (2001-2009)
2. Census of India , 2001
3. Times of India 2009 (January, June and September)

1.8 Methodology

First of all it is important to locate Delhi among other states of India so that it can be showed that Delhi is one of the most crime prone states in India. So a comparative study is needed. A spatio-temporal study of various crimes in India (state-wise) and NCR is done

for this. A temporal study of all cognizable crimes in India and Delhi clarifies that what types of crime are emerging out in recent years.

Number of incidences is not considered a better measure to understand the nature of crimes; hence crime rates per lakh population and crime concentration is calculated. This will be clearer when these crimes will be mapped out. Along with this a location quotients (concentration) of these crimes both by area and crime will help to understand the true picture of distribution.

1.8.1 Measuring Crime

1. **Crime rates:** Standardized for population “at risk” and modified by a constant to improve understanding (crimes per 100,000). This will solve the denominator problem and modifiable areal unit problem like low population in a large area distorts the rate.
2. **The Crime Concentration**
 - An adaptation of the **location quotient** to the study of crime provides a risk estimator not dependent on an uncertain population at risk. It solves the “denominator problem”
 - Crime Concentration Index (CCI) is based on the comparison between the mix of recorded offences in a specific area and the mix of offences in a broader area
 - Provides a relative concentration index based on the total distribution of crime
 - Values less than 1.0 indicate crime is less concentrated in that area and values greater than 1.0 indicate crime is more concentrated in that area. It can be read as a percentage also.

It would be most important to find out the relationships and identify the determinants of the crimes. I shall take only those crimes which have emerged in recent years with considerable increase and the high crime prone areas. So a Regression Analysis of the dependant variable crime rate and independent socio-economic variables will reveal the determinants of crime in the area.

Regression analysis involves the following variables:

- The **unknown parameters** denoted as β ; this may be a scalar or a vector.

- The **independent variables X**.
- The **dependent variable, Y**.

A regression model relates Y to a function of X and β .

$$Y \approx f(X, \beta)$$

A linear regression model is represented like this-

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n$$

Variables for regression analysis:

- Population density of the area
- Urbanization
- Sex ratio
- Literacy
- Percentage of houseless population to total population
- Percentage of migrant population to total population
- Work participation ratio
- Dependency ratio
- Unemployment
- Percentage of young male population to total population
- Percentage of non working population seeking employment to total population
- Percentage of Scheduled Caste population to total population

But crime rates also depend upon Deterrence Effect for example-

- Number of policemen per 1 lakh population,
- Number of IPC cases per civil policeman,
- Number of arrests
- Charge sheets filed as percentage of cases investigated,
- Conviction rates,

- Unit cost per civil policeman
- Support of transport vehicles and wireless equipments
- Percent cases disposed/ pending by police and courts

In the last, content analysis of the most read news paper in Delhi will also help in understanding the nature and trend of crimes. It also helps to locate the high crime prone areas with different attributes like age & sex of the offender and victim, motive behind crime, timing of the crime, place of the crime, relationships between victim and offender etc which is not possible through the study of crime only on the basis of Crime in India, NCRB.

1.9 A Brief about the Area of the Study

The National Capital Region (NCR) in India is a name for the conurbation or metropolitan area which encompasses the entire National Capital Territory of Delhi as well as urban areas ringing it in neighboring states of Haryana, Uttar Pradesh and Rajasthan. With a total area of about 33,578 km² (12,965 sq mi), it is the world's second largest urban agglomeration. The concept of National Capital Region was mooted in first master plan of Delhi, notified in 1962. The aim of the concept was to develop a metropolitan area around Delhi, so as to divert increasing pressure of population from the region. The concept was essential in order to protect Delhi's infrastructure from excessive pressure and a planned development of the region.

National Capital Region (NCR) is one of the first experimented Regions of the country. It is a unique example for inter-state regional development planning for a region with Nation Capital as its core. The National Capital Region as notified covers an area of about 33,578 sq kms falling in the territorial jurisdictions of four State Governments namely, National Capital Territory of Delhi, Haryana, UP, and Rajasthan. It is one of the largest National Capital Region of the World and constitutes about 1.60% of the country's land area; about

86% of the total area of Kerala State and its area is more than the combined area of three States of Tripura, Nagaland and Sikkim.

NCR is characterized by the presence of highly ecologically sensitive areas like extension of Aravalli ridge, Forests, Wild life and Bird sanctuaries, rivers Ganga, Yamuna and Hindon, fertile cultivated and is a dynamic rural-urban region being the home of 371 lakhs people living in 108 towns of which 17 are class I cities and more than 7500 rural settlements. Four states are participant in National Capital Region (NCR) of India. These are:

The four constituent Sub-Regions of NCR are given below:

- The Haryana Sub-Region comprises of nine districts, that is, Faridabad, Gurgaon, Rohtak, Sonapat, Rewari, Jhajjhar, and Panipat together constituting about 40% (13,413 sq. kms.) of the Region;
- The Uttar Pradesh Sub-Region comprises of five districts, that is, Meerut, Ghaziabad, Gautam Budha Nagar, Bulandshahr, and Baghpat together constituting about 32% (10,853 sq. kms.) of the Region;
- The Rajasthan Sub-Region comprises of Alwar district constituting about 23% (7,829 sq. kms.) of the Region ; &
- The NCT of Delhi constituting about 5% (1,483 sq. kms.) of the Region.

Area-wise contribution of participating states in the NCR:

S. No.	Constituent	Area (in sq. kms)
1.	NCT-Delhi Sub-region	1,483
2.	Haryana Sub-region	13,413
3.	Rajasthan Sub-region	7,829
4.	Uttar Pradesh Sub-region	10,853
5.	Total (National Capital Region)	33,578

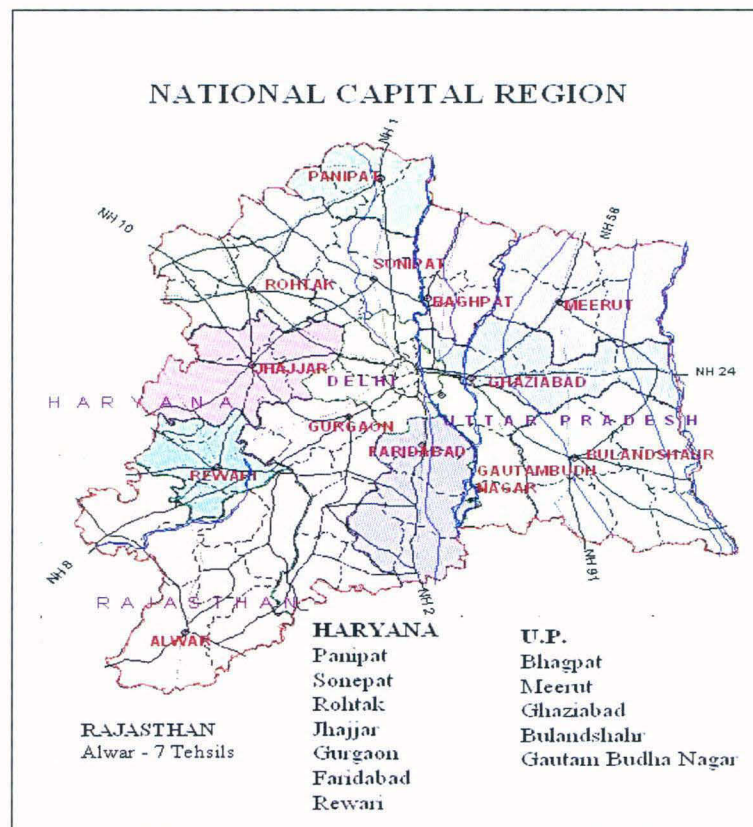
NCT Delhi

The National Capital Territory of Delhi lies central to the National Capital Region. It includes the city of Delhi and New Delhi, the seat of India's central government. This region has largest concentration of population in whole of the NCR. The population of Delhi as of 2001 census is 13,782,976 persons.

Aims and Objectives

The Plan aims to promote growth and balanced development of the whole region through providing economic base in the identified major settlements (Metro Centers/Regional Centers) for absorbing economic development impulse of Delhi, efficient transport network, development of physical infrastructure, rational land use pattern, improved environment and quality of life.

Figure 1. National Capital Region



Source: Map of India

Rationale

National Capital Region (NCR) is a unique example of inter-state regional development planning for a region, having a total area of over 33500 Sq Kms spanning over 15 districts in the states of U.P, Haryana, and Rajasthan and National Capital Territory of Delhi, with the Nation Capital as its core. The National Capital Region (NCR) in India was constituted under the NCRPB Act, 1985; the key rationale was to promote balanced and harmonized development of the Region, *and to* contain haphazard and unplanned urban growth by channelizing the flow and direction of economic growth (on which the urban phenomenon feeds) along more balanced and spatially-oriented paths.

1.10 Format of the Dissertation

Present study is divided into five chapters. First chapter is introductory in nature includes literature survey, theorization of crime, objectives of the study, research questions, data base, methodology and a brief about the area of the study. This part of the dissertation tries to situate the current study vis a vis the earlier studies. How the study will proceed is discussed with detail in methodology.

Second chapter is a comparative study of crime in India and NCR. Second chapter is also divided into two parts- first state wise distribution and growth pattern of crime, secondly-a district wise study of crime in NCR. First of all an effort is made to place Delhi-NCR in a proper frame. In order to understand the nature of crime all cognizable IPC crimes were divided into 3 categories namely crime against body (CAB), crime against property (CAP) and crime against women (CAW) as per the NCRB classification. A spatio-temporal analysis of crime state wise is done. This includes the distribution of crime incidences, crime rates and the share of different types of crime over three time periods-2001, 2005 and 2009. It is tried to find out any pattern of crime distribution and support it with literature.

Third chapter of the dissertation is an effort to find out the determinants and relationships between various socio-economic and deterrence variables and crimes. Firstly different socio-economic variables are selected on the basis of their relationship with crime. Correlation and regression analysis is done in order to find out the determining factors of

crime. Afterwards some deterrence variables are selected for the study but the focus is on Delhi only.

Fourth chapter is the study of different aspects of crime with the help of content analysis of news paper. Since the data provided by 'Crime in India' does not cover the number of crime aspects, a content analysis of the most read news paper will be helpful in understanding the nature of crime in NCR. The data of 'Crime in India' do not show the place of crime i.e. whether it happened within the house premise or outside. It does not give any detail about the age of victim and offender, sex of the victim and offender. It does not give any information about the relationship between victim and offender. Moreover it does not give any clue about the motive behind the crime. It does not give the timing of the crime incidence i.e. whether it happened in the broad day light or evening or morning or late night. It does not give monthly data of crime. But data collected from news paper gives all these details at the same time. In this chapter five aspects of crime is covered- place, time, age and sex of victim and offender and relationship between victim and offender. In order to cover the seasonal variation, 3 months were selected for the study namely January, June and September.

A summary of the study and findings is discussed in the last chapter keeping the objectives and hypotheses in mind. In the last the list of bibliography and references is given.

1.11 Limitations of the study

Studying crime in India has many limitations. First of all the National Crime Records Bureau does not publish crime data below district level hence many minute but important aspects of crime cannot be studied well. NCRB does not publish crime data with aspects like place of crime, time of the crime, age and sex of victim and offender, motive behind the crime and relationship between victim and offender. News paper reports have only highlighted sensational cases hence we just can't study the seriousness of the crime depending totally upon content analysis of newspaper. Moreover news paper reporting is not completely reliable in the sense that sometimes many information are not given such as age of the offender. Many scholars have fingered at the underreporting and manipulation of the data especially crimes against women go unreported and underreported to a large

extent not only because a social stigma is attached but due to the influence of male side also. Cases like dowry deaths are not reported and generally said to be a suicide or accidental deaths. Rape is perhaps most underreported crime due to social stigma attached to it. Kidnapping and abduction cases are treated as missing persons unless it is not confirmed that a ransom is being demanded. Moreover there is huge manipulation of data in order to restore confidence in the public and to project a positive image of the state and government.

CHAPTER-2

SPATIO-TEMPORAL DISTRIBUTION OF CRIME IN INDIA & DELHI-NCR

2.1 Introduction

Contemporary change in urban structure like newer lifestyles affected the thinking of newer generations. But the freedom to choose new lifestyles is severely constrained to some sections of the urban society (white 1998)¹. This brought the real contrast in the social groups as with unstable employment coming with the close combination with the growing groups of high skilled well paid tertiary and quaternary employment. Now power structure of the society has been changed.

The purpose of this chapter is to provide a broad picture of crime situation at national level, so that the area of the study can also be situated in the framework. Delhi has often been cited as the crime capital of India by popular media, it is hence the matter of the concern for the academic world. Firstly a classification of crime will be done in order to frame the study. A state wise distribution incidences and rates of different crimes over the three time periods 2001, 2005 and 2009 will help in understanding the changing pattern of crime and nature of crime as well. Crime concentration will be calculated to show the spatial clustering of specific crimes. Third part of this chapter is devoted to the distribution and growth pattern of crime in National Capital Region with a district level analysis. In the last a comparison between India and NCR, NCT and NCR will not only help in the locating study area in India but also help in understanding the difference between rural and urban crime to some extent because on one hand NCT is entirely urban in nature, on the other hand NCR excluding NCT is almost half rural half urban. So there can be a proposition here that the nature of crime would be different in NCT than in NCR.

¹ White. P. (1998). 'Social Inequalities and Urban Restructuring'. Geo Journal. 46: 1-5

2.2 Definition of crime

Every society has certain rules, norms and approved patterns of conduct for its members. Breaches of these patterns is not accepted or taken as anti social, deviant behaviour and some kind of punishment is there. But only those anti social behaviour are considered as crime for which a punishment is prescribed by the law (Thouless 1960)². According to Paul Tappan, “crime is an intentional act or omission in violation of criminal law (statutory and case law) committed without defense or justification, and sanctioned by the state as a felony or misdemeanor” (Paul Tappan 1960)³. “Crime is an act of violation of law, and criminal is a person who does an act in violation of law” (International Encyclopedia of the Social Sciences). Thus we can say that all anti social behaviours are not classified as crime. In different countries and societies, there are different conceptions of crime. Social conception of crime varies according to the conventions of the particular society. A law enacted today may find it against the interest of society after experience. The law will be changed and thus what is criminal today may not be criminal tomorrow. (Jayamala, 2008)

2.3 Crime Classification

In India, the Criminal Procedure Code divides crimes into two heads:

- 1. Cognizable**
- 2. Non-cognizable.**

In the case of cognizable crimes, the police have the responsibility to take prompt action on receipt of a complaint or of credible information. This action constitutes visiting the scene of crime, investigating the facts, apprehending the offender and producing the offending persons before the appropriate court of law. Cognizable crimes are again sub-divided into two categories:

- **Indian Penal Code (IPC) crimes,**
- **Special and Local Laws (SLL) crimes**

² Thouless Robert. H. (1960), ‘General and Social Psychology’, London: London University Press Ltd. 1960

³ Paul Tappan, *Crime, Justice and Correction* (New York: McGraw Hill, 1960), p. 10

Non-cognizable crimes, on the other hand, are left to be pursued by the affected parties themselves in Courts. The police force initiates investigation into such crimes except with magisterial permission.

2.3.1 Classification of Crimes under the IPC

- 1) **Crimes Against Body:** Murder, Its attempt, Culpable Homicide not amounting to Murder, Kidnapping & Abduction, Hurt, Causing Death by Negligence
- 2) **Crime Against Property:** Dacoity, Its Preparation & Assembly, Robbery, Burglary, Theft
- 3) **Crime Against Public Order:** Riots, Arson
- 4) **Economic Crimes:** Criminal Breach of Trust, Cheating, Counterfeiting
- 5) **Crime Against Women:** Rape, Dowry Death, Cruelty by Husband and Relatives, Molestation, Sexual Harassment, Importation of Girls
- 6) **Crime Against Children:** Child Rape, Kidnapping & Abduction of Children, Procurement of Minor Girls, Selling/ buying of Girls for Prostitution, Abetment to Suicide, Exposure and Abandonment, Infanticide, Foeticide
- 7) **Other IPC crimes.**

For the present study, only following categories have been taken for analysis:

- Crime Against Body (CAB)
- Crime Against Property (CAP)
- Crime Against Women (CAW)

These above categories constitute almost 70% of total cognizable IPC crimes. Delhi has been one of the most crime prone states in India. Although it has managed to control the crime to a large extent in recent years, still one of the top most crime destinations.

2.4 Crime Incidences and Crime Rates in India

National Crime Records Bureau has categorized the cognizable IPC crimes into 6 categories but for present study, only those crimes are taken falling under CAB, CAP and CAW under Indian Penal Code. This study is based only on IPC cognizable crimes so that state specific

distortion of crime incidences can be avoided, because if SLL (Special Local Laws) crimes are also included then there are some states which experience higher SLL crimes. Moreover IPC crimes are applicable at all India level uniformly. Three years are selected for the crime data-2001, 2005 and 2009 in order to show temporal variation of crime. A state wise spatial-temporal distribution of crime is shown for the years 2001, 2005 and 2009.

Pattern of crime in any area is not a random phenomenon. For example in the context of India, it has been observed that cultural legitimization of violence is also one of the reasons for the pattern of high violent incidences (Koenig 2006)⁴. As we see that the share of property is largest. Many sociologists postulated that some aspects of social structure like unemployment and inequality contribute to rise in property crime (Krohn 1976; Farral and Bowling 1999)⁵⁶.

Looking at the state level distribution, it is obvious that generally bigger states will have more crimes than the states smaller in population size. Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh, Andhra Pradesh, Rajasthan, Karnataka are at top whereas North-Eastern states, hilly states are at bottom. But number of crime incidences do not depend only upon population size, it also depend upon other things like population density, urbanization, level of education, social structure, demographic composition etc. that is why we see some states having high crime incidences although they are having lesser population like Delhi and Kerala.

But when we look at Crime rates a different picture is emerging. Since the number of incidences does not tell the real situation of crime, it is important to look at the crime rates because it removes the shortcoming of the population size. For standardization, crime in this study is calculated per lakh population. After the calculation of crime rates it is found that many smaller states has come up to the front such as Pondicherry, Delhi, Chandigarh,

⁴ Koenig. M.A. (2006), 'Individual and Contextual Determinants of Domestic Violence in India'. *American Journal of Public Health*. 96(1): 132-168

⁵ Krohn. M. D. (1969), 'Inequality, Unemployment and Crime: A Cross National Analysis' *The Sociological Quarterly* 17(3): 303-313

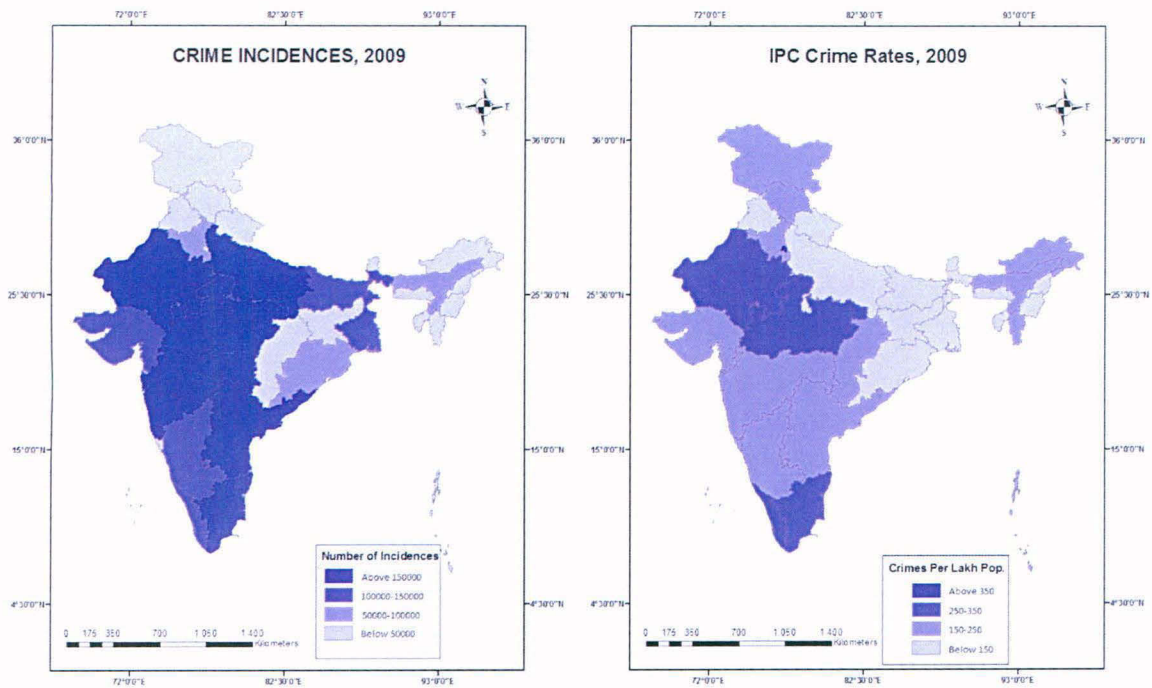
⁶ Farral. G. (1995), 'Like Candy: Why does Repeat Victimization occur?' *The British Journal of Criminology* 39: 253-268

Kerala, Mizoram etc. But still some bigger states like Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Rajasthan, Maharashtra etc have very high growth rates. When we see the top 5 most crime prone states over the period 2001 to 2009 we found that Chandigarh, Delhi, Kerala, Pondicherry and Madhya Pradesh have been at top, Whereas Nagaland, Uttar Pradesh, Meghalaya, Lakshadweep and West Bengal has been at bottom. Among the top five states, Pondicherry, Delhi and Chandigarh are totally urban states in nature and moreover they have very high density of population and literacy, cultural heterogeneity (especially in case of Delhi), hence not only the high probability of crime occurrence but also the better reporting is there. And these all must have bearing on the crime for sure as number of studies approved such conditions responsible for high crime rates (Wolfgang 1972, Herbert 1987, Natrajan⁷ 2002 etc). Kerala has very high literacy and population density and literature showed that better reporting is one the most important reason behind the high crime rate in Kerala.

Scholars have raised questions about the underreporting of crime. For example media says that crime rate is very high in states like UP and Bihar but according to NCRB both states are having moderate crime rates below national average over the period (2001-2009). If we exclude some north eastern and union territories for the simple reason that the socio-political and economic conditions are not comparable with the bigger states, then we find that some states like Delhi, Rajasthan, Madhya Pradesh and Andhra Pradesh are consistently reporting higher crime incidences.

⁷ Natrajan. M. (2002), 'Domestic Violence among the Immigrants from India: What we need to know and what we should do', *International Journal of Comparative and Applied Criminal Justice*. 26(2): 301-321

Figure 2.1 A comparison between Crime Incidences and Crime Rates in India



Source: Crime in India 2009, NCRB

Number of crime incidences depends upon two things- firstly real crime incidence and secondly reporting of the crimes. Because there are regions where underreporting as well as misreporting is very common and huge and there are states showing good reporting. Under reporting depends upon many factors like social stigma attached to some crimes, fear of police and judicial complexities afterwards, police tendency of less reporting for showing their good control over crime in the area, political pressure, level of education, lack of awareness among people. Along with economic factors there are many other factors behind crimes. It has been argued that areas which are densely populated have a tendency to attract higher deviant activities as these areas are crowded without a sense of space amongst individual making it easier to perpetrate criminal acts (Shaw and MacKay 1942, Bhushan 1997)⁸ similarly some areas may be disproportionately populated by women increasing

⁸ Bhushan. P.S (1997). *Crime, Criminology and Society*. New Delhi, Manish Publication

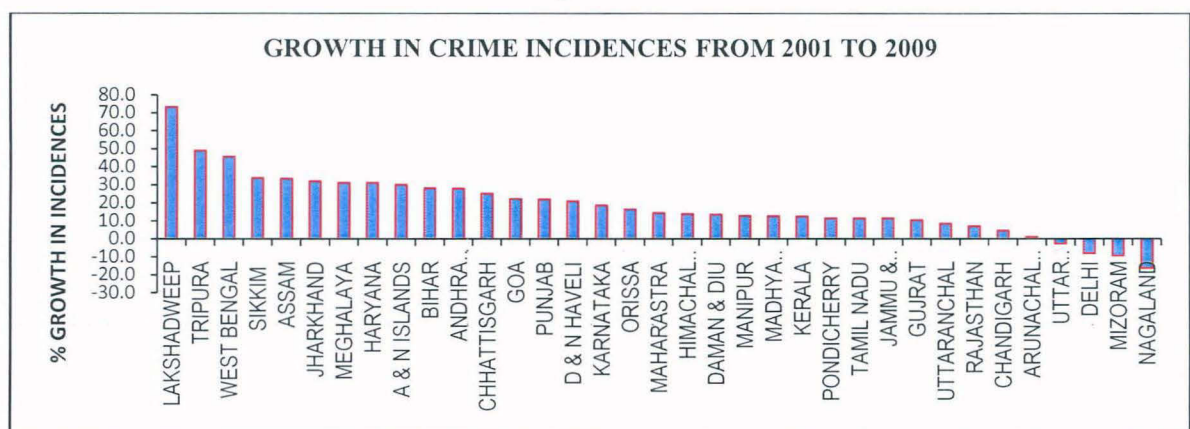
target availability in one place so that offenders have to put in their least effort in committing crimes.(Morris 1958, Herbert 1977) another connected analogy emerging is that women are not safe at the hands of their acquaintances and elderly are more prone to victimization as they stay at home mostly.(Nandini 2006)⁹.States like Delhi and Kerala experience higher crime incidences perhaps due to both the higher occurrence and good reporting since they are well urbanized, having very high education level and awareness especially among women.

2.5 Growth in Crime Incidences

When we look at the growth in crime incidences we find that backward and smaller states like Lakshadweep, Tripura, Sikkim, West Bengal, Assam, Jharkhand, Meghalaya, Haryana, Bihar, Andhra Pradesh, Chhattisgarh and Andaman & Nicobar Islands are have shown highest growth rates. Faster economic growth, uneven economic distribution, urbanization, awareness to report the crime, rapid changes in the social structure etc could be the reasons behind this growth. At all India level 16.6% growth is recorded over this period.

Number of crime incidences has gone up in this period for all India (by 16.6%) as well as for all the three categories (CAB, CAP & CAW). There are only four states showing decline in crime incidences like Uttar Pradesh, Mizoram, Delhi and Nagaland over this period.

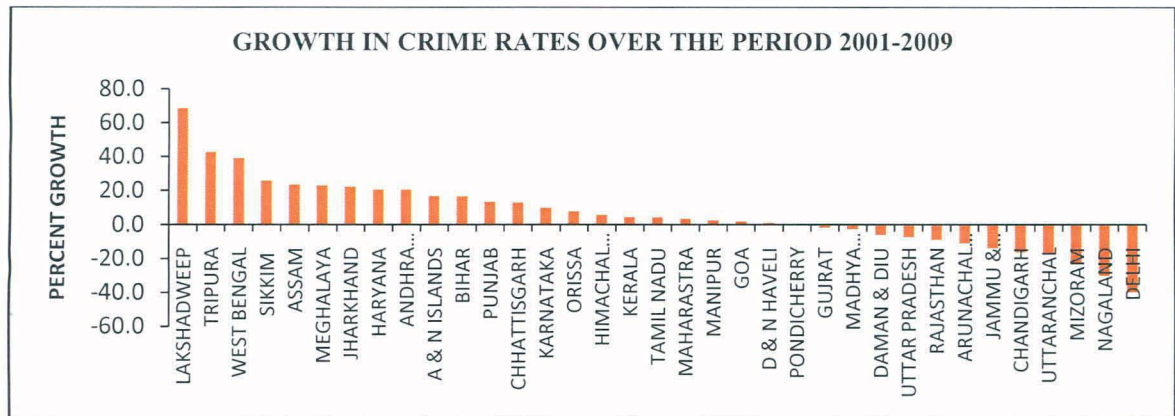
Figure 2.2



Source: Crime in India, 2001 to 2009, NCRB

⁹ Nandini. (2006), *Social Space and Crime in Delhi*. Unpublished Dissertation submitted to Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

Figure 2.3



Source: Crime in India, 2001-2009, NCRB

But when talking about the growth rate of crime rates, a slightly different picture emerges because we find thirteen states showing decline in their rates of crime whereas earlier we saw that only four states have shown decline in the growth of incidences, so this implies that number of crime per lakh population has gone down for more states. That means many states have controlled the crime rate over this period. But this is not true because crime incidences have gone up but slower than the increase in population hence crime rate has gone down. Important thing to note is this that Delhi have second highest crime rate in India but it has showed maximum decline in the growth of crime rate in the last ten years. Thus Delhi's showing decline in both crime incidences as well as crime rate.

Overall crime rates in India have been moderate. Many scholars have proposed the as countries develop, crime and delinquency rates also increase (Cinnard and Abott¹⁰ 1973, Shelley¹¹ 1981). Some most of the advanced states in India have higher crime rates are supported by this proposition. It is proved many times that more urban and more developed states have higher crime rates (Schwendinger and Schwendinger 1985)¹². Tamil Nadu, Delhi, Chandigrh, Maharastra and Goa share high percent of urban population so it may

¹⁰ Clinard. M. B. and Abott. D. J. (1973), 'Crime in Developing Countries'. New York: Wiley

¹¹ Shelley. I. Louise (1980), *Crime and modernization*, Southern Illinois University Press pp 5-1

¹² Schwendinger. J.R. and Schwendinger. H. (1983), *Rape and Inequality*, Beverly Hills Sage Publications

have bearing on higher crime rates in these states (Hartgen 1982)¹³. Moreover higher crime rates can be an outcome of better reporting, hence higher crime rates in Kerala and Tamil Nadu may be due to this as they have very high literacy.

2.6 Share and Rates of Different Crime Categories

Share of above mentioned three categories of crime to total IPC crimes has been changing. At India level the shares of CAB and CAP have almost been static but the share of CAW has gone up significantly (almost 22%). Among states Delhi has been one of the top most states those have shown increasing share, especially for crime against women over this period. Smaller and comparatively backward states like Lakshadweep, Meghalaya, Sikkim, Manipur, Daman Diu, Dadra & Nagar Haveli, Mizoram, Andaman and Nicobar Islands showed highest growth rate in the share of CAB, CAP and CAW to total IPC crimes. Why the share of crime against women to total IPC crimes is going up? Literatures are saying that there can be two reasons behind this increase: reporting of the crimes against women is improving on the other hand number of crime incidences are also increasing day by day. These both things are happening perhaps due to greater awareness among women about their rights, their freedom, and lesser dependency on males. Social stigma attached to the crime is weakening; women are challenging the patriarchal structure hence in turn receiving more crime against them. Perhaps these are the reasons behind the drastic increase of cruelty husband & relatives. Domestic violence Act, 2005 could also be the reason behind greater reporting as it has defined the wide area of domestic violence. Government's effort in advertising the anti domestic violence awareness, efforts of Civil Societies and NGOs, greater access to internet, TV etc could have caused the more crime reporting. Crime incidences may not be increasing but reporting of crime is increasing for sure. Crimes against women have been very high in the past also but underreporting was also very high at the same time.

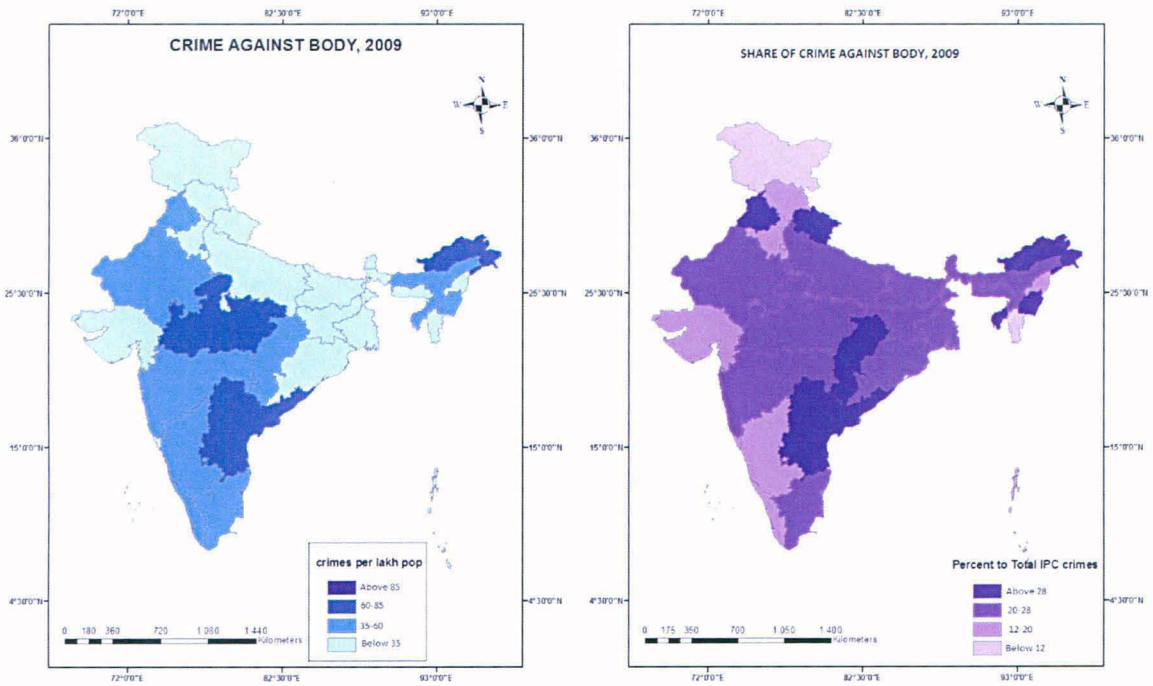
¹³ Hartgen. C.A. (1983), 'Delinquency, Development and Social Integration in India'. *Social Problems*. 29(5): 464-473

Table 2.1

CHANGES IN THE SHARE OF CAB, CAP, CAW TO TOTAL IPC COG_ CRIMES, INDIA				
YEAR	CAB	CAP	CAW	TOTAL IPC CRIMES
2001	23.9	21.6	6.6	100
2005	23.6	21.3	7.0	100
2009	22.5	21.0	8.0	100

Source: Crime in India, 2001-2009, NCRB

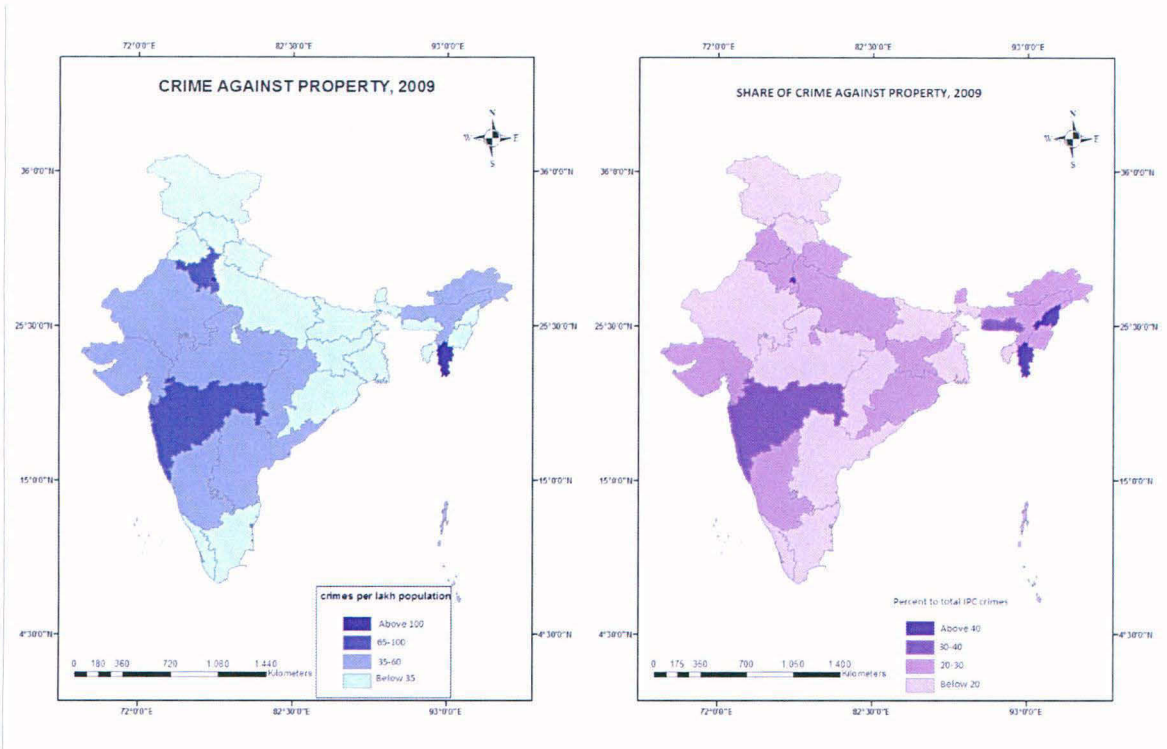
Figure 2.4 Rate and share of Crime against body, 2009



Source: Crime in India 2009, NCRB

Above figure shows the rate and share of crime against body. It's clearly visible that Andhra Pradesh and Arunachal Pradesh are at top in both the cases. While the states like Uttar Pradesh Uttaranchal, Bihar, Orissa, Jharkhand have low crime rate against body but high share due to large population base.

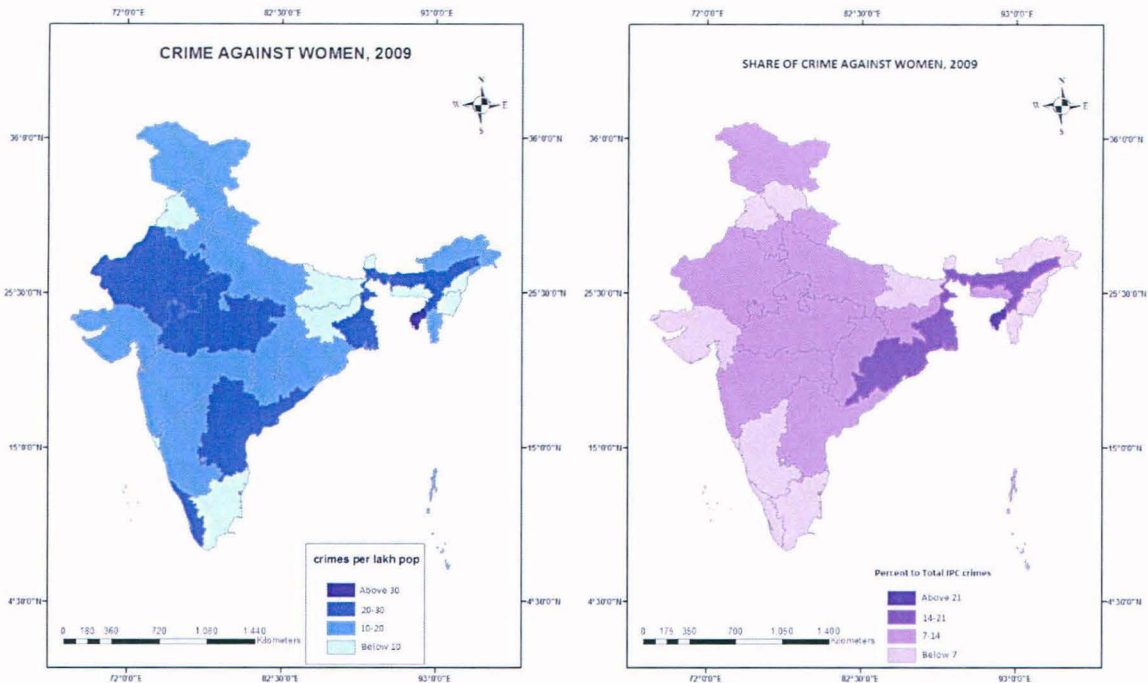
Figure 2.5 Rate and share of Crime against Property, 2009



Source: Crime in India 2009, NCRB

Many scholars postulated that property crimes are always very high in urban areas than rural; we found that in India it is also true similarly. States like Delhi, Chandigarh, Haryana, Pondicherry, Gujrat, Goa and Maharashtra which are one of the most urbanized states in India and economically advanced providing the opportunity for property crimes are on the top in terms of crime against property. Some other states like Mizoram, Arunachal Pradesh, Andaman and Nicobar Islands, Madhya Pradesh are also having high crime rates against property. High income inequality in these states may have bearing on the property crime.

Figure 2.6 Rate and share of Crime against Women, 2009



Source: Crime in India 2009, NCRB

Many scholars studied about the gendered nature of crime. In a study conducted in north India factors like intergenerational transmission of violence found to be associated with women violence. It is important to mention here that Madhya Pradesh and Rajasthan both are at the bottom in terms of female education, so a higher crime rate in these states may be due to the presence of community environment of violence and higher vulnerability due to low literacy (Natrajan 2002, Koenig 2006)¹⁴.

Following table is showing the position of states according to four categories of crime rates-

- Below 100
- 100 to 200
- 200 to 300

¹⁴ Koenig, M.A. (2006), 'Individual and Contextual Determinants of Domestic Violence in India'. *American Journal of Public Health*. 96(1): 132-168

- Above 300

Number of states falling under the first and last category is reduced in this period and only 4 states are falling in the last category in 2009 instead of 8 both in 2001 and 2005 but number of states in third category (200 to 300) is increased from six (in both 2001 and 2005) to twelve in 2009 and this could be the reason why crime rate at all India level has also gone up slightly this period (India's crime rate from 172 per lakh population in 2001 to 181 in 2009, Crime in India, 2009, NCRB).

Table 2.2 Changes in Crime Rates over the period 2001-2005-2009

CHANGES IN CRIME RATES OVER THE PERIOD OF 2001-2005-2009					
STATES	RATE-2001	STATES	RATE-2005	STATES	RATE-2009
PONDICHERRY	418	PONDICHERRY	443	PONDICHERRY	419
DELHI	395	DELHI	356	KERALA	342
CHANDIGARH	377	CHANDIGARH	314	CHANDIGARH	324
KERALA	326	KERALA	313	MADHYA PRADESH	293
MADHYA PRADESH	301	MADHYA PRADESH	287	DELHI	283
RAJASTHAN	275	TAMIL NADU	250	TAMIL NADU	260
MIZORAM	252	RAJASTHAN	229	RAJASTHAN	252
TAMIL NADU	249	MIZORAM	228	HARYANA	232
ARUNACHAL PRADESH	215	KARNATAKA	211	KARNATAKA	230
KARNATAKA	207	GUJRAT	209	A & N ISLANDS	223
GUJRAT	204	ARUNACHAL PRADESH	199	ANDHRA PRADESH	217
JAMMU & KASHMIR	194	ANDHRA PRADESH	197	CHHATTISGARH	213
HIMACHAL PRADESH	189	HIMACHAL PRADESH	194	MIZORAM	206
CHHATTISGARH	185	CHHATTISGARH	193	HIMACHAL PRADESH	201
A & N ISLANDS	185	HARYANA	187	GUJRAT	201
HARYANA	184	MAHARASTRA	181	ARUNACHAL PRADESH	194
MAHARASTRA	177	D & N HAVELI	178	LAKSHADWEEP	189
GOA	174	JAMMU & KASHMIR	177	MAHARASTRA	184
ANDHRA PRADESH	172	A & N ISLANDS	176	ASSAM	181
D & N HAVELI	159	ASSAM	146	GOA	178
DAMAN & DIU	151	GOA	141	JAMMU & KASHMIR	170
ASSAM	138	DAMAN & DIU	139	D & N HAVELI	161
ORISSA	127	ORISSA	133	TRIPURA	154
PUNJAB	114	JHARKHAND	122	DAMAN & DIU	142
BIHAR	107	MANIPUR	115	ORISSA	138
UTTARANCHAL	107	BIHAR	109	PUNJAB	132
MANIPUR	104	PUNJAB	105	BIHAR	128
JHARKHAND	95	TRIPURA	99	WEST BENGAL	127
UTTAR PRADESH	95	SIKKIM	96	JHARKHAND	123
TRIPURA	88	UTTARANCHAL	88	SIKKIM	111
SIKKIM	82	WEST BENGAL	78	MANIPUR	107
WEST BENGAL	77	MEGHALAYA	77	MEGHALAYA	95
MEGHALAYA	73	UTTAR PRADESH	67	UTTARANCHAL	91
NAGALAND	62	LAKSHADWEEP	65	UTTAR PRADESH	88
LAKSHADWEEP	59	NAGALAND	50	NAGALAND	48

Source: Crime in India, 2001-2009, NCRB

Table 2.3 Position of States according to CAB, CAP, CAW (2001-2009)

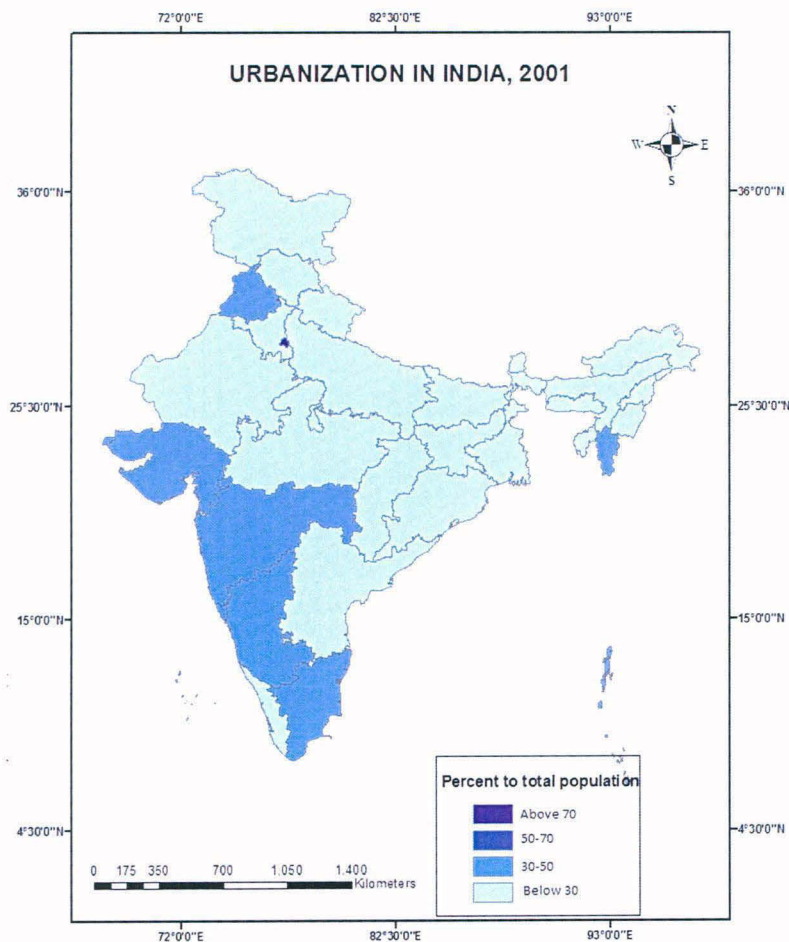
POSITION OF STATES ACCORDING TO CAB, CAP and CAW OVER THE PERIOD 2001-2009					
2001					
TOP 5 STATES	CAB RATE	TOP 5 STATES	CAP RATE	TOP 5 STATES	CAW RATE
PONDICHERRY	88.6	CHANDIGARH	213.1	MADHYA PRADESH	24.1
TAMIL NADU	67.3	DELHI	167.3	ANDHRA PRADESH	21.8
MADHYA PRADESH	67.2	MIZORAM	148.3	RAJASTHAN	21.6
RAJASTHAN	66.7	ARUNACHAL PRADESH	73.2	CHHATTISGARH	19.2
KERALA	66.6	GOA	72.0	KERALA	17.1
BELOW 5 STATES	RATE	BELOW 5 STATES	RATE	BELOW 5 STATES	RATE
MEGHALAYA	16.0	BIHAR	20.0	MANIPUR	4.7
SIKKIM	15.7	WEST BENGAL	20.0	SIKKIM	4.4
WEST BENGAL	11.8	LAKSHADWEEP	18.0	MEGHALAYA	2.9
NAGALAND	11.5	TRIPURA	17.1	NAGALAND	1.5
LAKSHADWEEP	6.6	MANIPUR	14.6	LAKSHADWEEP	0
2009					
TOP 5 STATES	CAB RATE	TOP 5 STATES	CAP RATE	TOP 5 STATES	CAW RATE
PONDICHERRY	111.1	CHANDIGARH	182.9	TRIPURA	42.5
ANDHRA PRADESH	77.2	DELHI	135.4	ASSAM	31.8
MADHYA PRADESH	69.8	MIZORAM	115.3	ANDHRA PRADESH	30.7
ARUNACHAL PRADESH	65.2	HARYANA	74.8	RAJASTHAN	26.2
CHHATTISGARH	59.6	PONDICHERRY	73.2	WEST BENGAL	26.1
BELOW 5 STATES	RATE	BELOW 5 STATES	RATE	BELOW 5 STATES	RATE
UTTAR PRADESH	20.1	BIHAR	22.1	D & N HAVELI	7.3
MEGHALAYA	20.0	WEST BENGAL	21.5	SIKKIM	6.8
JAMMU & KASHMIR	19.6	TRIPURA	20.5	DAMAN & DIU	6.7
CHANDIGARH	14.4	LAKSHADWEEP	19.7	NAGALAND	2.1
NAGALAND	9.5	UTTAR PRADESH	19.0	LAKSHADWEEP	1.4

Source: Crime in India, 2001-2009, NCRB

As many scholars postulated that property crimes are always very high in urban areas than rural, we found that in India it is also true similarly. States like Delhi, Chandigarh, Haryana, Pondicherry, Gujrat, Goa and Maharashtra which are one of the most urbanized states in India and economically advanced providing the opportunity for property crimes are on the top in terms of crime against property. Some other states like Mizoram, Arunachal Pradesh, Andaman and Nicobar Islands, Madhya Pradesh are also having high crime rates against property. High income inequality in these states may have bearing on the property crime.

From the table below it is obvious that most of the states have recorded high growth rates for crime against women but for CAB and CAP, lesser number of states showing growth over the period. This implies that crime against women is going up all over India irrespective of all regions. Delhi shows negative growth rate for CAP and CAB but very high growth rate for CAW. Haryana recorded a very high growth rate which is understandable because it is experiencing very high economic growth due to economic boom in recent years in areas surrounding Delhi. Moreover Delhi's factories and companies are shifting towards neighboring areas.

Figure 2.7



Source: Census of India 2001

States like Madhya Pradesh, Andhra Pradesh, Rajasthan, Chhattisgarh, West Bengal, Kerala, and Tripura are most crime prone states in terms of crime against women. Madhya Pradesh and Rajasthan are states with highly patriarchal society where crime against women is embedded in the culture, Andhra Pradesh, Chhattisgarh and Tripura have very high tribal population hence culture of protest, subculture of violence (Sinha 2000)¹⁵, and women being easy targets etc could have bearing on high crime rates against women. West Bengal and Kerala have better reporting as well as high crime against women so these states have high crime rates against women.

Table 2.4 Growth in Crime Rates 2001-2009 (top 5 and lowest 5 states)

PERCENT GROWTH OF CRIME RATE FROM 2001 TO 2009 TOP 5 and LOWER 5 STATES					
STATES	CAB	STATES	CAP	STATES	CAW
TOP 5		TOP 5		TOP 5	
LAKSHADWEEP	68.8	MANIPUR	40.4	LAKSHADWEEP	100.0
WEST BENGAL	53.6	HARYANA	37.5	WEST BENGAL	68.6
SIKKIM	48.7	PUNJAB	31.7	MEGHALAYA	68.5
TRIPURA	43.8	A & N ISLANDS	31.5	TRIPURA	67.8
CHHATTISGARH	36.8	JHARKHAND	29.5	A & N ISLANDS	55.8
LOWER 5		LOWER 5		LOWER 5	
RAJASTHAN	-23.9	DELHI	-23.5	D & N HAVELI	-17.8
GUJRAT	-26.7	UTTAR PRADESH	-27.2	CHANDIGARH	-21.2
UTTAR PRADESH	-37.9	MIZORAM	-28.7	ARUNACHAL PRADESH	-23.1
CHANDIGARH	-45.1	DAMAN & DIU	-30.6	PONDICHERRY	-25.8
JAMMU & KASHMIR	-96.1	ARUNACHAL PRADESH	-35.9	TAMIL NADU	-81.1

Source: Crime in India, 2001-2009, NCRB

2.7 Crime Concentration

Crime concentration is basically the location quotient which is based on the comparison between the crime in a specific area and the same crime in a broader area. It provides a relative concentration index based on the total distribution of crime. A value greater than 1.0 means crime is more concentrated in that area while a value less than one means crime is

¹⁵Sinha. S.(2000), ' Crime and Violence in India' pp 243-261 in Noble, Thakur, Mukherji and Costa (eds), *Geography and Planning Research Themes for the New Millennium* pp 243-261 New Delhi. Vikas Publications

randomly distributed in that area. Crime concentration index can also be read as a percentage e.g. if value is 1.5 then it can be read as 150 % concentration.

After calculating the crime concentration index for all crime categories (CAB, CAP and CAW) at all India level state wise, it is found that all the three crimes are not randomly distributed throughout the states. Some states have experienced crime clustering in all three years of the study (2001, 2005 and 2009) means some states are clustered (i.e. more than 1.0) in comparison with India whose value is 1.0

Table 2.5 Crime Concentration Index for Crime Against Body

STATES	2001	2005	2009
Andhra Pradesh	1.5	1.6	1.6
Assam	1.3	1.2	1.1
Punjab	1.2	1.4	1.4
Arunachal Pradesh	1.2	1.2	1.5
Tripura	1.2	1.1	1.3
Manipur	1.1	1.3	1.6

Source: calculated from crime in India, NCRB

2.7.1 Crime Concentration Index for Crime Against Body: There are five states which showed concentration throughout all three years i.e. they have high concentration of crime against body as compared to India as a whole. Andhra Pradesh has been at the top throughout the years. Manipur, Punjab and Arunachal Pradesh faced considerable growth in concentration. While Assam showed decline.

2.7.2 Crime Concentration Index for Crime Against Property: There are 14 states which showed concentration throughout the years 2001, 2005 and 2009. This implies that property crime is increasing in many states. Delhi, Haryana and Chandigarh are showing even considerable increase in the concentration in this period. This is quite understandable that these three states are economically developed states and highly urbanized. It is already explained that developed, urbanized areas provide more opportunity for property crime as they are filled up by valuable assets everywhere.

Table 2.6 Crime Concentration Index for Crime Against Property

STATES	2001	2005	2009
Mizoram	2.7	2.7	2.7
Chandigarh	2.6	2.4	2.7
Nagaland	2.1	2.1	2.4
Delhi	2	1.7	2.3
Goa	1.9	1.7	1.9
Meghalaya	1.8	2	1.6
Daman & Diu	1.6	1.8	1.3
Sikkim	1.6	1.5	1.1
Arunachal Pradesh	1.6	1.8	1.3
Maharashtra	1.6	1.6	1.7
Uttaranchal	1.3	1.4	1.2
Haryana	1.2	1.4	1.5
Jharkhand	1.2	1.2	1.3
Dadra & Nagar Haveli	1.1	1.1	1.3

Source: calculated from crime in India, NCRB

Table 2.7 Crime Concentration Index for Crime Against women

STATES	2001	2005	2009
Tripura	2.2	3.4	3.3
Andhra Pradesh	1.5	1.5	1.5
Orissa	1.5	1.4	1.4
Uttar Pradesh	1.5	1.4	1.3
West Bengal	1.4	2.3	2.3
Assam	1.2	1.5	1.7
Uttaranchal	1.2	1.2	1.3

Source: calculated from crime in India, NCRB

2.7.3 Crime Concentration Index for Crime Against Women: Total 7 states showed concentration throughout the years. Tripura has been at the top. Andhra Pradesh once again is at top as was for crime against body. West Bengal and Assam recorded very high growth rate in concentration over the period.

2.8 Crime in National Capital Region

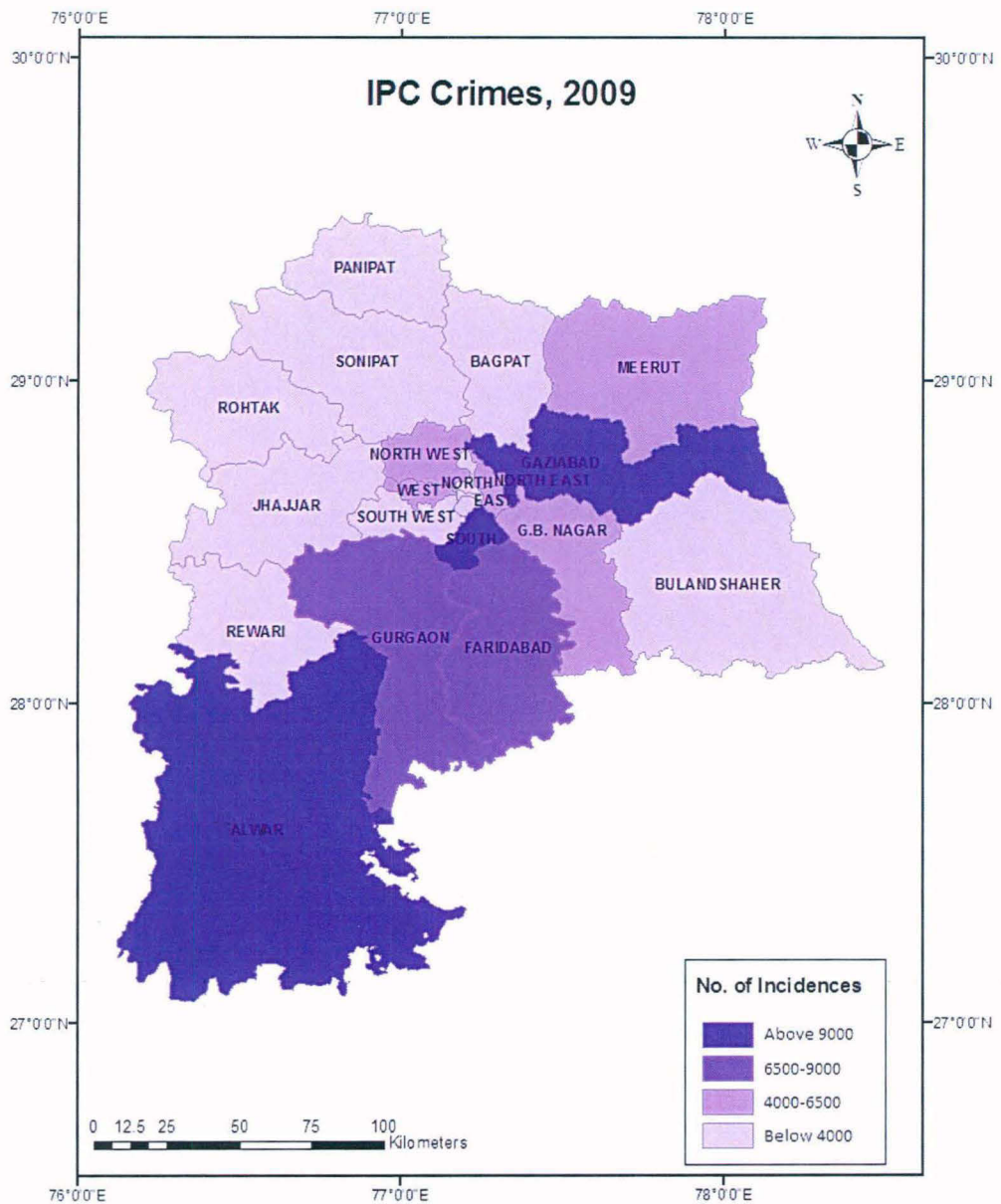
National capital region is one of the most rapid developing regions in India. High FDI inflow (Economic Survey of India 2000 to 2010) after economic liberalization has benefitted this region a lot. A rapid economic growth caused huge asset creation in last few years. Very high immigration and daily commutation results many problems also and increasing crime incidences is one of the serious problems in NCR. Due to fast economic growth, urbanization is taking place in its bad forms like called pseudo-urbanization in which unemployment and increasing slum dweller population are worth mentioning. Moreover globalization has created a new greedy consumerism among the youths. All these attributes have created a conducive environment for crime.

2.8.1 Crime Incidences and Crime Rates in NCR

Although number of incidences in NCR has grown comparatively slow (11.86%) over the period 2001 to 2009 but when we look at it by separating the districts of National Capital Territory (NCT) from NCR we found that on one hand NCT means proper Delhi recorded a negative growth rate (-8 %) of incidences whereas on the other hand other NCR districts experienced a considerable growth (33%). It means the growth of incidences in NCR is because of the districts surrounding Delhi not because of Delhi. That means somehow National Capital Territory has managed to reduce the crime incidences but National Capital Region where some districts of surrounding states are also included, not under control of Delhi, could not manage. Ghaziabad, G.B. Nagar, Gurgaon are the districts showing maximum increase in the incidences and this is clear that these are the districts attaining maximum economic growth however the determinants of crime will be tried to find out in the next chapter. Ghaziabad, Gurgaon and Alwar are the top most crime receivers whereas South Delhi is still crime hotspot of NCT (South Delhi was the top crime prone district during 1992 to 2001 as Nandini has shown. 2006). Nandini found that population density, urbanization and literacy are significantly related to total crime rate. Household density is significantly related to property crime rate but negatively significant with total crime rate (Nandini 2006, all for 2001). She found that south district continues to occupy the most

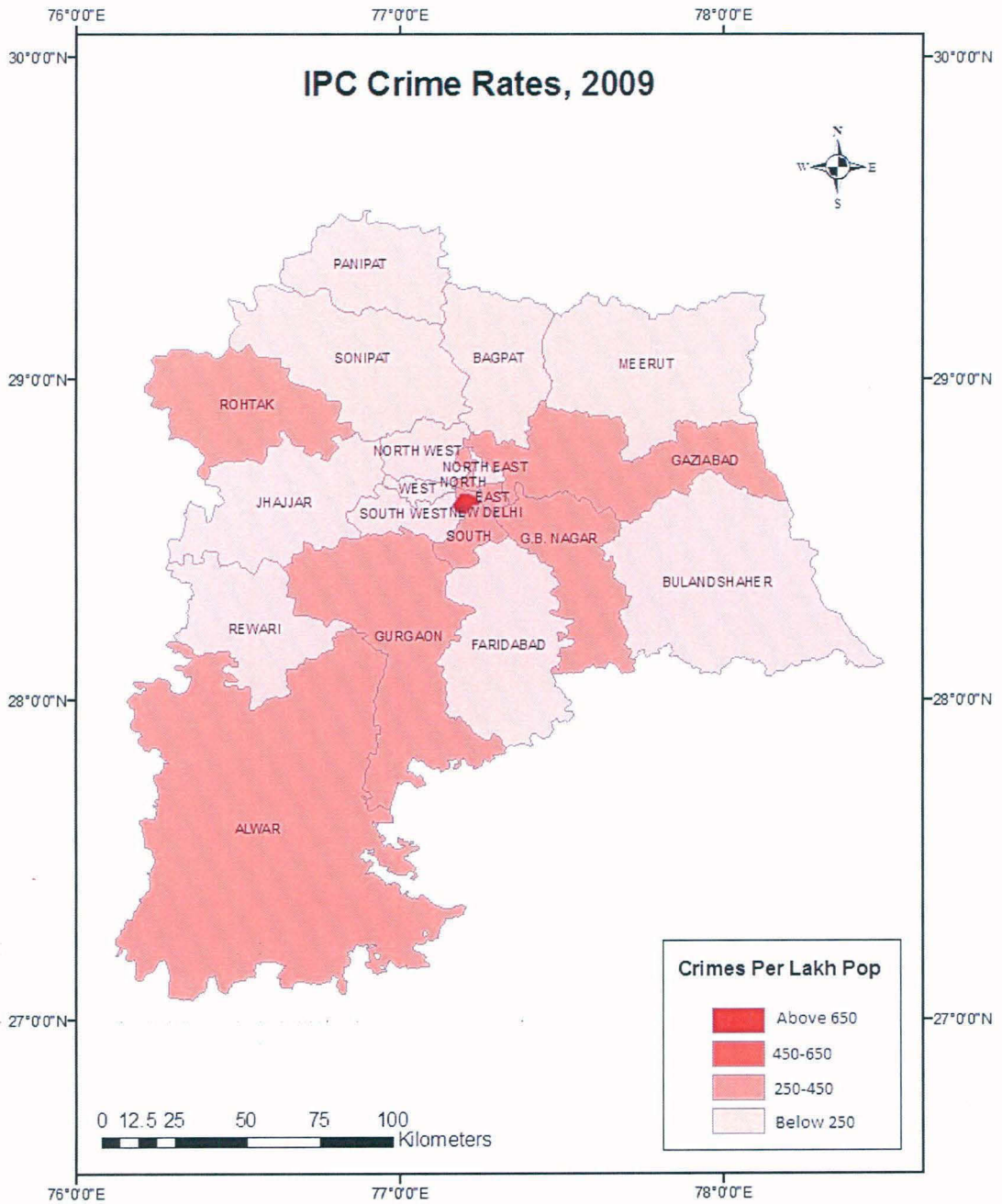
vulnerable spot over the entire period as per the NCRB data (1992-2001). But later western district is emerging as the major crime prone zone.

Figure 2.8 Crime Incidences in NCR



Source: Crime in India 2009, NCRB

Figure 2.9 Crime Rates in NCR



Source: Crime in India 2009, NCRB

Table 2.8 Growth in the IPC crime Incidences in NCR (2001-2009)

GROWTH IN THE IPC CRIME INCIDENCES IN NCR			
NAME OF CRIME	2001	2005	2009
MURDER	1947	1662	1762
ATTEMPT OF MURDER	1855	1388	1427
CULPABLE HOMICIDE NOT AMOUNTING TO MURDER	155	186	223
RAPE	718	1030	897
KIDNAPPING & ABDUCTION	2398	2336	3673
DACOITY	185	102	160
PREPARATION & ASSEMBLY FOR DACOITY	141	251	230
ROBBERY	1391	1040	1335
BURGLARY	5298	4173	4297
THEFT	27025	27434	36122
HURT	5981	5750	5756
DOWRY DEATHS	419	359	475
MOLESTATION	1058	1217	1031
SEXUAL HARASSMENT	943	994	718
CRUELTY AT HOME	1658	3021	3465
CAUSING DEATH BY NEGLIGENCE	2608	2846	3492
TOTAL COGNIZABLE_IPC CRIMES	97353	96153	104028

Source: Crime in India, NCRB

Above highlighted crime heads have shown considerable increase in the crime incidences. Kidnapping and abduction and theft are the crimes helping to make quick money. Now this is emerging as a popular means of making quick money. Overall number of IPC crime has gone up faintly in NCR but population growth also be kept in mind before any explanation.

Table 2.9

Growth Of Incidences in NCR (From 2001 To 2009)				
Attributes	CAB	CAP	CAW	TOTAL_IPC
2001	14350	32610	4781	95713
2009	17138	42593	6993	107068
% GROWTH	19.43	30.61	46.27	11.86

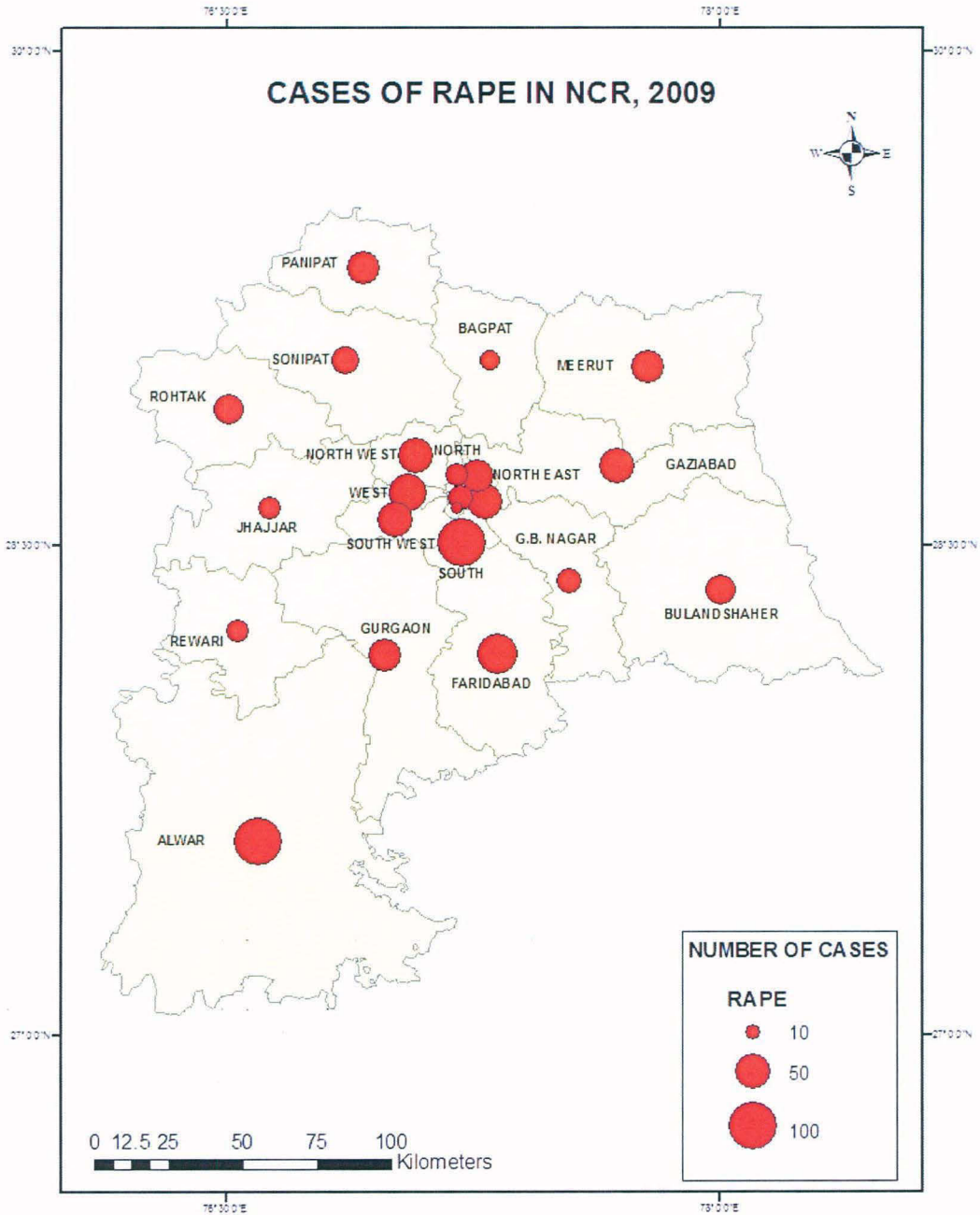
Source: Crime in India, 2009 NCRB

Table 2.10 Crime incidences and Growth in the incidences between 2001 and 2009

INCIDENCES	2009	2005	2001	
NCR DISTRICTS	TOTAL IPC	TOTAL IPC	TOTAL IPC	% GROWTH
CENTRAL	2833	3529	3750	-32
EAST	6379	5453	4447	30
NEW DELHI	1492	2295	2660	-78
NORTH	2908	3306	3998	-37
NORTH EAST	4720	4849	3449	27
NORTH WEST	4676	11019	10001	-114
SOUTH	11620	10529	10745	8
SOUTH WEST	3610	5762	6004	-66
WEST	5111	7217	7690	-50
TOTAL	50251	56065	54384	-8
FARIDABAD	6746	5051	5808	14
GURGAON	7944	5536	3502	56
JHAJJAR	1797	1343	1501	16
PANIPAT	2812	2138	1895	33
REWARI	2125	1753	1214	43
ROHTAK	2838	2003	1856	35
SONIPAT	3429	2413	1944	43
BAGPAT	1438	1002	1355	6
BULANDSHAHER	2595	2723	3972	-53
G.B. NAGAR	4707	2169	2443	48
GHAZIABAD	11821	4256	5079	57
MEERUT	5375	4347	5377	0
ALWAR	10092	6921	7023	30
TOTAL	63719	41655	42969	33

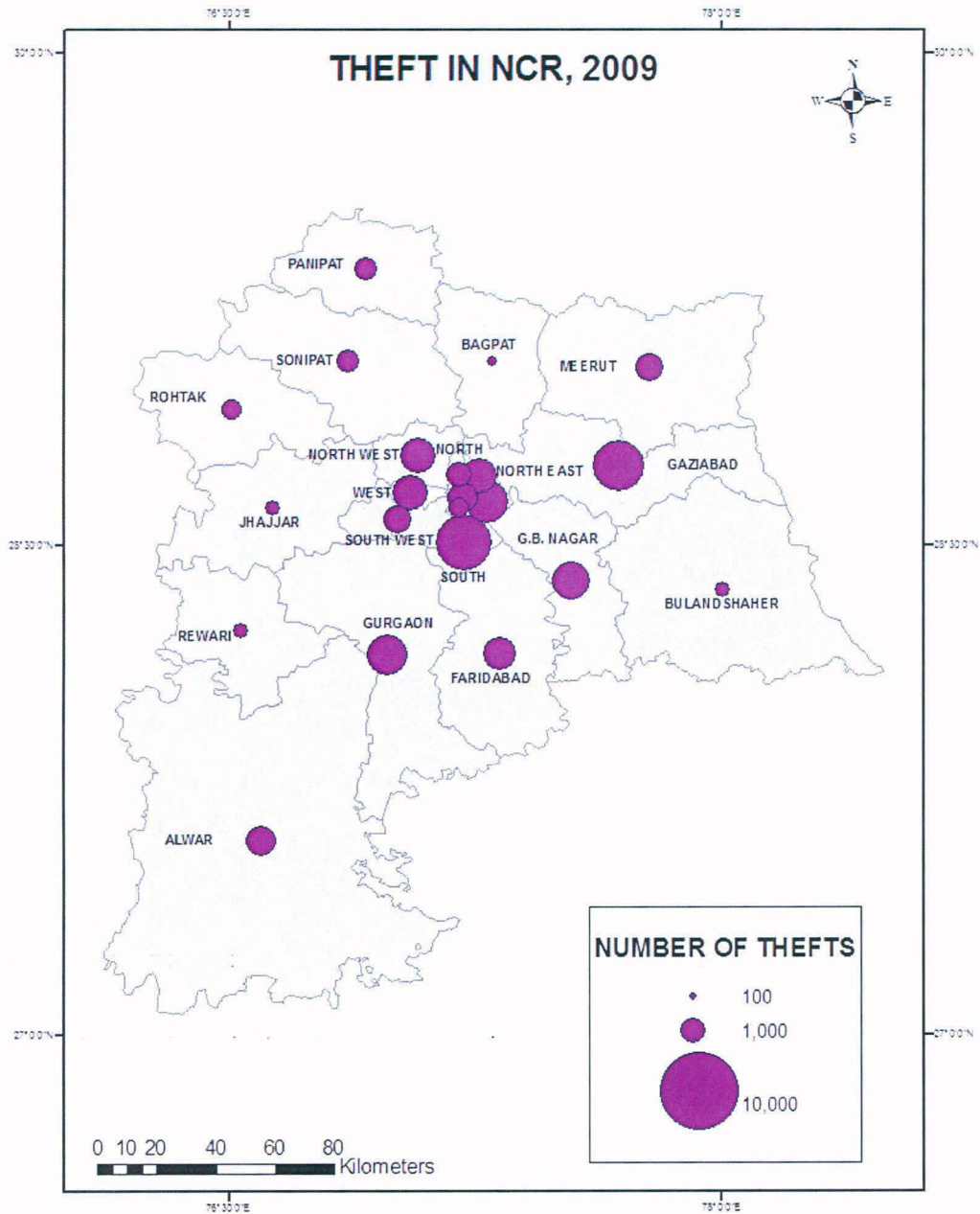
Source: Crime in India, NCRB

Figure 2.10



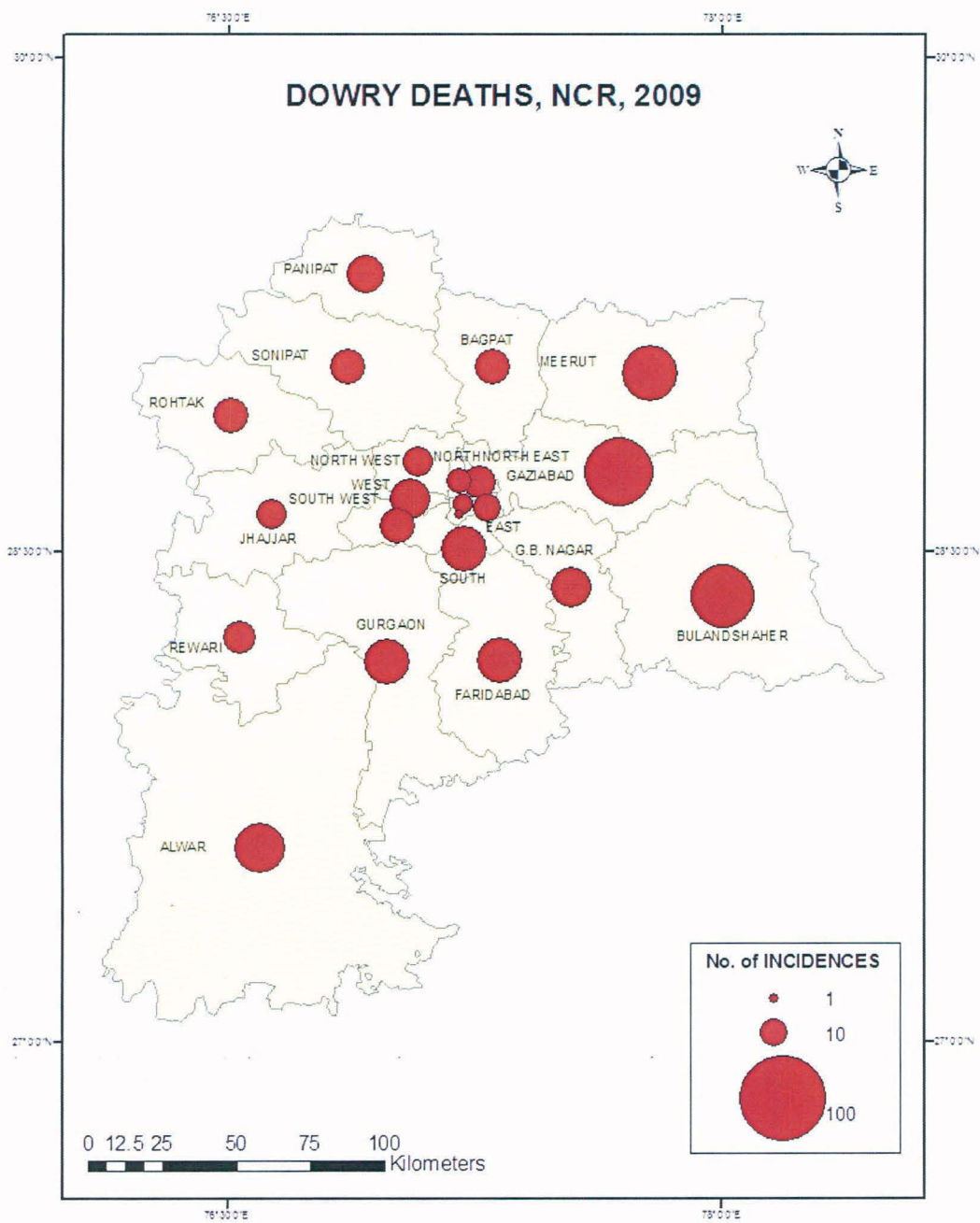
Source: Crime in India 2009, NCRB

Figure 2.11



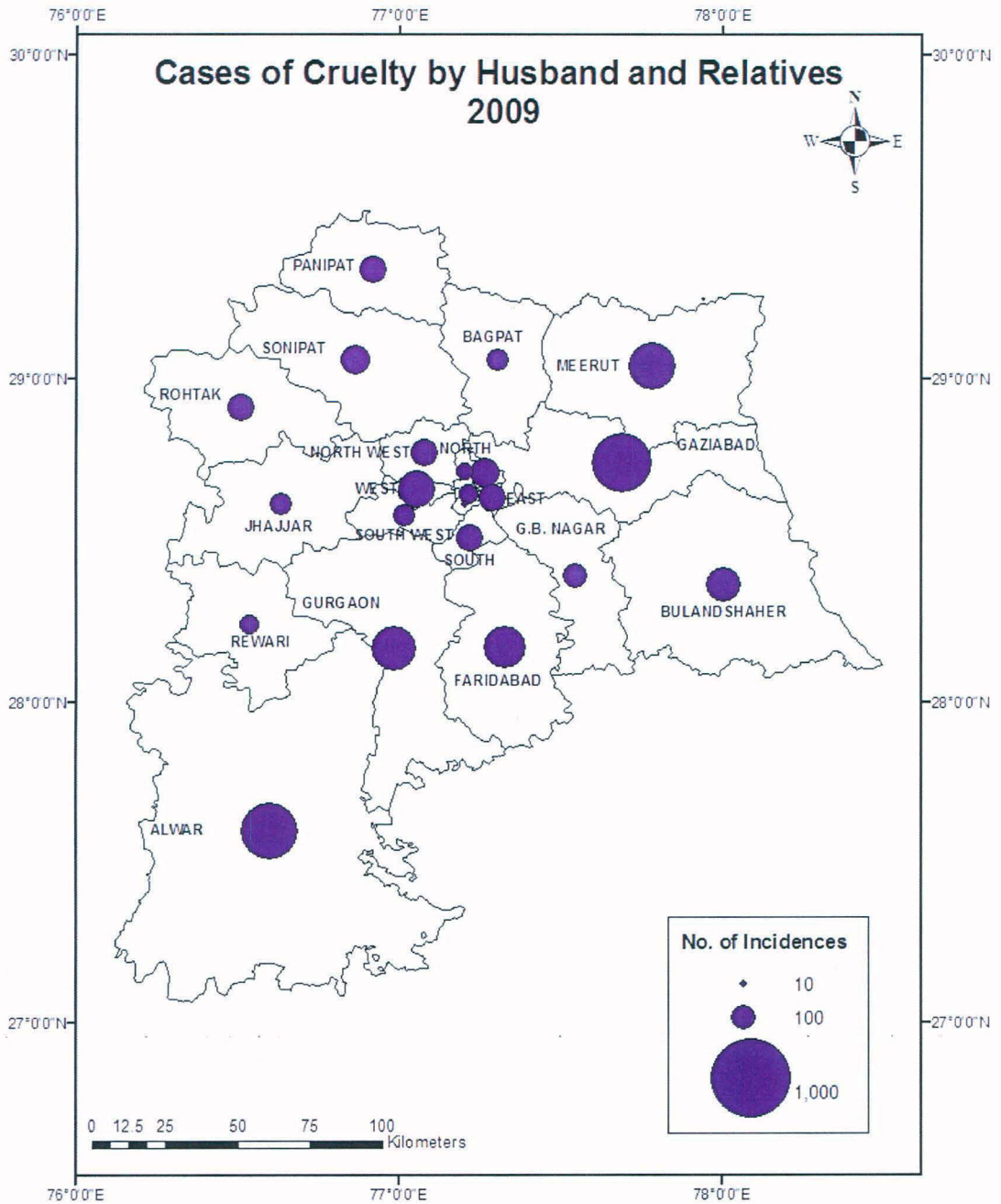
Source: Crime in India 2009, NCRB

Figure 2.12



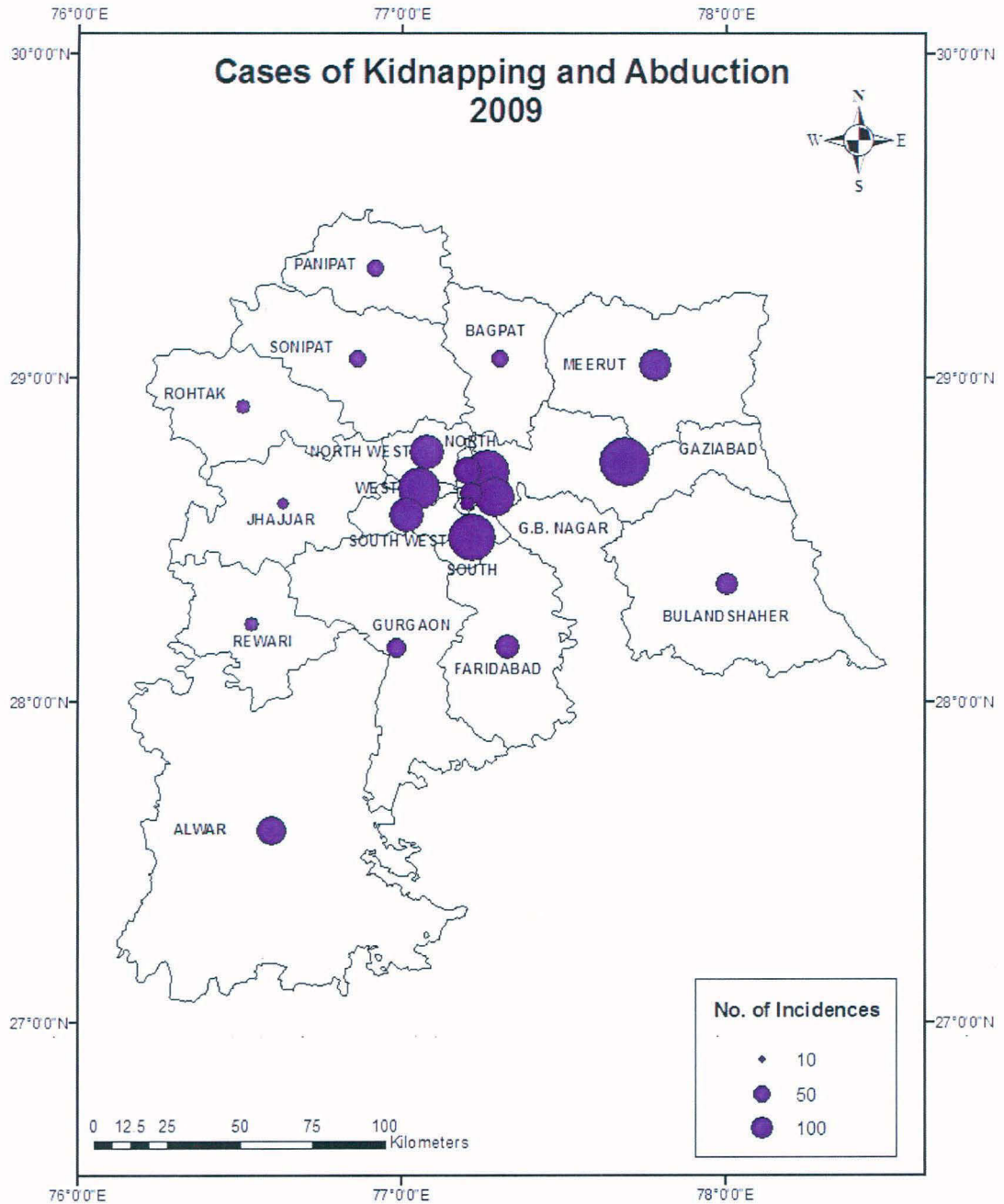
Source: Crime in India 2009, NCRB

Figure 2.13



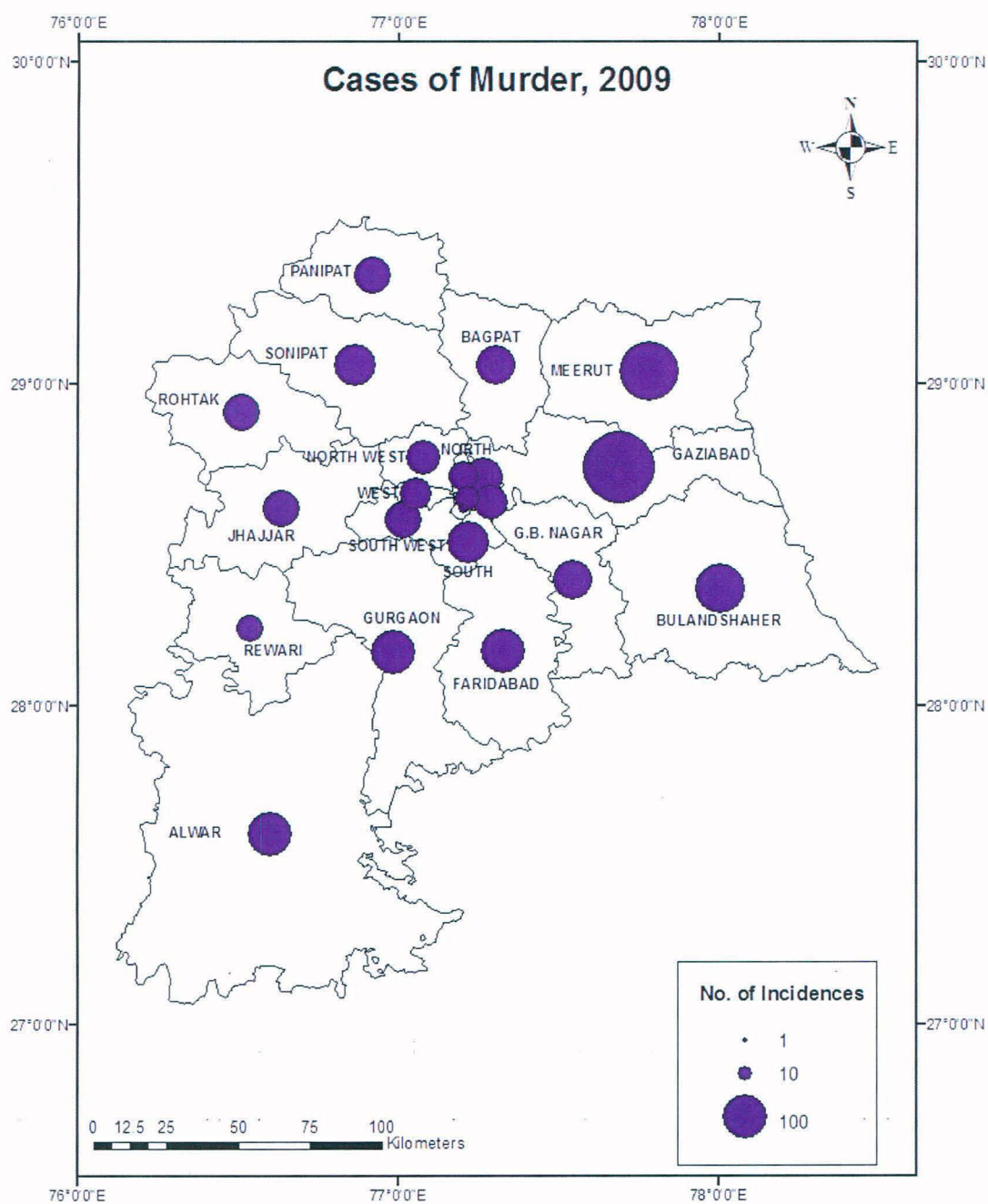
Source: Crime in India 2009, NCRB

Figure 2.14



Source: Crime in India 2009, NCRB

Figure 2.15



Source: Crime in India 2009, NCRB

Looking at some important crime heads we can clearly find a pattern of distribution in NCR. Like murder cases are concentrated either in NCT districts or in some districts of Uttar

Pradesh. Kidnapping and abduction, Rape and theft case are concentrated in NCT while cruelty at home and dowry deaths are concentrated outside the NCT. Due to greater anonymity, better chances of handsome ransom (more over most of the affluent families live in NCT), greater opportunity the kidnapping and abduction is concentrated in NCT. Dowry deaths are concentrated outside the NCT because perhaps patriarchy is still stronger in the areas rural in nature. Theft cases will be concentrated in the areas where there are assets and opportunities will be available and since NCT is more prosperous, concentration of theft is quite expectable here.

2.8.2 Share of different crime categories in total IPC crimes in NCR

But when we look at the share of Crime Against Body, Crime Against Property and Crime Against Women in the total cognizable IPC crime at all India level, we found that share of CAB and CAP has been almost static for last ten years that means growth rate for crime as well as population has been equal because number of incidences has gone up but not rates. but on the other hand share of CAW gone up a little from 6.6% to 8% which means CAW has gone up not only in NCT, NCR but also at all India level irrespective of all variations this implies that both incidences as well as rates both for CAW has gone up. The rate of IPC crime in Delhi has gone down more notably than that of incidences because population growth has been faster than crime incidences. NCR recorded maximum growth rate for crime against women (46.27%) followed by property crime and crime against body in the period 2001 to 2009.

Table 2.11

GROWTH OF INCIDENCES in NCR (FROM 2001 TO 2009)				
Attributes	CAB	CAP	CAW	TOTAL IPC
2001	14350	32610	4781	95713
2009	17138	42593	6993	107068
% GROWTH	19.43	30.61	46.27	11.86

Source: Calculated from crime in India, NCRB

Table 2.12 Types of Crime: Incidences and Share to total IPC crimes, 2009

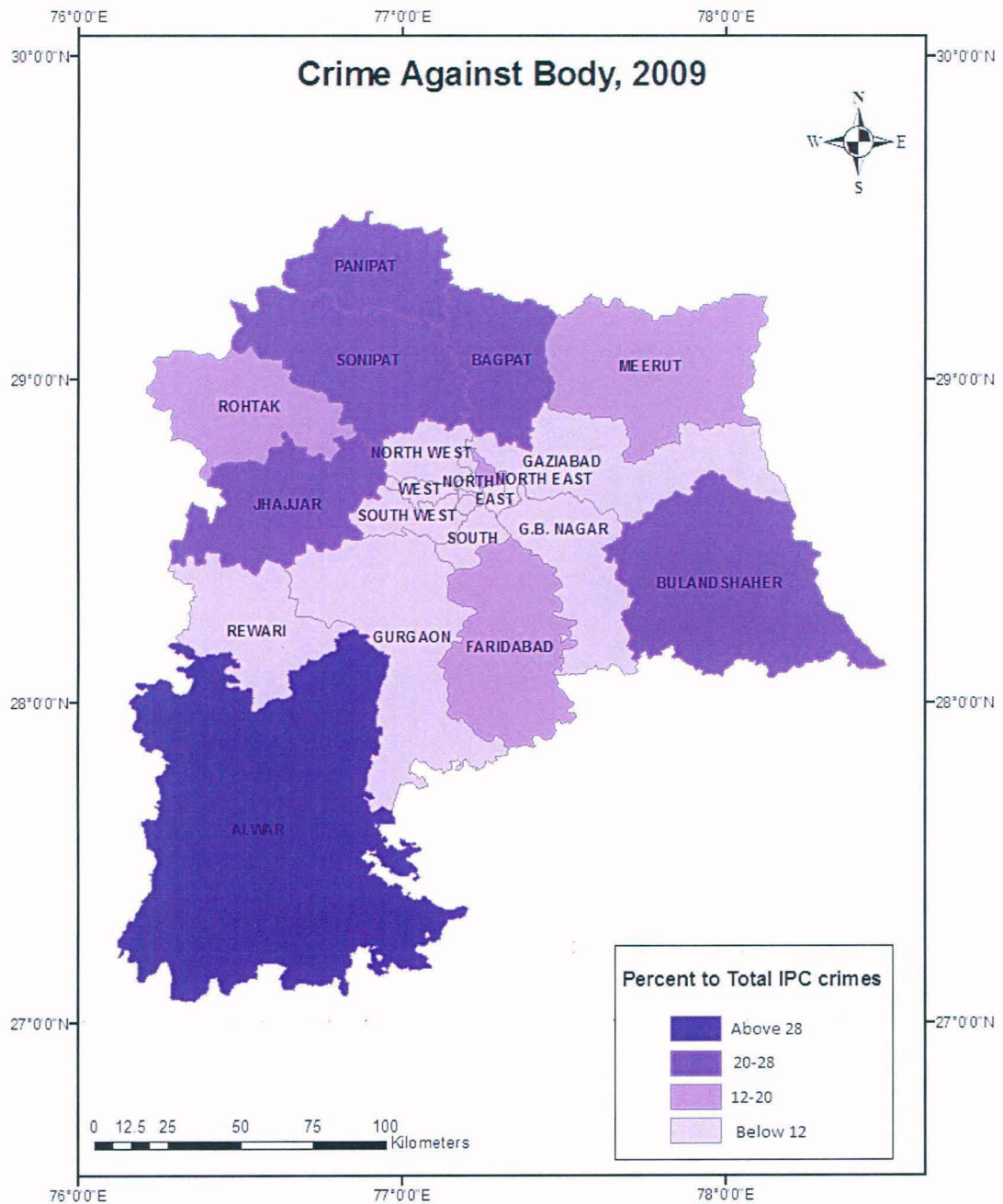
NCR DISTRICTS	CAB (incidences)	CAB (% share)	CAP (incidences)	CAP (% share)	CAW (incidences)	CAW (% share)
ALWAR	3467	34.4	1924	19.1	791	7.8
BAGPAT	338	23.5	238	16.6	129	9.0
BULANDSHAHER	671	25.9	433	16.7	335	12.9
CENTRAL	334	11.8	1516	53.5	135	4.8
EAST	835	13.1	3274	51.3	274	4.3
FARIDABAD	933	13.8	2134	31.6	417	6.2
G.B. NAGAR	541	11.5	2587	55.0	235	5.0
GAZIABAD	1562	13.2	5030	42.6	945	8.0
GURGAON	537	6.8	3560	44.8	458	5.8
JHAJJAR	446	24.8	539	30.0	151	8.4
MEERUT	963	17.9	1444	26.9	618	11.5
NEW DELHI	155	10.4	642	43.0	38	2.5
NORTH	352	12.1	1209	41.6	129	4.4
NORTH EAST	966	20.5	2261	47.9	276	5.8
NORTH WEST	497	10.6	2528	54.1	226	4.8
PANIPAT	589	20.9	994	35.3	251	8.9
REWARI	266	12.5	547	25.7	127	6.0
ROHTAK	535	18.9	979	34.5	235	8.3
SONIPAT	738	21.5	1127	32.9	245	7.1
SOUTH	1250	10.8	5705	49.1	429	3.7
SOUTH WEST	487	13.5	1523	42.2	204	5.7
WEST	676	13.2	2399	46.9	345	6.8

Source: Calculated from crime in India, NCRB

When distribution of different crime categories is seen we find that crime against body and crime against women are slightly more concentrated in outer districts of NCR whereas crime against property is obviously in NCT. The following table is clearly showing the distribution of the share of the crimes. Only Gautam Budha Nagar outside the NCT is among the top most property crime prone districts which is easy to explain as NOIDA and Greater NOIDA are located in it. NOIDA is fastest developing area in India (economic survey of India 2010) hence providing greater opportunity for property crimes. Greater NOIDA provide highly developed residential facilities and is full of assets i.e. easy opportunity for theft, dacoity and burglary. It is also very active zone of daily commuters to

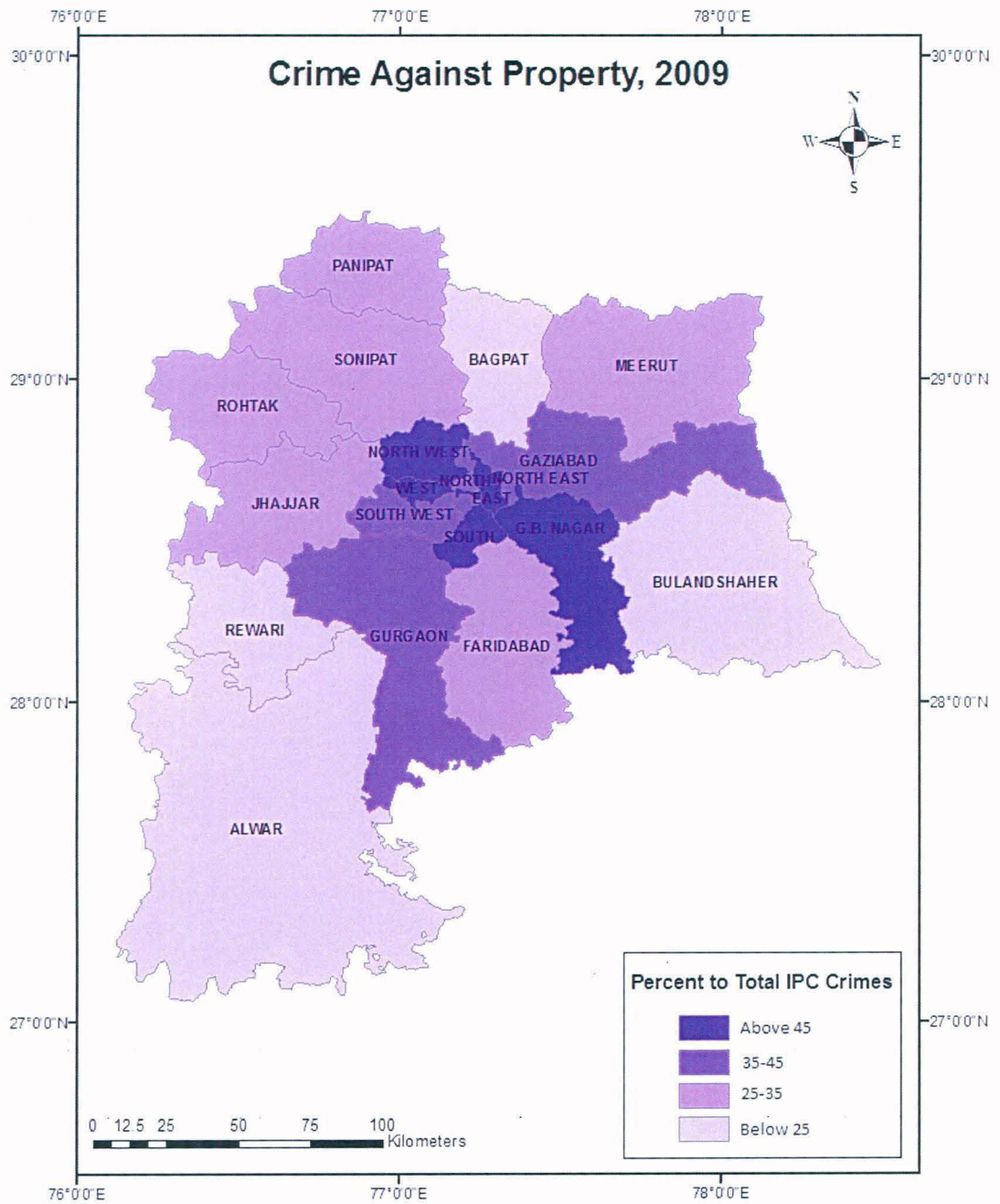
Delhi and directly attached to Delhi by easiest transport means. These all may have bearing on property crime.

Figure 2.16



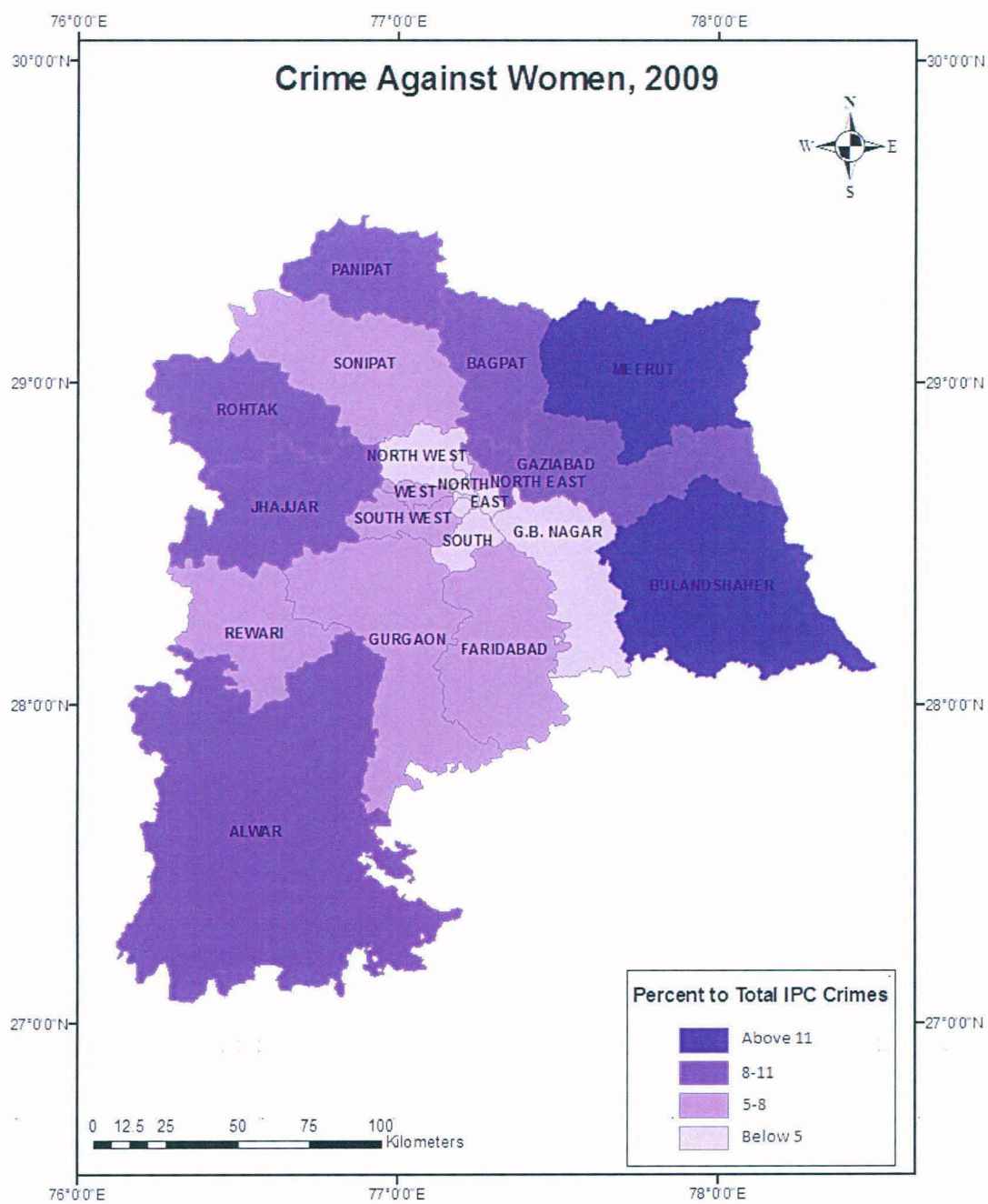
Source: Crime in India 2009, NCRB

Figure 2.17



Source: Crime in India 2009, NCRB

Figure 2.18



Source: Crime in India 2009, NCRB

Table 2.13 Growth in the Share of Types of Crime over 2001-2009

CAB over 2001-2009		CAP over 2001-2009		CAW over 2001-2009	
NCR DISTRICTS	% GROWTH	NCR DISTRICTS	% GROWTH	NCR DISTRICTS	% GROWTH
FARIDABAD	45	GURGAON	67	NORTH EAST	64
NORTH EAST	39	G.B. NAGAR	67	GHAZIABAD	58
GHAZIABAD	35	GHAZIABAD	66	REWARI	57
SOUTH	33	REWARI	54	WEST	56
REWARI	32	SONIPAT	54	EAST	53
EAST	32	FARIDABAD	54	SONIPAT	51
PANIPAT	28	NORTH EAST	47	GURGAON	50
ALWAR	27	JHAJJAR	43	SOUTH	48
GURGAON	25	EAST	39	CENTRAL	47
WEST	20	ROHTAK	35	ALWAR	45
CENTRAL	19	PANIPAT	32	ROHTAK	44
ROHTAK	19	ALWAR	32	NORTH	43
SONIPAT	15	SOUTH	9	PANIPAT	33
G.B. NAGAR	10	WEST	-8	G.B. NAGAR	29
JHAJJAR	9	CENTRAL	-18	MEERUT	22
BAGPAT	8	MEERUT	-19	SOUTH WEST	19
NORTH	6	BULANDSHAHER	-29	NEW DELHI	3
MEERUT	-4	NORTH	-32	BAGPAT	0
BULANDSHAHER	-23	BAGPAT	-40	FARIDABAD	-9
SOUTH WEST	-29	NORTH WEST	-43	NORTH WEST	-19
NEW DELHI	-30	SOUTH WEST	-52	JHAJJAR	-37
NORTH WEST	-146	NEW DELHI	-108	BULANDSHAHER	-77

Source: Calculated from crime in India, NCRB

Table 2.14 Share of Crime Categories to Total IPC crimes, 2009

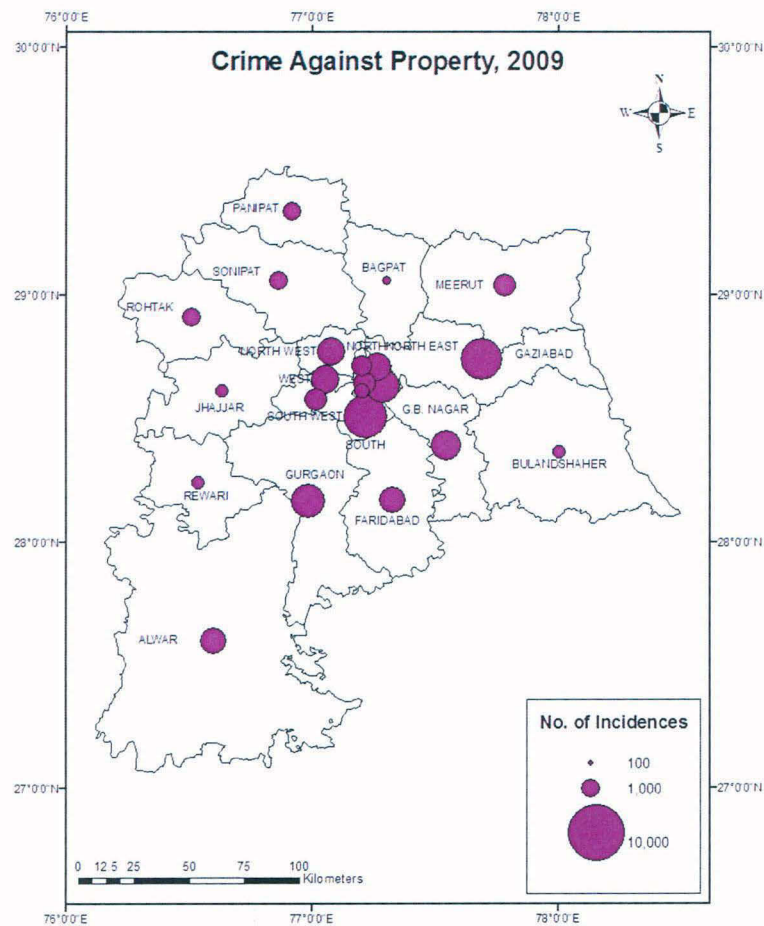
2009	CAB	CAP	CAW
NCT	12.6	47.9	5.1
Outer NCR	18.2	33.8	7.7

Source: Calculated from crime in India, NCRB

Property crime has the largest share in NCR; almost half (47.9%) of the total IPC crimes in NCT and one third (33.8%) in outer NCR. When we compare NCT and outer NCR, we see that NCT is far ahead of outer NCR when compared the share of property crime but outer NCR is ahead of NCT in remaining crime categories i.e. CAB and CAW. Bulandshaher,

Panipat and Meerut showed maximum share of crime against women and which are comparatively away from the core of the city i.e. going away from the city towards rural areas would increase crimes against women (need a deeper study).

Figure 2.19



Source: Crime in India, 2009, NCRB

Although the share of crime against property is larger in NCT districts but the growth rate in the share of CAP is higher for outer NCR districts as we see in the following table. This implies that in future outer NCR would likely to experience more property crimes. Ghaziabad is the only district which showed very high growth for all three types of crime

over the entire period. The share of crime against women is increasing in NCR i.e. either other crimes are decreasing or crime against women is increasing faster than other crimes.

2.8.3 Growth in crime rates, NCR

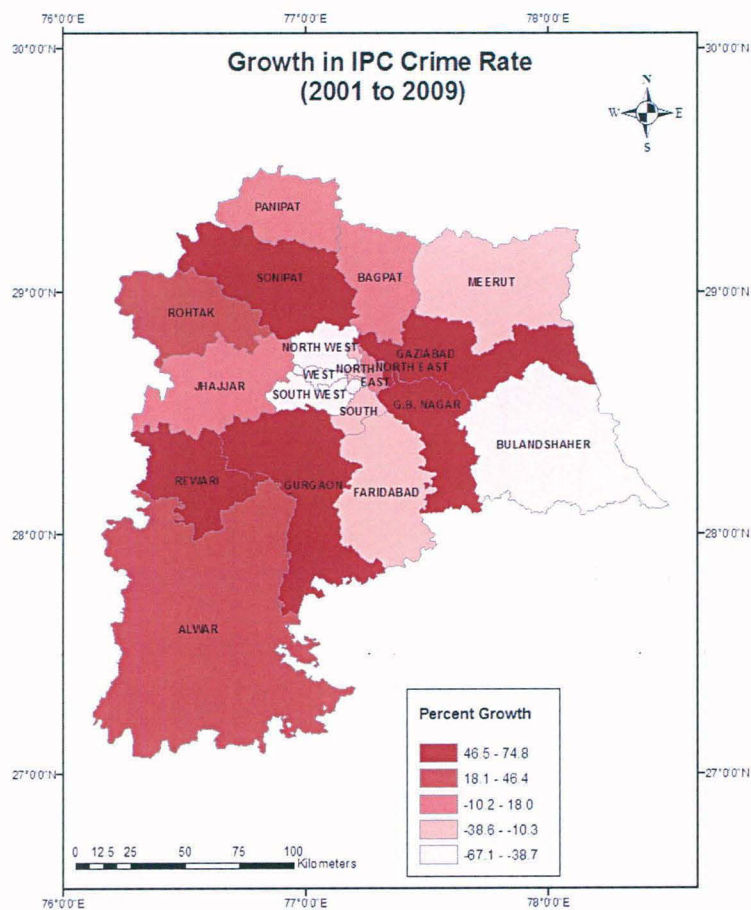
Table2.15 Growth in Crime Rates from 2001 to 2009

NCR DISTRICTS	GROWTH_CAB	GROWTH_CAP	GROWTH_CAW	GROWTH_IPC
CENTRAL	25.93	-14.30	92.84	-23.38
EAST	13.45	27.48	63.24	11.09
NEW DELHI	-24.16	-52.78	1.01	-44.84
NORTH	-2.42	-30.87	61.66	-33.46
NORTH EAST	13.71	30.75	93.94	-4.80
NORTH WEST	-71.38	-50.74	-41.05	-67.07
SOUTH	9.67	-18.29	42.92	-20.02
SOUTH WEST	-45.82	-54.02	-14.01	-57.93
WEST	-6.20	-30.92	70.07	-50.20
TOTAL	-7.96	-21.09	58.14	-30.22
FARIDABAD	35.85	62.65	-31.24	-13.24
GURGAON	1.55	134.28	53.76	72.87
JHAJJAR	-6.41	49.83	-37.55	2.50
PANIPAT	8.91	16.52	17.69	16.89
REWARI	25.62	85.99	99.92	48.79
ROHTAK	8.29	35.13	55.31	33.39
SONIPAT	1.33	88.55	76.60	52.57
BAGPAT	-0.06	-34.69	-8.34	-2.73
BULANSHAHER	-29.78	-33.08	-51.11	-43.45
G.B. NAGAR	-11.30	145.23	13.26	54.15
GAZIABAD	15.78	120.48	79.18	74.76
MEERUT	-17.44	-27.96	10.17	-14.47
ALWAR	13.26	21.61	49.76	18.62
TOTAL	4.30	61.50	14.25	22.20
TOTAL NCR	-5.90	3.00	15.30	-11.80

Source: Calculated from crime in India, NCRB

It would be better in understanding the nature and pattern of crime in NCR If we calculate the growth rates in the growth of different crime categories. Table below is showing the same thing. It's very easy to say that the growth in overall IPC crime rate has been negative in NCR as well as in NCT. Crime against body and crime against property has also gone down but the crime rate against women showed 58% growth in NCT. This shows the vulnerability of women in Delhi. Overall growth in crime against women is highest in Delhi-NCR. Crime against body is showing negative sign along with total IPC crime rate. But in outer NCR we see positive growth in crime rates for all categories of crime as well as total IPC crime rates. This shows that crime rate is increasing faster in outer NCR especially property crime (61.5%). This implies that faster the economic growth higher the crime rate.

Figure 2.20



Source: Crime in India, 2009, NCR

2.9 Conclusion

Thus in sum, following results have come out in this chapter. A spatial-temporal analysis revealed that Delhi is still one of the most crime prone states and especially for crime against property and crime against women. Crime incidences are found to be concentrated in some areas. States in Gangetic belt and south India (Kerala and Tamil Nadu) showed the concentration of crime incidences on the basis of their sizes. But growth in the incidences were found higher in so called backward and smaller states like Lakshadweep, Tripura, Sikkim, West Bengal, Assam, Jharkhand, Meghalaya, Haryana, Bihar and Andaman and Nicobar Islands. The share of crime types has been found changing. The shares of CAB and CAP were found more or less static over the period of 2001 to 2009 but the share of CAW to total IPC crime has gone up significantly. Although Delhi reported lowest negative growth rate for overall crimes but Delhi showed one of the highest growths for CAW.

When we see at the rate of crime per lakh population, the top 5 most crime prone states over the period 2001 to 2009 found were Chandigarh, Delhi, Kerala, Pondicherry and Madhya Pradesh have been at top, Whereas Nagaland, Uttar Pradesh, Meghalaya, Lakshadweep and West Bengal has been at bottom. Out of top five Chandigarh, Delhi, Kerala, Pondicherry are highly urbanized and have high literacy rates too. Hence one inference at least can be drawn out of this that urbanization is directly related with high crime rates. Property crime rates were found higher in economically advanced and urbanized states.

Crime concentration index was calculated in order to know that which type of crimes are concentrated where? Andhra Pradesh Assam, Punjab was found ahead for Crime against body, whereas Delhi, Haryana and Chandigarh were at top for property crimes. Tripura, Andhra Pradesh and Orissa were found with concentrated crime against women.

When we look at NCR for district level analysis we found that maximum growth in the incidences were recorded for crime against women followed by property crimes. And when we divide NCR into two constituents- the NCT and outer NCR we see that a different pattern is emerging. On the one hand NCT recorded negative growth rate for total IPC incidences whereas outer NCR showed 33% growth. That means crimes are occurring faster in outer NCR. Property crime as was anticipated has largest share in total IPC crimes in NCR. A clear cut spatial variation can be traced in the distribution of crime in NCR e.g.

Share of property crime is higher in NCT but the growth in the share of property crime is higher in outer NCR. So main findings can be put as follows:

- Crime incidences are found to be concentrated in some areas. States in Gangetic belt and south India (Kerala and Tamil Nadu) showed the concentration of crime incidences.
- The shares of CAB and CAP were found more or less static over the period of 2001 to 2009 but the share of CAW to total IPC crime has gone up significantly.
- Crime rates are higher in urbanized and developed states like Chandigarh, Delhi, Kerala, and Pondicherry.
- In NCR, maximum growth in the incidences was recorded for crime against women.
- Outer NCR districts are experiencing higher growth rate of IPC crime in comparison with NCT.

CHAPTER-3

SOCIO-ECONOMIC CORRELATES AND DETERMINANTS OF CRIME

3.1 Introduction

Crime is a complex phenomenon and a result of many factors working together. Various socio-economic, demographic and deterrence conditions determine the crime in an area. This chapter is devoted to study the relationship between crime and different socio-economic variables and try to find out the determining factors of crime in Delhi NCR. A regression analysis of crime and different variables is done in order to explain the causes behind the crimes. The selection of variables is based on the studies done earlier in this field. Rationale for the selection is given so that a position can be taken before analyzing the relationships. The findings of the study are supported by the findings and rationale of earlier studies. Socio-economic variables are taken for the NCR district wise analysis. Crime is also determined by deterrence hence some deterrence variables are also taken in the study but only for NCT because data was not collected at district level so Delhi is taken as a state for the study.

3.2 Selection of Variables

Looking at the types and nature of crime, we cannot understand crime without having a deep knowledge of the full context- demographic, economic, geographic and social-in which it occurs. Hence selection of the variables or determinants for crime will need proper reason as well as explanation. The relevance or appropriateness of the variables varies over time, space and socio-economic structure of the society. It is also very important in the selection of the variables that these should cover maximum explanation of the crime. There can be hundreds of variables explaining crime but few of them are determining the most part of the crime. After a wide literature survey the following variable are found significant in explaining the crimes:

The most notable expression of conflict theories as an explanation of urban crime has focused on income inequality. (Blau and Blau)¹. But it is not income inequality that predicts crime, but absolute poverty.

Robert H. Gordon has found that for a variety of reasons, cities seem to produce and nurture considerably more crimes than rural areas. Suburban crime rates are higher than rural crime rates, but still considerably below urban crime rates. One reason for the high urban crime rates is the presence of slum or ghetto areas with their poverty, unemployment, and overcrowding conditions associated with crime. Fear of crime is often found in inner-city population. According to Kinsey in the inner cities crime is a social problem, second only to unemployment. It is the problem of the poor, the weak, and the vulnerable. Urban-rural differences are the most significant factors in the geographic distribution of crime. For obvious reasons, states with large urban centers usually have higher crime rates than rural states.

Hasenpunsch has found that the percentage of young males is a good predictor of crime rates in Canada. Similarly the influence of the age composition of a population on crime rates has generally shown relationship. Fox and David F. Greenberg² also found that the proportion of the population between the age group of eighteen and twenty-one years was significantly related to the violent crime rate.

Mayhew describes “opportunities that attach to the properties of objects involved in crime” and present four characteristics that help to show how opportunity and crime are related. The abundance of goods: As more goods enter into circulation, more goods are available to be stolen. The physical security of goods, the level of surveillance; high levels of supervision provide some protection. The occasion and temptation for crime: For a crime to occur there must be a moment in time and space when the crime can happen. Chockalingam says that there is a significant relationship between victimization of burglary and residential area status.

Shaw and McKay’s work revealed five factors causing crime: low socioeconomic status, high residential mobility or population turnover, and high racial or ethnic

¹ Blau Judith R and Blau Peter M (1982), ‘The Cost of Inequality: Metropolitan Structure and Violent Crime’, *American Sociological Review*, Vol. 47, No. 1 (Feb., 1982), pp. 114-129 Published by: American Sociological Association

² David F. Greenberg (1985), ‘Age, Crime, and Social Explanation’, *The American Journal of Sociology*, Vol. 91, No. 1 (Jul., 1985), pp. 1-21 Published by: The University of Chicago Press

heterogeneity. Two other factors, family disruption (e.g., divorce, single parent families) and urbanization (often measured with a density variable).

Ray Jeffery explains that crime is not evenly distributed spatially or temporally. Ecological locations and design of the buildings influence the crime pattern of the city. Demographic analysis is extremely important in the temporal analysis of crime. Sex as a demographic factor, is a crucial variable in predicting criminality. Brearley and Sampson found that in the United States in the 1920s about 90 per cent of all reported murders with known assailants were committed by males. Age of victim is the most powerful predictor of violent crime, followed by structural density. Crime rates are inversely related to expected legal wages, particularly among young males with limited job skills or prospects. Recent ethnographic research shows that involvement in illegal work often is motivated by low wages and harsh conditions in legal work. (Jeffrey Fagan and Richard B. Freeman)³

Michael Tonry⁴⁵ found that immigration does affect the crime of any urban place. The level of urbanization has the strongest effect on theft, followed by structural density. Also “structural density tends to have a greater effect in rural areas than in suburbs or central cities”. Katzman concluded that, while a neighbourhoods local demographic composition provides a good statistical explanation of violent crime, property crime is better understood in terms of the demographic composition of surrounding neighbourhood. These results are related to differences in criminal mobility that property crime offenders travel greater distances when committing a crime. So surrounding neighbourhood will have a greater effect on local property crime rates.

Pattanaik analysed that maximum number of rape victims belonged to the age group of 16-30 years, the maximum number of arrested persons in rape cases belonged to the age group of 16-30 years. It was interesting to observe that the victims and offenders belonged to the same age group in 16-30 years. The rate of conviction was very low in

³ Jeffrey Fagan and Richard B. Freeman (1999), ‘Crime and Work’ *Crime and Justice*, Vol. 25 (1999), pp. 225-290 Published by: The University of Chicago Press

⁴ Michael Tonry (1997), ‘Ethnicity, Crime, and Immigration: Comparative and Cross -National Perspectives’ *Crime and Justice*, Vol. 21, (1997), pp. 1-29 Published by: The University of Chicago Press

⁵ Tonry Michael (1997), ‘Ethnicity, Crime, and Immigration’ *Crime and Justice*, Vol. 21, Ethnicity, Crime and Immigration: Comparative and Cross -National Perspectives (1997), pp. 1-29

comparison to the cases reported and taking into consideration the violent nature of the crime.

Fleisher (1963, 1966)⁶ pioneered the study of criminal behavior among economists. He argued that crime rates are positively associated with unemployment and low income levels. Ehrlich (1975)⁷, too, showed that low income levels led to high crime rates. Becker (1968)⁸ examined the effects of police presence, convictions, and the severity of punishment on the level of criminal activity. This led to the development of deterrence theory, arguing that potential crimes evaluate both the risk of being caught and the associated punishment. The empirical evidence from developed countries confirmed that both factors have a negative effect on crime rates. Mousumi Dutta and Zakir Husain (Jan 2009)

The news media are a vital part of the process by which individuals' private troubles with crime-as victims or offenders-are transformed into public issues. The social construction of crime problems may be understood as reflecting the types of relationships that link news agencies to their sources, and the organizational constraints that structure the news-gathering process. The ways in which the news media collect, sort, and contextualize crime reports help to shape public consciousness regarding which conditions need to be seen as urgent problems, what kinds of problems they represent, and, by implication, how they should be resolved. While much attention has been focused on the ways in which media attention to crime influences the fear of crime, it is likely that the most significant effects of media reporting are broadly ideological rather than narrowly attitudinal. (Vincent F. Sacco (1995)⁹

In their paper Bianchi, Buonanno and Pinotti examine the empirical relationship between immigration and crime across Italian provinces during the period 1990-2003. Drawing on police administrative data, we first document that the size of immigrant

⁶ Fleisher, B., (1966) 'The Effects of Income on Delinquency', *American Economic Review*, 56 (1/2), pp. 118-137

⁷ Ehrlich, I., (1975) 'On the Relation between Education and Crime', in Juster, F.T. (ed.) *Education, Income and Human Behavior*. McGraw-Hill, New York: 313-337.

⁸ Becker, G.S., (1968) 'Crime and Punishment: An Economic Approach', *Journal of Political Economy*, 76 (2): 169-217.

⁹ Vincent F. Sacco (1995), 'Media Constructions of Crime', *Annals of the American Academy of Political and Social Science*, Vol. 539, Reactions to Crime and Violence (May, 1995), pp. 141-154
Published by: Sage Publications,

population is positively correlated with the incidence of property crimes and with the overall crime rate. Opportunity cost and emotions do matter in determining the crime rate. Property crime rates are primarily driven by pleasant weather, consistent with the routine activities theory. Violent crime exhibited evidence in support of both theories i.e. in summer crime rates are higher. (John R. Hipp, Daniel J. Bauer, Patrick J. Curran, Kenneth A. Bollen, (2004)¹⁰

Pablo, Daniel and Norman, Marvin D. Krohn¹¹ found that crime rates and inequality are positively correlated (within each country and, particularly, between countries), and it appears that this correlation reflects causation from inequality to crime rates, even controlling for other crime determinants.

Wolfgang (1972) found that urban areas are characterized by high population density, higher spatial mobility, ethnic and class heterogeneity, reduced family bondage and greater anonymity. When these traits are found in high degree combined with physical deterioration, unemployment, illiteracy, unskilled labor and poverty, it ultimately leads higher crime incidents. Wesley G. Skogan¹² found that crime rates are highest in large, dense, heterogeneous places; however, data from earlier years indicate that this overlap is a relatively recent phenomenon. He suggests that this reflects the process of suburbanization. These variables may be further decomposed into the following variables:

Deterrence Variables: Deterrence variables like probabilities of being arrested and convicted determine the expected returns from crime (Becker, 1968, Ehrlich, 1973, 1975, 1996). Since these probabilities represent costs to criminals, their expected signs are negative. Now, the probability of being arrested depends on police performance. It may be captured by indicators like number of policemen per 1,000,000 of population, number of IPC cases per civil policeman (representing load on the police force), rate of

¹⁰ John R. Hipp, Daniel J. Bauer, Curran Patrick J., Kenneth A. Bollen (2004), 'Crimes of Opportunity or Crimes of Emotion? Testing Two Explanations of Seasonal Change in Crime', *Social Forces*, Vol. 82, No. 4 (Jun., 2004), pp. 1333-1372 Published by: University of North Carolina Press

¹¹ Krohn. M. D. (1969), 'Inequality, Unemployment and Crime: A Cross National Analysis' *The Sociological Quarterly* 17(3): 303-313

¹² Wesley G. Skogan (1977), 'The Changing Distribution of Big-City Crime: A Multi-City Time-Series Analysis', *Urban Affairs Review* 1977 pp 1-17

arrest (per thousand population), and charge sheets filed as percentage of cases in which investigations were completed (probability of being charge-sheeted after committing a crime). On the other hand the probability of conviction depends on judiciary performance – conviction rates (proportion of cases tried resulting in convictions, representing the probability of being punished) and percentage of IPC cases disposed off within six months (speed in which punishment will occur).

Becker (1968), however, argued that a criminal should be viewed, not as a helpless victim of social oppression, but a rational economic agent. Like any other people, the potential criminal weighs costs/risks and benefits when deciding whether or not to commit crime:

“some individuals become criminals because of the financial and other rewards from crime compared to legal work, taking account of the likelihood of apprehension and conviction, and the severity of punishment” (Becker, 1968)

Among other important issues examined were the effects of police presence, convictions, and the severity of punishment on the level of criminal activity (Becker, 1968, Ehrlich, 1973, 1975, 1996). This led to the development of deterrence theory, arguing that potential crimes evaluate both the risk of being caught and the associated punishment. The empirical evidence from developed countries confirmed that both factors have a negative effect on crime rates.

Socio-Economic variables: The following socio-economic variables have been included in the analysis:

More important than economic growth (or growth rate), however, is the quality of growth. This is captured through poverty levels, urbanization and level of education.

Inequality: Criminal activities are determined by economic motivations. Such motivations may be created by a sense of frustration, or an “envy effect”. A higher income inequality also means a worsening of legitimate earning opportunity, hence there is a possibility that a rise in income inequality would increase crime – not only by creating potential criminals, but also potential victims having material goods worth seizing [Fleisher (1966), Ehrlich (1973), Fajnzylber et al. (2002)]¹³,

Urbanization: The structural transformation from a predominantly rural economy to an urban one caused by multiple forces (of which industrialization is an important one)

¹³ Fajnzylber, P., Lederman, D. and N. Loayza (2002) ‘What Causes Violent Crime?’ *European Economic Review*, 46 (2): 1323-1357.

may increase the crime rate through different channels. For instance, increased levels of migration from rural to urban areas and attempts of elite groups to modernise may stimulate an increase in criminal activities (Fisher, 1987). Urbanisation leads to congestion and insanitary living conditions. This generates social tension and leads to eruptions of violence and crime, particularly in communities characterized by diversity (UN, 2005). The process of urbanization may also lead to elimination and marginalization, driving out people from the legal market economy, so that they are forced into criminal activities for their livelihood. The rate of urbanization is also important (UN, 2005). Rapidly urbanizing areas may have more unstable population and little sense of community. This may lead to erosion of traditional collective socio-religious norms controlling crime (UN 2005)¹⁴.

Education: Higher levels of educational attainment raise skill and abilities and are associated with higher returns in the labor market, thereby increasing the opportunity cost of criminal behavior (Freeman, 1991, 1996, Grogger, 1995, 1998, Lochner and Moretti, 2001)¹⁵¹⁶¹⁷. Education may also have a ‘civilization effect’, by improving moral stance and promoting the virtues of hard work and honesty (Fajnzylber et al 2002, Usher, 1997)¹⁸. Considering literacy as a variable for crime is a vague idea. But level of education can be a good determinant for crime for example at least middle class level of Education. (Mousumi Dutta and Zakir Husain (Jan 2009)

3.3 Rationale behind the selection of the indicators

1. Greater the urban population greater the chances of anonymity, crowding, cultural conflict and social disorganization and hence higher the crime rates as a consequence.

¹⁴ United Nations (2005) *Crime and Development in Africa*. Mimeo. United Nations, New York.

¹⁵ Freeman, R.B., (1991) ‘Crime and the Employment of Disadvantaged Youths’. NBER Working Paper no. 3875.

¹⁶ Grogger, J., (1995) ‘The Effect of Arrest on the Employment and Earnings of Young Men’. *Quarterly Journal of Economics*, 110(1): 51-72.

¹⁷ Lochner, L. and E. Moretti (2001) ‘The effect of education on crime: evidence from prison inmates, arrests, and self-reports’, NBER Working Paper no. 8605.

¹⁸ Usher, D., (1997) ‘Education as Deterrent to Crime’. *Canadian Journal of Economics*, 30(2): 367-84.

2. Sex ratio- less number of females in population, hence less chances of formation of families, rate of violence tends to be on rise. Moreover female are said to be less violent in nature as compared to men (Oldenberg 1992)¹⁹.
3. Literacy: gives an idea of level of development. The progress of elementary education has been the major force behind the secular decline of criminal violence in Europe in 19th and 20th centuries(Chenais 1981)²⁰
4. WPR: poverty and hardships of livelihood are one of the important reasons behind crime, hence high Work Participation Rate (WPR) would therefore indicate lesser crime (Shelley 1980)²¹
5. SC/ST population can be taken as a proxy for poverty. They can be considered as easy targets as well as offenders as they are likely to resort to crime.
6. Female WPR: a high % of females in labour force means more women leaving their traditional role and can become easy target. So high female WPR means higher crime and total crime rate in general because of shrinking space of patriarchy.
7. Migrant population would cause higher anonymity, weaker social bond, greater social disorganization, hence higher the migrant population higher the crime rate in urban areas.
8. Unemployment rate may push people to commit crime for their survival and for making quick money
9. More and more dependent population more hardships for living hence more crime moreover children and elderly are easy targets for victimization. But there is another opinion that dependent population includes persons of age below 15 years and above 60 years and they, the children and the elderly are less violent in nature hence higher the dependency lower the crime rate.

From the discussions of literature so far it can be said that unemployment, poverty, literacy, urbanization, sex ration, crowding, dependency ratio, work participation rate

¹⁹ Oldenberg. P. 1992. 'Sex ratio, son preference and violence in India'. *Economic and Political Weekly*, Dec. 1992, 2657-2659

²⁰ Chenais. J.C. 1981. as cited in Dreze and Khera (2000), 'crime gender and society in India: : Insights from Homicide Data' *Population and Development Review*, Vol. 26, No. 2 (Jun., 2000), pp. 335-352

²¹ Shelley. I. Louise (1980), *Crime and modernization*, Southern Illinois University Press pp 5-11

are some of the variables linked with crime. Some of them are self explanatory; Scheduled Caste and Scheduled Tribe population has been taken as a proxy for poverty.

3.4 Correlation Analysis

When the correlation between IPC crime rate and different variables is calculated, a mixed result has come out. Rate of unemployment, share of young male to total population, houseless population, rate of urbanization, migrant population, literacy, population density, work participation rate and non working population seeking job are positively related to crime rate i.e. if these are increasing, crime rate is also increasing. But on the other hand dependency ratio (0-15 and 60+ population), sex ratio and Scheduled Caste population are negatively related to crime rate.

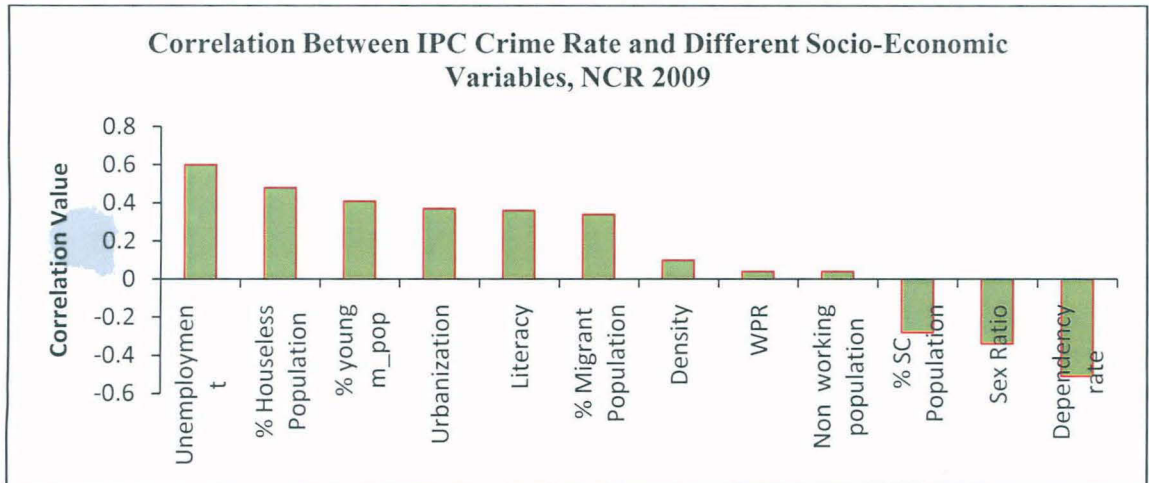
In case of dependency ratio it is easy to explain. Although they easy target for victimization and burden on the working hand but the other opinion that the children and the elderly are less violent in nature hence higher the dependency lower the crime rate is stronger here. That is why if dependent population increases, crime rate falls down. Negative correlation between sex ratio and IPC crime rates can also be explained similarly. Women are less violent than the men hence a good sex ratio can lessen the rate of crime.

Table 3.1 Variables and their Correlation Values with IPC crime rate

VARIABLES	CORRELATION VALUE
Unemployment Rate	0.6
% Houseless Population	0.48
% young male population	0.41
Urbanization	0.37
Literacy	0.36
% Migrant Population	0.34
Density	0.1
WPR	0.04
Non working population	0.04
% SC Population	-0.28
Sex Ratio	-0.34
Dependency rate	-0.51

Source: Census of India 2001

Figure 3.1



Source: Census of India 2001

3.4.1 Correlation between IPC crime rate 2009 and Different Socio-Economic Variables

We can see that above figure shows the correlation between the IPC crime rate 2009 and different socio-economic variable but from this figure we cannot tell the significance of the correlations hence a Pearson's correlation Matrix is drawn below. From the correlation table we can easily say that percentage of houseless population to total population and rate of unemployment are significantly and positively related with crime rate i.e. if the proportion these two variables to total is increasing, overall crime rate is also increasing. Houseless population is generally form slum dwellers and unemployed population in urban areas are likely to resort criminal activities for their livelihood. Dependency ration is significantly but negatively related with overall crime rate. As explained earlier that dependent population is more likely to be less violent in nature, an increase in dependency ration would lowers the crime rate. Children (below 15) are generally under proper custody of family whereas elderly are senior citizen and weak also; moreover they have their own reputation in society so they are less likely to commit crime going beyond these things.

Other variable like urbanization, literacy and migration are positively related with crime rate but not significantly. As earlier studies have also found that urbanization and the associate variable migrant population are directly related to crime rate is found

proved here. Higher literacy means at least better reporting so it is positively related to crime. As earlier explained that women are less violent in nature hence higher the sex ratio, lower the crime rate has been proved here although not significant.

Table 3.2

Correlation between Crime Rate and Socio-Economic Variables				
VARIABLES	RATE_IPC	RATE_CAB	RATE_CAP	RATE_CAW
Population Density	0.102	-0.027	0.279	-0.231
Sex Ratio	-0.346	-0.05	-.433*	0.212
Urban Population	0.371	-0.026	.539**	-0.225
Scheduled Caste Pop	-0.29	-0.199	-0.215	-.434*
Literacy	0.366	0.201	.447*	-0.184
Houseless Population	.484*	0.344	0.388	0.337
Work Participation Rate	0.043	.475*	-0.18	0.286
Migrant Population	0.347	0.039	0.389	-0.218
Unemployment rate	.607**	0.141	.678**	0.077
Non Working Population	-0.045	-.476*	0.177	-0.286
Dependency Ratio	-.512*	-0.116	-.623**	0.154
Young Population	0.41	0.072	.528*	-0.19

Source: Calculated from Census of India 2001 and Crime in India, NCRB

□ □ Denotes the significance at 5% level

□ □ Denotes the significance at 10% level

3.4.2 Correlation between Property crime²² rate 2009 and Different Socio-Economic Variables

Above correlation table shows that urbanization; literacy, unemployment and young male population to total population are directly and significantly related with crime rate i.e. these are increasing, property crime is also increasing while dependency ration and sex ratio are negatively and significantly related that means an increase in these two variables can lower down the property crime rate. The nature of property crime is such that it's likely to be committed by young population like burglary, robbery, and dacoity. Old aged population is unlikely to commit a theft. That why perhaps the dependency ratio is negatively related with property crime while young male population is strongly related (significant at 5% level). Women are in fact very less

²² Crime against property includes Dacoity, Its Preparation & Assembly, Robbery, Burglary and Theft.

likely to commit property crime because dacoity, burglary, robbery are cannot be done by them easily. Hence high sex ratio (i.e. more female in population than men) can lower the property crime. Literacy is always a bigger thing than mere variable. More literacy means better reporting of crime, more literate means better chances of being rich and being rich means possession of more valuable assets. Availability of valuable assets means more opportunity for committing property crimes. As a coincidence urban areas have high literacy and abundance of good and assets. Perhaps, this is the reason literacy is positively related with property crime.

Other variable like population density, houseless population, migrant population, non working population are positively related with property crime but not significantly. Scheduled Caste population is negatively but insignificantly related. So as earlier studies shown most of them are found to be related with property crime here also.

3.4.3 Correlation between crime against women 2009 and Different Socio-Economic Variables

Only the percentage of Scheduled Caste population to total population is found to be significantly related with crime against women but negatively i.e. more Scheduled Caste population in total population, lesser the crime against women. SC population can be taken as a proxy for poverty and where there is poverty, there is low literacy level hence underreporting of crime especially domestic violence, so it is likely to be reported lesser crime against women. But it cannot be said confidently, it needs a deeper research.

3.4.4 Correlation between crime against body²³ 2009 and Different Socio-Economic Variables

Correlation table²⁴ shows that only three variables work participation rate, houseless population and non working population are related significantly. Out of which non working population is negatively related to crime against body. Higher work participation rate means more chances of being outside the home so more chances of being victimized. So this way WPR may have bearing upon crime against body. Houseless population is more likely to commit crime as there will be weak social bond

²³ Crime against body includes Murder, Its attempt, Culpable Homicide not amounting to Murder, Kidnapping & Abduction, Hurt, and Causing Death by Negligence.

²⁴ For detail see appendix A.9 to A. 12

and greater anonymity. Moreover houseless population is generally poor. But it cannot be said strongly whether poor commit crime more than they are rather being victimized more.

Thus on the basis of above discussion it can be said that the variables found significantly related with different crimes are proving the findings of earlier research works and theories but a correlation matrix cannot tell the degree at which the variables influence the crime rate. It can only show the direction of the relationship i.e. whether positive or negative. More over it take all the variables together hence it neglects the multi collinearty (the influence of variables on other variables). Hence next part of this chapter is devoted to find out the determinants of the crime with the help of regression analysis.

3.5 Determinants of Crime Rate

Crime rate is more a dependent variable because it is determined by different socio-economic variables but crime is so complex that it cannot be determined by one or two variables rather it is result of many factors at the same time. So how much any variable is determining the crime is important to know in order to understand the real cause behind. Hence a suitable statistics is required for the study. A **regression analysis** is one of such statistical tools which help us understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. Regression analysis is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables.

Regression analysis involves the following variables:

- The **unknown parameters** denoted as β ; this may be a scalar or a vector.
- The **independent variables** X .
- The **dependent variable**, Y .

A regression model relates Y to a function of X and β .

$$Y \approx f(X, \beta)$$

3.5.1 Regression between IPC crime rate and socio-economic variables²⁵

When a simple linear regression analysis has been done in order to find out the determining factors of crime, all the variables are found insignificant except Scheduled Caste population to total population. As was apprehended that there may be high multicollinearity²⁶ between the variables, found to be true. Hence a step wise regression

²⁵ For details of regression analysis appendix is referred Appendix A. 13-18

²⁶ **Multicollinearity** is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. In this situation the coefficient estimates may change erratically in response to small changes in the model or the data. Multicollinearity does not reduce the predictive power or reliability of the model as a whole, at least within the sample data themselves; it only affects calculations

analysis has been done so that co linearity problem can be removed. As we see the coefficient table of step wise regression, three variables are found to be significantly related with IPC crime rate- unemployment rate, non working population and Scheduled Caste population. And at last a simple regression analysis is done with these three variables. It is found that Scheduled Caste population and non working population are significant but negatively related with crime rate. Table shows that one unit change in SC or non working population will make the crime rate change by 14 units. These three variables explains crime rate 67% (table shows R Square .672) when other variable are held fixed.

The third variable rate of unemployment is positively related with crime rate and 1 unit change in it causing 149 unit changes in overall crime rate. This implies that unemployment rate is strongly correlated with crime rate and if it increases, crime rate will also increase. Studies always found this variable significantly related with crime. Unemployment causes frustration among the unemployed and they are compelled to resort crime in order to fulfill their needs and they are more likely to commit crime than an employed person whose life is stable.

Again relationship between crime against body and different variables if found to be significant for two variables- unemployment rate and non working population where unemployment is positively related while nonworking population is negatively related with crime against body. Both these variable determine Crime against Body 43% when other variables are held fixed.

Crime against Property is significantly related with only one variable the rate of unemployment. Earlier we found that many variables were found significantly related due to collinearity. 1 point change in unemployment will cause 57 unit changes in property crime. Unemployment alone explains about half of the property crime.

regarding individual predictors. That is, a multiple regression model with correlated predictors can indicate how well the entire bundle of predictors predicts the outcome variable, but it may not give valid results about any individual predictor, or about which predictors are redundant with respect to others.

When regression is run for crime against women no variable is found significant due to collinearity. But when collinearity was removed by a step wise regression, Scheduled Caste population to total population was found significantly related but negatively. But it still explains only 19% of crime against women when other variables are held fixed.

3.5.2 Deterrence and Crime Rates

Controlling crime rates is particularly important in developing countries like India where large sums are spent on establishing and maintaining the police force and judicial system. Such intervention will be effective only if they are based on an understanding of crime and the factors determining crime rates. In India, for instance, intervention to control and reduce crime rate has relied on increasing expenditure on the police and judicial systems. This is expected to act as a deterrent by increasing the expected costs of committing a crime – as the probability of getting detected and punished will increase. This is in line with empirical findings for developed countries, showing that deterrence is likely to have a significant negative impact on crime rates (Dutta and Hussain 2009).

Table 3.3

YEAR	RATE & SHARE(TO TOTAL IPC CRIMES) OF DIFFERENT CRIME CATEGORIES IN DELHI								RATE_CAW
	CRIME AGAINST BODY		CRIME AGAINST PROPRTY		ECONOMIC CRIME		VIOLENT CRIME		
2000	33.54	9.1	145.6	38.7	20.45	4.85	30.4	7.6	17.3
2001	37.66	9.54	167.24	42.4	19.62	4.97	30.5	7.7	16.6
2002	32.18	9.42	136.28	39.9	17.99	5.27	25.8	7.6	15.4
2003	28.5	8.9	121.5	38	17.22	5.4	23.3	7.3	22.1
2004	29.47	8.4	140.7	40.1	18.4	5.24	24.2	6.9	24.1
2005	31.91	8.96	131.75	37	17.84	5	26.4	7.4	27.6
2006	28.9	8.1	124.5	34.85	17.23	4.83	25.5	7.1	28
2007	28.66	8.55	119	35.52	16.9	5	26.8	8	28.7
2008	30.37	10.61	124.59	43.55	10.95	3.83	23.1	8.1	22.8
2009	35.57	12.59	135.44	47.93	13.38	4.74	27.3	9.7	23.9

Source: Crime in India 2009, NCRB

In this section of the chapter the data of crime for last 10 years (2000-2009) has been taken for Delhi (NCT). After categorizing the crimes, it is found that share of crime against body, property crimes, and violent crimes, crime against women to total IPC cognizable crimes

showed an increasing trend in the last 10 years. Crime against women showed a huge increasing trend in this period. This is not to say that these crimes actually gone up rather these have gone down (except crime against women), only the share is showing increasing trend. One thing is noticeable, the share of crime against body and violent crimes showing sudden increase in last two years (2008 and 2009).²⁷

Table 3.4 Deterrence Variables in NCT (Delhi)

YEAR	A	B	C	D	E	F	G	H	I	J	K	L
2000	39.5	67.4	48.7	68.9	48123	43268	3.1	1.53	3597	378	3328	30905
2001	45.8	53.5	50.4	81.4	47020	46017	2.4	1.53	3806	410	3342	18967
2002	50.3	58.5	37.9	81.1	44572	44587	2.2	1.75	3694	381	3393	21588
2003	51	62.9	32	81.7	40855	45041	2.1	2.06	3712	371	3406	21322
2004	51.5	57.9	49.7	93.2	47902	44616	2.3	2.06	3713	360	3471	20465
2005	43.4	59.3	62.1	85.6	53318	43723	2.5	2.38	3652	344	3591	18126
2006	45.9	66.5	65	85.3	54198	46694	2.3	2.46	3805	348	3763	19781
2007	51.4	64.5	64.7	85	50744	49999	2.1	2.57	3953	350	3928	19755
2008	44.3	60.9	65.3	91.1	38286	52834	2	2.51	4075	350	4598	19271
2009	46.7	54	58.1	90.7	36263	58222	1.6	2.31	4345	362	5321	18809

Source: Crime in India 2001- 2009, NCRB

Index:

(A)Pendency Rate (%), (B)Charge Sheeting Rate (%), (C) Conviction Rate (%), (D) Pendency In Court (%), (E) No Of Arrests, (F) No. Of Policemen, (G) Cases/Civil Policeman, (H) Unit Cost Per Civil Police (Lakhs), (I) Policemen/100 Km2 Area, (J) Police/Lakh Population, (K) No. Of Motor Vehicles, (L) No Of Wireless Equipments

²⁷ for detail of regression see appendix A. 19-22

Above 12 variables are taken as deterrence variables. Deterrence variables increase opportunity cost for crime hence offender get demoralized or afraid of committing crime. But the problem with such variables is cause and effect. It is very difficult to say whether any area will have fewer crimes when number of civil policemen is increased because higher deployment of policemen in any area is often driven by the higher incidences of crime there.

3.6 Regression between Deterrence Variables and Crime Rate²⁸

This study is done for NCT only. When a regression analysis is run it is found that IPC crime rate is significantly related with only cases per civil policemen i.e. if burden on police is higher, crime rate is also increasing (Dutta and Hussain 2009). Rate of Crime against property is found strongly related with number of police per lakh population i.e. if number of police is increasing; crime against property is also increase. This can be explained other way round that when property crimes are higher, the deployment of police is higher. Same result is found for crime against body whereas crime against women is related with unit cost per civil policeman and number of arrests i.e. if these two are increasing CAW is also increasing. This reveals inherent flaws in the criminal detection and corrective system. There is need for reforming the penal system to enable this system to rectify the behavioral pattern of criminals through education and the imparting of technical and vocational training, so that they can return to the mainstream after their release (Dutta and Hussain 2009).

3.7 Conclusion

In this chapter the variables are selected from the crime studies done by various scholars. Correlation between IPC crime rate and different socio-economic variables are calculated and it is found that variables like unemployment rate, houseless population, and share of young male population in total population, urbanization, literacy, migrant population and population density are positively related whereas dependency rate, sex ratio and Scheduled Caste population are negatively related with crime rate. But simple correlation does not tell that how much one variable determines the crime rate keeping other variable fixed hence

²⁸ For details of regression analysis go to tables in appendix A. 19 to A. 22

regression analysis was done in order to know the real causes behind the crimes. It is found that three variables namely unemployment rate, non working population and SC population are significantly related with crime rate where last two are negatively related with crime rate i.e. higher the unemployment rate, higher the overall crime rate whereas higher the SC population and non working population to total population, lower the crime rate. All these three variables are found capable to explain 67% of the variation together. Crime rate against body is found significantly related with only two variables- rate of unemployment and non working population whereas crime rate against property is significantly related with only unemployment. Crime rate against women is significantly but negatively related with only one variable SC population to total population.

In the last of this chapter the effect of deterrence has been tried to find out. This study is done for NCT only. When a regression analysis was run it is found that IPC crime rate is significantly related with only cases per civil policemen i.e. if burden on police is higher, crime rate is also higher (Dutta and Hussain 2009). Rate of Crime against property is found strongly related with number of police per lakh population i.e. if number of police is increasing; crime against property is also increasing. This can be explained other way round that when property crimes are higher, the deployment of police is higher. Same result is found for crime against body whereas crime against women is related with unit cost per civil policeman and number of arrests i.e. if these two are increasing, CAW was also increasing. This reveals inherent flaws in the criminal detection and corrective system. There is need for reforming the penal system to enable this system to rectify the behavioral pattern of criminals through education and the imparting of technical and vocational training, so that they can return to the mainstream after their release (Dutta and Hussain 2009). Main findings can be concluded as follows:

- Unemployment rate is positively whereas non-working population and SC population are negatively but significantly related with IPC crime rate.
- Among deterrence variables, only number of cases per civil policemen is significantly related with IPC crime rate.
- IPC crime rate against property is significantly and positively related only with unemployment rate.

CHAPTER-4

CRIME ANALYSIS BASED ON NEWS PAPER REPORTING

4.1 Introduction

Scholars like Herbert 1976, Bratingham and Bratingham 1975, Mayhew 1976, Jaishankar¹ 1997, Mary 1988 & 1996 postulated that place is central to the explanation of crime. But some other scholars also pointed out that processes operating at the moment of the crime occurrence should not be ignored (Clark² 1980; Davidson³ 1989, Bratingham and Bratingham 1981). Thus various circumstances like age and sex of the victim and offender, timing and place of victimization etc. are an inherent part of criminal behaviour (Clark 1980; Davidson 1989, Petersen 1987 Mccarthy and Hagan 1992). Davidson was the pioneer geographer to develop a situational typology of violence in order to highlight the very different circumstances that surrounds incidents. Accordingly, the areal magnitude of crime rates can be controlled effectively if the underpin opportunity are reduced and the social environment can be managed (Nandini 2006)

4.2 Data and Methodology

Since the data provided by 'Crime in India' does not cover the number of crime aspects, a content analysis of the most read news paper will be helpful in understanding the nature of crime in NCR. The data of 'Crime in India' do not show the place of crime incidence i.e. whether it happened within the house premise or outside. It does not give any detail about the age of victim and offender, sex of the victim and offender. It does not give any information about the relationship between victim and offender. Moreover it does not give any clue about the motive behind the crime. It does not give the timing of the crime

¹ Jaishankar. K. et al. 1997. 'Crime Mapping in India: A GIS Implementation in Chennai city Policing'

² Clark. R.V. (1980), 'Situational Crime Prevention: Theory and Practice', *British Journal of Criminology* 20: 136-147

³ Davidson. R.N. (1989), 'Micro Environment of Violence'. Pp 59-85, J.E. David and T.H. David (ed.)-*The Geography of Crime*, London, Routledge publications

incidence i.e. whether it happened in the broad day light or evening or morning or late night. It does not give monthly data of crime. But data collected from news paper gives all these details at the same time.

For the purpose of content analysis, 'Times of India' perhaps the most read news paper in Delhi-NCR, is selected. 2009 is the year for analysis. January, June and September months were selected for analysis covering the seasonality of crime as well as variations. Other widely news papers are Navbharat Times, Hindustan Times, Dainik Bhaskar but more or less they report the same crime incidences as TOI does. The main limitation of the study through the news paper is the missing information many times such as age of the offender, timing of the crime etc. and reporting of only those crimes which are sensational or news making e.g. murder, rape, kidnapping etc.

The table below is the schedule on which the content analysis is based. As seen, it covers five aspects of crime namely place of the crime, timing of the crime, sex of the victim and offender, age of the victim and offender and relationship between the victim and offender.

Table 4.1

NAME_CRIME	PLACE OF THE CRIME		TIMING OF THE CRIME			SEX OF THE VICTIM & OFFENDER				AGE		RELATIONSHIP B/T VICTIM & OFFENDER			
	House premise	Outside	Evening	Night	Day	Victim		Offender		Victim	Offender	Relative	Known	Unknown	
						M	F	M	F						

4.3 An Overview of the Content Analysis

Total 239 incidences were reported in the three months taken for analysis. But June experienced maximum number of crimes almost half of the total crimes while January recorded the least. So here we see the seasonal variation of crime. There are literature proving the fact that crime has its seasonality and usually summer experiences maximum number of crimes.

Table 4.2 Crime Data collected from the News Paper

NAME_CRIME	PLACE OF THE CRIME		TIMING OF THE CRIME			SEX				AGE		RELATIONSHIP		
	House premise	Outside	Evening	Night	Day	Victim		Offender		Victim	Offender	Relative	Aquaint	Unknown
						M	F	M	F					
Murder	29	36	14	21	45	45	20	51	6	30	37	16	18	28
Robbery	9	25	6	11	14	19	6	27	1	44.4	27.4	1	0	33
ATM	7	19	7	7	12	17	9	26	0	34	30	6	7	13
Rape	13	9	5	6	7	1	21	22	0	17.5	30	4	16	2
Theft	5	12	2	3	9	7	2	15	0	52	30	0	2	15
Kid & Abduction	1	14	5	3	7	8	7	15	0	13	28	1	4	10
Hurt	2	10	6	2	3	9	3	12	0	30	27	0	3	9
Cheating	0	11	1	0	1	7	2	10	2	45	38	0	2	8
Burglary	10	0	3	2	4	4	0	7	0	37	0	0	0	10
Dacoity	2	2	2	2	0	2	0	4	0	39	25	0	2	2
CHNMM	0	4	0	1	2	4	0	4	0	33	32	0	1	3
Molestation	0	4	2	0	2	0	4	4	0	17.5	28	0	2	2
CBT	0	4	0	0	3	3	0	3	0	0	30	0	1	3
Dowry Deaths	3	0	3	0	0	0	3	2	1	25	39	3	0	0
Cruelty at Home	2	0	1	1	1	0	2	1	0	22	55	2	0	0
Sex.Harassment	1	0	0	0	1	0	2	2	0	22	30	1	1	0
Total	81	155	65	52	89	129	81	207	10	30.4	29.7	33	59	140
Missing info	3		33			29		22		159		10		

Source: Compiled from reporting of Times of India

Table 4.3 Month wise Crime Data in NCR

Crime incidences	% to total crimes	Months
112	47 %	June, 2009
82	35 %	September, 2009
45	18 %	January, 2009
239	100 %	Total number of crimes

Source: Calculated from the Times of India

Table 4.4 Crime data according to crime type and different Aspects

CRIME	PLACE OF THE CRIME		TIMING OF THE CRIME			SEX				AGE		RELATIONSHIP		
	House premise	Outside	Evening	Night	Day	Victim		Offender		Victim	Offender	Relative	Aquaint	Unknown
						M	F	M	F					
CAB	39	83	32	34	69	83	39	108	6	28	31	23	33	63
CAP	26	39	13	18	27	32	8	53	1	43	27	1	4	60
CAW	19	9	9	7	9	1	28	27	1	21	36	10	17	2

Source: Calculated from the Times of India

Place Aspect: when taking all the crimes together, it is found that most of the crimes (65%) were committed outside. It is so because usually some crimes committed inside the house premise are less recorded than those of committed outside for example- rape, cruelty at home, other crimes against women. A social stigma is also attached to such crimes.

Timing Aspect: I have divided the day into three parts-

- Day time (6 a.m. to 6 p.m.),
- Evening (6 p.m. to 10 p.m.)
- Night (10 p.m. to 6 a.m.)

More crimes are found to be committed in broad day light may be because robbery, theft, kidnapping & Abduction, attempt to murder (ATM), hurt like crime usually takes place in day time. But evening time is more important because its duration is four hours only but receiving large number of crimes slightly less than day time crimes. Evening time is the time when urban areas see maximum rush, providing more opportunity for crime.

Sex of the Victim & Offender: it is one of the most important aspects of crime. Who are the victims? Who are the offenders? Who is committing what crime? These help to understand the nature of crime over space and time. Most of the victims and offenders are male as usual. This supports the finding of earlier researches that men are more violent in nature. (Hasenpunsch)⁴ It is important to note that out of 239 only 10 offenders are females. That means a good sex ratio can lower the crime rate.

Relationship Aspect: The relationship aspect has been divided into three categories-

- Relative or family members
- Known to victim
- Unknown to victim

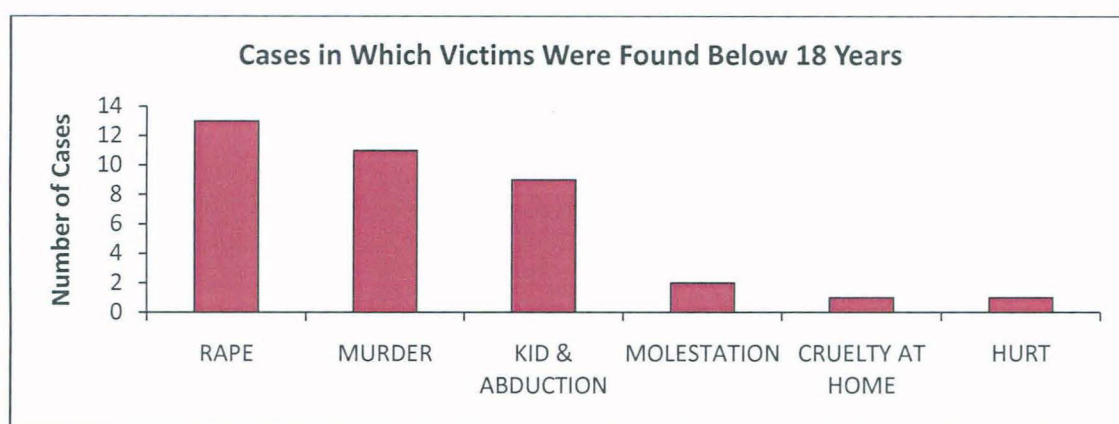
Relationship between victim and offender is very crucial to understand the seriousness as well as social structure of the society. Because if offenders are relative or known to victim, then it is understandable that social bond are not very strong. And if offenders are family members then is very obvious that family structure is weak and such crimes are very tough

⁴ B. Hasenpusch (1979), 'Future Trends of Crime in Canada' *Canadian Police College Journal* Volume:3 Issue:2 Dated:(1979) Pages:89-114

to be stopped. Although most of the offenders were unknown to the victims, but still in large number of cases, offenders were relative and known to victims (40%).

Age Aspect: it is important to know the age of both victims as well as offender in order to understand the vulnerability setting and policy implementation to lower down the crime rates. Whether most of the victims are underage, between 20 to 35 years or elderly? . Similarly for the offenders can be the case. What is the average age of victims as well as offenders? And which type of crimes these aspects are changing for?

Figure 4.1 Cases in which Victims were found below 18 years fo age



Source: Calculated from the news paper reporting

Above table is showing the crime cases in which the ages of victims were found below 18 years. Rape and kidnapping are apparently the crimes in which the victims are easy targets or minimum opportunity cost targets. Through the content analysis it is found that average age of victims and offenders are 30.4 and 29.7 years respectively. This says that most of the victims as well as offenders belong to same age group. 35 victims were found to be below 18 years of age while only 2 offenders were found below 18. This difference is found due the large number of underage rape cases. Times of India reported that a recent study based on 150 cases referred to juvenile crime court in Delhi, revealed that 79 of them were booked for elopement/rape, 12 juveniles were arrested for rape/attempt to rape and so on. And the remaining was arrested for property offences. Thus juvenile delinquents increased in India by committing large number of violent crimes.

The relation between crime and youth is not a new phenomenon, but the important question is about motive or about the factors which lead individuals to commit crime. If someone is very poor or unemployed and even not able to meet the basic necessities of their existence and then he/she is engaged in crime. Most of the offenders in urban areas are youths and a large number of them belong to elite families. Commenting on the similar situation Dipankar Gupta⁵ writes, "People who usually break the law in this country belong to this so called elite class. It is another matter that prison statistics do not reflect this fact." In another example, the finding of police officer Amod Kanth is worth mentioning. While analyzing the heinous crimes and those who commit them, he found that in 1998, nearly 93% of the criminals were first timers, belonging to the age group of 16-15 years, and surprisingly, a large number of them happen to belong to well to do families. (Quoted in the article of Krishna Pandey, *The Observer*, 17 May 1999). The phenomena of the engagement of elite urban youth in criminal activity is emerging as a new social problem. One can easily observe their violent activities, in and around universities, cinema halls, restaurants, nightclubs etc. it seems as if they want to exploit everything, consume everything, paying absolutely no heed to genuine need and whenever they do not succeed in getting their desired object, they resort to criminal behaviour. They go towards criminal activities not because of some compulsions of their basic needs, but for the sake of pleasure or to assert their social positions in the society. The notion of elitism becomes crucial here because of their elitist background, they are able to manipulate the state apparatus. (Amit kumar 2006)

The chief purpose of education is to connect the individual to society and make them responsible members of the group. Undoubtedly, one of the main reasons of the indulgence of elite youths in criminal behaviour is that either educational system of our times is not being successful in this job, or its preference itself has changed and instead of connecting

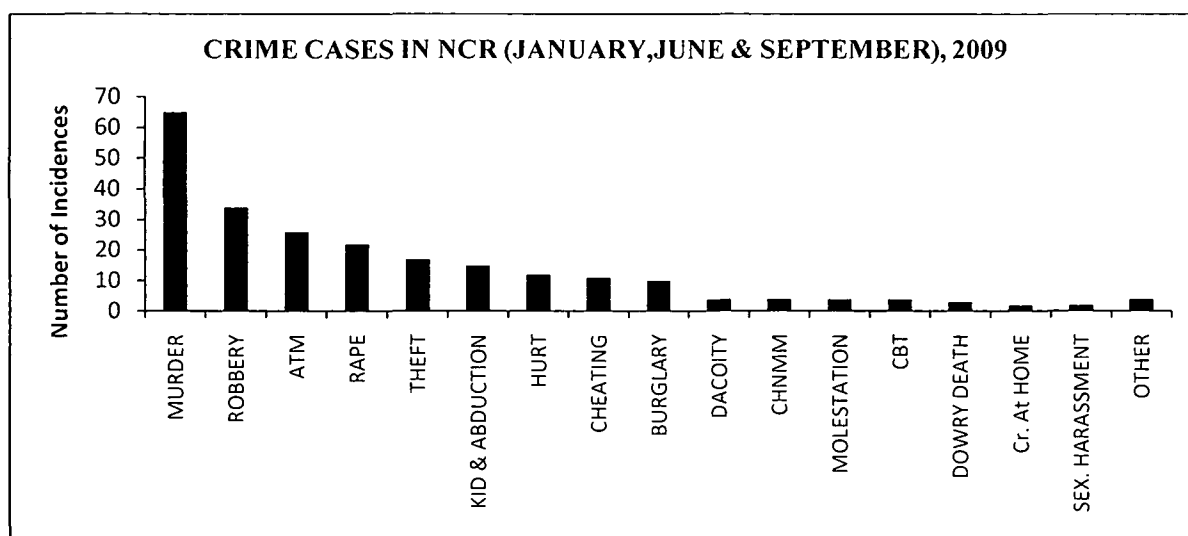
⁵Gupta Dipankar (2000), *Mistaken Modernity: India between World*, pub. Harper Collins publisher India

people from society, it is encouraging the notion of individual success and quest for individual satisfaction more. (Amit Kumar 2006)⁶

Attempts have also been made by several researchers to study the extent of crime against women in India. Pattanaik analyzed the incidence of rape along with estimated year population in different states and union territories of India. He observed that maximum number of rape victims belonged to the age group of 16-30 years. Secondly, the rape against children was increasing very fast. Thirdly the maximum number of arrested persons in rape cases belonged to the age group of 16-30 years. Fourthly it was interesting to observe that the victims and offenders belonged to the same age group in 16-30 years. Fifthly the rate of conviction was very low in comparison to the cases reported and taking into consideration the violent nature of the crime.

4.4 Share of Different Crimes in Total IPC crimes Reported

Figure 4.2



Source: Calculated from the reporting of news paper

⁶Kumar, Amit (2006), *criminal behaviour among elite urban youth*- unpublished Dissertation submitted to The centre for the study of social systems, SSS, JNU PP 86-92

What is noticeable here is that those crimes have larger share which are usually not hidden from public e.g. murder, robbery, attempt to murder, theft, kidnapping & abduction. This is perhaps the biasness of news paper. When all the crimes are categorized, it is found that Crime against Body has the largest share.

Table 4.7 Incidences and share of crime types

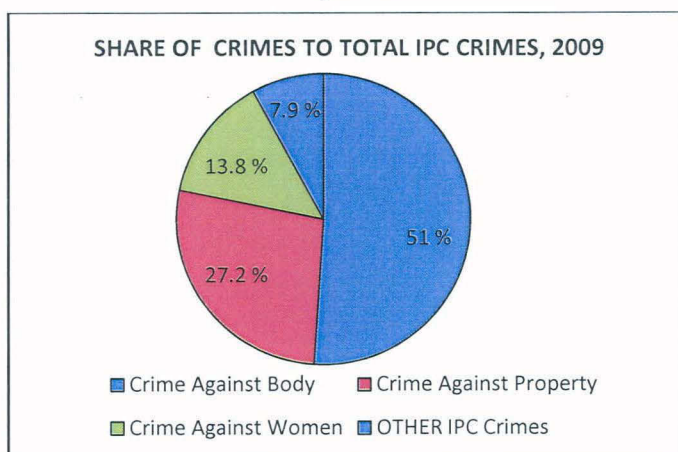
	Crime Against Body	Crime Against Property	Crime Against Women	Other IPC Crimes	Total IPC crimes reported
No. of Cases	122	65	33	19	239
% to Total IPC	51.0	27.2	13.8	7.9	100

Source: Calculated from the content analysis of news paper

4.5 Share of Crimes to Their Respective Crime Categories

There are three crime categories- CAB, CAP and CAW. When we look at CAB (crime against body), we found that murder alone shares more than half of the total crime against body. And next is attempt to murder. This shows the seriousness of the crime scenario in NCR. Similarly robbery alone shares more than half of the total crimes against property. No need to say that robbery is more violent than theft or burglary.

Figure 4.3



Source: Calculated from the content analysis of news paper

While the British define home as the 'last fortress', home has often been referred to as safe heaven also but data shows that's not true at least in case of crimes against women as Nandini (2006)⁷ found that 64% CAW and 42% CA males committed at residence. But looking at the Crime Against Women, we see that rape alone shares two third of the total CAW which is the worst form of crime against women. One thing is noticeable here is that cruelty at home is less reported as compare to the Crime in India (NCRB). That may be because of lesser reporting in news paper only as reporting in police station does not necessarily mean publishing in news paper.

Table 4.8 Incidences and share of crimes in crime categories

NAME_CRIME	INCIDENCES	% SHARE
MURDER	65	53.3
ATTEMPT TO MURDER	26	21.3
KIDNAPPING & ABDUCTION	15	12.3
HURT	12	9.8
CULPABLE HOMICIDE N.A. TO MURDER	4	3.3
TOTAL CRIME AGAINST BODY	122	100
NAME_CRIME	INCIDENCES	% SHARE
ROBBERY	34	52.3
THEFT	17	26.2
BURGLARY	10	15.4
DACOITY	4	6.2
TOTAL CRIME AGAINST PROPERTY	65	100
NAME_CRIME	INCIDENCES	% SHARE
RAPE	22	66.7
MOLESTATION	4	12.1
DOWRY DEATHS	3	9.1
CRUELTY AT HOME	2	6.1
SEX. HARASSMENT	2	6.1
TOTAL CRIME AGAINST WOMEN	33	100

Source: Calculated from the content analysis of news paper

⁷ Nandini. (2006), *Social Space and Crime in Delhi*. Unpublished Dissertation submitted to Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

Above findings indicates that share of violent crimes is very high because category of violent crimes includes- murder, attempt to murder, culpable homicide not amounting to murder, rape, kidnapping & abduction, robbery, dacoity and dowry deaths. Thus if we calculate the share of violent crimes, it comes 72% to total IPC crimes reported from news paper.

Crime against women: From the above table it is very clear that crime against women has least share in total reported crimes. When we compare the place of crime, we see that almost 60% crime against women took place within the house premise. This depicts that females are comparatively less secured in their home. Moreover 29 offenders (out of 33) were either relatives/family members or were known to the victim. If we compare the average age of victim and offender, we found that average age of female victims is very less as compared to that of offenders. More over out of the total crime against women (33), half of the (17) female victims are below 18 years. All the offenders were found males except one and this proves that women are less violent in nature against women.

Table 4.9 A comparison of the attributes of crime between crime categories

A COMPARISON BETWEEN DIFFERENT CATEGORIES OF CRIME			
CRIME AGAINST BODY	CRIME AGAINST PROPERTY	CRIME AGAINST WOMEN	ATTRIBUTES
122	65	33	TOTAL NUMBER OF CASES
39	26	19	CRIME WITHIN HOUSE PREMISE
83	39	13	CRIME TOOK PLACE OUTSIDE
38	13	11	HAPPENED IN EVENING
27	18	7	HAPPENED IN NIGHT
45	27	11	HAPPENED IN DAY LIGHT
83	32	0	VICTIMS WERE FOUND MALE
39	8	33	VICTIMS WERE FOUND FEMALE
108	53	31	OFFENDERS WERE FOUND MALE
6	1	1	OFFENDERS WERE FOUND FEMALE
28	40	19	AVERAGE AGE (YEARS)OF VICTIM
36	28	32	AVERAGE AGE (YEARS)OF OFFENDER
23	1	10	RELATIVE/FAMILY MEMBER OFFENDER
33	4	19	OFFENDER KNOWN TO THE VICTIM
63	60	4	OFFENDER UNKNOWN TO THE VICTIM

Source: Calculated from the content analysis of news paper

Crime against body: Most of the crimes against body took place outside and broad day light. Only 6% offenders were women, rest of the offenders was male. Average age of victim was less than the average age of offender. Half of the total crimes against body were committed by unknowns while rest half was done by known persons.

Crime against Property: most of the CAP was committed outside and in broad day light. All the offenders were found to be males except one. What is important to note here is that offenders were younger than the victims. And it is quite explainable too as committing property crime needs physical strength and fitness as CAP includes crimes like robbery, burglary, theft, and dacoity. Moreover younger population needs more money while usually money is possessed by aged population. In urban areas the consumerism created the greed for money among young generation. For making quick money, youths from affluent families also committing crime especially property crime. (Mousumi Dutta and Zakir hussain 2009; Mayhew)⁸

Nandini in her study found that 58% cases as CAB and 35% CAP and it is the darker night hours when crimes took place while day time crime is found higher for females. She found that it is the young adult age cohort (16-30) which is most vulnerable not the elderly.

4.6 Explanation of Some Crime Heads in Detail

Murder: The data of murder is the most reliable crime in terms of correct reporting. Generally it cannot be hidden. Perhaps that is why it has highest share in the total reported crimes from news papers. Murder is generally committed in day time outside the house. Most of the victims as well as offenders were found males. Looking at the average ages of both the victims as well as offenders are of young age (below 30 years). Generally brutal act of violence commonly perpetrated by the people with whom the perpetrator had little or no personal contact and spaces are safer than others.

Average age of offenders was slightly less than that of victims hence higher young population, higher the murder rate. Literature proves that young population is positively

⁸ Dutta Mousumi and Husain Zakir (2009), 'Determinants of crime rates: Crime Deterrence and Growth in post-liberalized India', MPRA Paper No. 14478 posted 05. April 2009 *Economic Perspectives*, 10(1): 43-67.

related to the crime rate. Half of the murder was committed by known persons. (Hasenpunsch)

Rape: It is most heinous and terrorizing crime in the society because it affects not only the victim but also the family of the victim and society. It stigmatizes the victim's family and community.

Table 4.10 A detail about the cases of Murder and Rape

Murder	Rape	ATTRIBUTES
65	22	TOTAL NNUMBER OF CASE
29	13	CRIME TOOK PLACE WITHIN HOUSE PREMISE
36	9	CRIME TOOK PLACE OUTSIDE
14	5	HAPPENED IN EVENING
21	6	HAPPENED IN NIGHT
45	7	HAPPENED IN DAY LIGHT
45	1	VICTIMS WERE FOUND MALE
20	21	VICTIMS WERE FOUND FEMALE
51	22	OFFENDERS WERE FOUND MALE
6	0	OFFENDERS WERE FOUND FEMALE
30	17.5	AVERAGE AGE (YEARS)OF VICTIM
27	30	AVERAGE AGE (YEARS)OF OFFENDER
16	4	RELATIVE/FAMILY MEMBERS OF THE VICTIM
18	16	OFFENDER KNOWN TO THE VICTIM
28	2	OFFENDER UNKNOWN TO THE VICTIM

Source: Calculated from the content analysis of news paper

Most of the rape cases were committed within the house premise. This shows that women are not protected in their home even. The average age of the victims is found below 18 years means unmarried girls are the main targets. Almost all the offenders were known to victims except two. This is the worst situation alarming that women must be careful of their known persons. This also shows the decline of social values in the society in urban areas.

Robbery: Cases of robbery are increasing in urban areas as it is proving to be an easy way of making quick money for youths. It is found from the analysis that most of the robberies are being committed outside the house in broad daylight. If we look at the average age (44

and 27 respectively) of the victims and offenders, we can easily say that almost all the robberies are done by youths aged between 20-35 years.

Other crimes like Attempt to Murder are important to mention. All the offenders were found to be males. In case of Theft most of the cases occurred outside in day time because urban areas are crowded in day time and also provide more opportunity for theft in daytime than in night when city is almost closed. In case of kidnapping and abduction, all the crimes were committed outside. Important thing is that one third of the offenders were known to victims. Average age of victims was 14 years.

4.7 Classification of Victims and Offenders

Age of victims and offenders tell many important aspects of crime like which age group is most vulnerable? Which age group most of the criminals belong to? Which age group should be targeted in order to lower down the crimes in the area? What policy should be adopted to combat the crime?

Table 4.12 Age wise classification of Victims and Offenders

AGE OF THE VICTIMS & OFFENDERS				
AGE GROUP	VICTIM	% SHARE	OFFENDER	% SHARE
< 18	37	21.0	2	1.5
18-30	64	36.4	76	55.5
30-60	65	36.9	57	41.6
60+	10	5.7	2	1.5
TOTAL	176	100	137	100

Source: Calculated from the content analysis of news paper

From the above table it is obvious that offenders are younger than victims. The victims are in large numbers in all age groups but offenders are concentrated in 18-30 age group. A considerable number of victims fall in the category of below 18, but there are negligible numbers of offenders below 18 years. That means victims do not have control over their being victim but offenders have control over their being offender.

Table 4.13 Age and Sex wise classification of Victims

AGE OF THE VICTIMS & OFFENDERS				
AGE GROUP	MALE VICTIM	% SHARE	FEMALE VICTIM	% SHARE
< 18	15	15	23	30.3
18-30	32	32	31	40.8
30-60	45	45	20	26.3
60+	8	8	2	2.6
TOTAL	100	100	76	100

Source: Calculated from the content analysis of news paper

When we divide the victims and offenders into male and female, a new picture emerges. Most of the male victims are concentrated in the age group of 30-60, but in case of female victims more than 70% are concentrated in the age group below 30 years. This is so because generally males are targeted for economic reasons but females for their beauty and body. Hence females are paying for their being female.

Table 4.14 Age and Sex wise classification of Offenders

AGE OF THE VICTIMS & OFFENDERS				
AGE GROUP	MALE OFFENDER	% SHARE	FEMALE OFFENDER	% SHARE
< 18	2	1.6	0	0.0
18-30	72	56.3	4	33.3
30-60	52	40.6	7	58.3
60+	2	1.6	1	8.4
TOTAL	128	100	12	100

Source: Calculated from the content analysis of news paper

Above table explains itself that more than half of all offenders belong to the age group of 18-30 while more than half of the female offenders belong to the age group of 30-60. This is so because most of the crimes committed by females are confined to their family like dowry death, cruelty at home, murder of children and husband etc, and all these are done by aged women.

4.8 Explaining the Nature of Crime through Some Case Studies

Case Study 1.

Aarushi Murder Case⁹

On the morning of May 16, 2008, Aarushi Talwar, a 14-year-old Class IX student of Delhi Public School in Noida and the daughter of a successful dentist couple, was found dead with her throat slit in her parents' home at Jalvayu Vihar in [Noida, Uttar Pradesh]. Suspicion immediately fell on the f-wing the trail of blood, Noida police found the dead body of the missing domestic help, Hemraj, on the terrace. K.K. Gautam said that he saw some clues in Arushi Talwar's bedroom. However, he did not reveal the full extent of what he understood he saw. Police investigations were on-going and details could not be revealed for fear of hampering the investigation. After a disorganized investigation, the police arrested Dr. Rajesh Talwar, the father of the deceased girl (works at Fortis Hospital in Noida) on May 23, 2008, charging him with having committed the double murder. He confessed to killing Aarushi and Hemraj to the Police on the night of his arrest but later retracted his confession. His wife, Dr. Nupur Talwar (Arushi Talwar's mother, runs a dental clinic), accused the Noida police of framing him, and requested Uttar Pradesh chief minister Mayawati to transfer the case to the Central Bureau of Investigation (CBI).

The case received nationwide attention, and has become symptomatic of what most people believe are recent unsavory tendencies in the Indian media, such as sensationalism, the urge to "overkill" and to carry out a public trial-by-media. The Union Minister for Women and Child Development, Renuka Chowdhury, condemned the police for what she called the "character assassination" of a child victim and called for a commission of legal experts to investigate whether specific legislation existed or needed to be passed in order to allow filing of defamation suits against the Noida police, a government agency. In addition, the focus by 24-hour cable news on speculative aspects of the personal lives of the father and his dead daughter, and the media frenzy that compromised the privacy of the families involved in the case. The case has also attracted a lot of public attention as a bizarre, with

⁹ http://en.wikipedia.org/wiki/Noida_double_murder_case 19 July, 2011

the CBI reporting that the agency had been receiving a large number of telephone calls from members of the general public, giving investigators ideas and advice on how to solve the case.

Shoddy Investigation:

CBI investigators charged the Noida police with a shoddy investigation, which, it claimed, had resulted in the destruction of 90% of the evidence on the crime scene. The reasons for this shoddy investigation should be investigated. Perhaps, the reasons lie in the lack of trained staff to conduct a fool proof investigation, not only in Uttar Pradesh but in the entire country.

Aside from not capturing the finger prints on the whisky bottles in Hemraj's room, the police allowed the media to freely roam the crime scene rather than restricting access to the flat.

In addition, the police allowed doctors, not specifically trained in forensic pathology, to conduct the autopsies of Hemraj and Aarushi while it is established procedure to lift fingerprints (of both murderers and victims) from the skin of the victims. The doctors entrusted with the autopsies neglected to call forensic scientists to lift fingerprints from the cadavers. On August 11, 2008, the CBI reported that it had evidence pointing to the presence of a fifth person in the house at the time of the murders, as finger prints not matching any of the suspects or occupants of the house were found on the whisky bottles.

Experts at the All India Institute of Medical Sciences (AIIMS), who are working closely with the CBI, have raised questions over one entry in Arushi's post mortem report. As per law, it is mandatory to write about it in the post mortem report which is legal evidence. But in this case no further investigation was done on the evidence that they got from natural orifices. Pinaki Mishra, Dr Talwar's counsel, strongly reacted to the closure report, calling it a pack of innuendos. "This is the most unfair verdict that could have been given. They (Talwars) are being pronounced guilty until proven innocent. Without having filed a chargesheet, the CBI is condemning them to live the life of a guilty. I have no doubt that the entire investigation is derailed by taking the line of UP police - just damn them without evidence," he said.

The CBI does not debunk the defence of Talwars completely, with sources acknowledging that the probe failed to establish the motive behind the murder. They also said the dummy run conducted by them to verify Talwars' claim that they could not have heard of what was happening in the next room because of noise from their AC, shows that they could have slept through the crime. It also says the narco tests run on the couple show only "minor deceptions". But the report lists "circumstantial evidence" to say why they continue to treat Dr Rajesh Talwar as the prime suspect in the case. Sources claim the "circumstantial evidence" is so strong that Dr Talwar could have been charge sheeted had he not been a parent. The closure report says the crime scene was changed before the police was called—something that is not associated with a regular criminal.

Sources said that Noida police's failure to secure the crime scene was another reason why the agency was left only with circumstantial evidence. Blood stain on the whisky bottle found in Talwars' house did not match the samples of either Aarushi or Hemraj. The report asserts that both Aarushi and Hemraj died of injuries from a blunt weapon, and that the cuts on their neck were post-mortem; inflicted when they were already dead.

In this case we see the role of media, politics and police and CBI affecting the case very significantly. This case may be an example of honour killing. Since the victim and offender belong to an affluent family, case has been molded as media sensation. As offender has a good reputation and influence, the investigation did not follow the right way.

Case Study 2.

Nearly a week after a girl from the North-East was abducted and gang-raped in a tempo in the city, the Delhi Police, it seems, are not good enough to arrest the rapists. The victim was walking towards her home in Mochi village near Dhaura Kuan in south Delhi when the five men in a tempo abducted her and took turns to rape her. She was later dumped in Mangolpuri after which she approached the police¹⁰. The police have prepared only a few sketches but have made no arrests. DCP (south) HGS Dhaliwal said the police had

¹⁰ <http://indiatoday.intoday.in/site/story/delhi-rape-case-trail-leads-nowhere/1/121631.html>, Mail Today Bureau | New Delhi, November 30, 2010

detained four persons and they were being interrogated. Preliminary investigations revealed they had earlier been involved in petty crimes in the area. Besides, police teams are focusing on Mangolpuri and surrounding areas. From the very beginning, investigators have believed the accused had a fair knowledge of the Mangolpuri area. "The woman was abducted from Dhaula Kuan and taken to Mangolpuri. She was raped by five men and abandoned in a quick span of 40 minutes, clearly indicating the accused were familiar with Mangolpuri," a police officer associated with the investigation said.

Dhaulta Kuan has been notorious for rape cases. This case also shows the unsafe environment for women. This also shows the unsafe travel in auto. Perhaps a good public transport system can lower such crimes like gang rapes.

Case Study 3

The kidnap and murder of call centre employee, Jigisha Ghosh¹¹, 28 a BPO firm manager, outside her south Delhi house on March 17 this year rocked the national capital. Police had stated that the case of Jigisha Ghosh murder was a case of preplanned robbery. As stated in the reports, Jigisha Ghosh had been forced to give the identification number of the ATM card. Police sources had stated that the assailants had waited for the lady in CPWD colony while she had been dropped at her home on 17th March night. Three suspects related to this murder had been detained by police. The assailants had withdrawn Rs.25, 000 from two ATM accounts of Ms. Ghosh. After this they had driven to the Bhatkal Lake of Faridabad for dumping the body of the lady. It had been stated by the official sources that the case appeared as case of preplanned robbery. Such an observation had been made after police had scanned the footages of CCTV on ATM from which the suspects had withdrawn money from the card of Ghosh and purchase expensive shoes and watches. The interrogation results of the colleagues and friends had also made them to consider that it was a case of preplanned robbery. It had been stated by the sources that Ghosh had been busy to talk on cell phone till it was 4:25 in the morning. The security guard, colleague and cab driver thought that she had gone to her flat but she was at downstairs which had given the assailants a chance to attack.

¹¹ <http://www.encyclocenter.com/Jigisha-Ghosh-23591.html>

This case was again an example of making quick money by youths. A preplanned robbery by a gang in Delhi has become a common phenomenon as a preplanned group work reduces the opportunity cost of the crime. It is apparent that security infrastructure like close circuit television cameras are a good measure to prevent the crime.

Case Study 4

Six months after television journalist Soumya Vishwanathan¹² was shot dead, Delhi Police claimed to have cracked the case with the arrest of four youths who were also allegedly involved in last week's murder of a call centre executive. Vishwanathan was found shot dead in her car on September 30 2009 while returning home after work around 3.30 am. Robbery is said to be the motive behind both the murders i.e. Jigisha Ghosh, which took place in a posh locality of Vasant Vihar in south Delhi within a span of six months. Both victims were returning from work in the wee hours when they were attacked. Joint Commissioner of Police (South) Ajay Kashyap said in Jigisha's case the motive was 'purely to rob her and not to molest her'. The body of Ghosh was found in Faridabad on March 19, 2009. In both cases, there were no signs of sexual assault. The arrest came following information that a group of criminals, who were allegedly involved in the murder of Ghosh, were moving around Nelson Mandela Marg near Vasant Vihar. The gang followed her for a while and there was an exchange of words. Perhaps she reacted and provoked them and the gang shot her to death.

These two cases again show the greed of making quick money among youths as motive was to rob not molest. Timing of the crime is important here because chances of getting caught were very less in the early morning (in case of Soumya).

¹² <http://www.rediff.com/news/2009/mar/24soumya-vishwanathan-murder-case-cracked-four-held.htm>

4.9 Changing nature of crime in Delhi: Involvement of youths¹³

Delhi's crime scene is seeing an abnormal change in the profile of criminals. Figures released by the National Crime Records Bureau show that while youths aged 18-30 years were behind 46.5% of all crime nationally, in Delhi, people in that age group committed 57% of all crime. About 12% of criminals caught in the capital were educated. And 85% to 93% were first timers, and a whopping 57% of whom were younger than 25.

Racket skills of the young:

January 22, 2011: An MBA student was a part of the gang of professional armed robbers who were arrested in South Delhi. The gang also included a regional sales manager with ESSAR group and the third member was a postgraduate in economics and former MNC executive. They lived lavish lifestyles and needed extra money as their earnings could not finance their luxuries. They robbed their victims at gunpoint and bankrolled their expensive habits and lifestyle with the money that they stole.

January 22, 2011: Class XII student of Delhi Public School stole his neighbour's car at Alaknanda locality of South Delhi. The 18-year-old was arrested in Karol Bagh, where he hoped to sell the stolen Maruti 800. The boy's father was a general manager at BHEL and his mother was a lecturer at a polytechnic college. His elder brother was studying engineering at a reputed Delhi college.

Jan 23, 2011: Akshaya Kumar, 19, a college student was one amongst the four arrested for shooting and robbing a man. A pistol, cartridges, bikes and four mobile phones were recovered from the gang. They reportedly approached a group of professional criminals to carry out this meticulously well-planned robbery.

December 28, 2010: A handful of students were reported to be a part of a sex racket - in order to earn a quick buck - busted in Rohini, which was being run in the garb of an escort agency.

October 30, 2010: Vikas Jain, 22, a BCA (Bachelor of Computer Applications) graduate from IP University was one among a gang that was arrested in five cases of burglary amounting to more than Rs 55,000 in cash and 100gm of gold jewellery from South Delhi.

¹³ http://articles.timesofindia.indiatimes.com/2011-04-08/delhi/29396040_1_crime-graph-gang-south-delhi, Friday, 8th April 2011 07:22:29 pm

The youths got involved in betting and had no recourse but to pay the money lost by taking a loan from a local money-lender at 10% monthly interest. To pay their mounting debt, they resorted to robbery and crime.

October 29, 2010: 19-year-old Rahul Gupta craved the affluence that his friends enjoyed. He came in contact with three other conspirators after failing in Class XII, and murdered two school kids. Rahul, along with four members of a west UP gang, lured the two victims out of the city by promising them a good time. The gang had reportedly also done the same with many other students earlier.

September 25, 2010: A 21-year-old Delhi University female student was arrested for running a gang of thieves. The gang of seven robbers stole at least Rs 2 crore worth of goods, including a few cars. The gang was run by Mansi, a young B.Com student.

July 3, 2010: Police busted a racket in which engineering graduates and B.Tech students, including one from IIT Delhi, impersonated aspirants from Bihar, Orissa, Jharkhand, UP and Delhi at entrance exams. They would scout for talented students willing to impersonate for money, get them to write the exam on someone else's behalf and earn Rs 4 lakh per successful candidate.

August 19, 2010: Hitesh, 19, and Shakti, 21, were arrested for allegedly duping two prospective candidates of Rs 4.17 lakh each with the false promise of admission to a prestigious DU college in North Campus. The two took the victim's certificates and mark-sheets and even gave them a fake receipt.

April 14, 2010: Two DU students - Phool Kumar, 23, BSc, and Shiv Kumar, 21, BA - looted cars in Alipur, and used the vehicles to smuggle premium liquor brands into Ahmedabad. They wanted easy money for a lavish lifestyle. Six months ago, Phool Kumar allegedly bought a pistol from UP and then roped in his friend to smuggle liquor from Haryana into Gujarat where alcohol is banned. The two had earlier looted three luxury cars at gunpoint.

February 28, 2010: A management graduate and a Delhi University student were two among the four involved in a high-profile sex racket run by Shiv Murti Dwivedi alias Sant Swami Bhimanand Ji Maharaj Chitrakoot Wale (39), a self-styled Godman.

Thus it can be said that most of the youths involved in crime were found belonging to affluent families. Moreover they were found well educated. In most of the cases the motive

behind the crime was to make quick money. Most of them were found first timers. Even some of the criminals were in job but for more lavish life they got indulge for more and quick money.

4.10 Conclusion

Thus in sum, we can say that

- Maximum numbers of crime were reported in the month of June which is in accordance with findings of earlier studies.
- Most of the crimes (65%) were committed outside in broad day light. Out of total offenders, 97% were found to be male offenders. This proves that women are less criminal or violent in nature.
- 60% of total crimes against women were committed within the house premise.
- Half of the total female victims were found of age below 18 years.
- In case of rape, most of the rapes were committed within the house premise and all except two were committed by known offenders.
- The average age of the rape victims were found below 18 years whereas it is found 30 for rape offenders. This shows that women are not protected in their so called safest place 'home' even.
- Overall offenders were found younger than victims.
- Most of the male victims are concentrated in the age group of 30-60, but in case of female victims more than 70% are concentrated in the age group below 30 years.

CHAPTER-5

SUMMARY and CONCLUSION

On the basis of above analysis and discussions many conclusions can be drawn. Crime is an act, which is both prohibited by law and disgusting against the moral sentiments of society. Since everybody is not criminals and crimes occur more often in some areas than in others, it is obvious that the spatial and temporal distribution of crime differs society to society. Where does crime occur and who are criminals? Not only Sociologists and criminologists but geographers also tried to answer these questions through various theoretical approaches and research studies. Human ecology is one such approach, which attempts to explain the association of social position and criminal activity (Jayamala 2008). Human ecology studies the inter-relationship of man and his spatial setting. If this ecological approach is applied to criminal behaviour, it will throw some light on the patterns of criminal activities in different parts of the society. Crime can be explored at many levels. This work is done at two levels-state level and district level. This work is perhaps the first work on National Capital Region of its nature. Apart from seeking different aspects of the spatio-temporal distribution of various types of crimes, this study also aims to find out the socio-economic correlates of crimes. The work presented here implies several avenues for improvement of the current work and for future undertakings.

Present study is divided into five chapters. First chapter is introductory in nature includes literature survey, theorization of crime, objectives of the study, research questions, data base, methodology and a brief about the area of the study. Findings of this study can be better understood in the light of the objectives of the study. The objectives, research questions and hypotheses of this study are as follows:

OBJECTIVES:

- To examine the spatial pattern and temporal variation of various crimes in India and Delhi-NCR.

- To evaluate the incidence and prevalence rates of crimes in Delhi-NCR and finding out the patterns of incidences and prevalence rates.
- To find out the relationships and determinants of the changing nature of crimes in Delhi NCR.
- To analyze the changing nature of crimes in Delhi-NCR (i.e. the age, sex, time and place, type and relational aspects of crimes etc) with help of content analysis of news papers.

Hypothesis:

- Higher the urban population to total population, higher the crime rate
- Higher the sex ratio, lower the crime rate
- Rate of unemployment is directly related to crime rate
- Higher the share of young population in total population, higher the rate of crime
- Greater the economic development in the area, higher the crime rate especially crimes against property

Research Questions:

How do the different crimes intersect with the geographies of social, economic, and demographic characteristics of the area?"

Sub-Questions:

- Do certain types of crime cluster together spatially?
- What are the variables that determine the crimes rates?
- What is the most vulnerable section of the society?

First of all an effort is made to place Delhi-NCR in a proper frame. In order to understand the nature of crime all cognizable IPC crimes are divided into 3 categories namely crime against body (CAB), crime against property (CAP) and crime against women (CAW) as per the NCRB classification.

Thus an attempt is made to analyze the occurrence and prevalence rate of crime at national level so that Delhi's position among the states can be found out in the second chapter. A spatio-temporal analysis revealed that Delhi is still one of the most crime prone states and especially for crime against property and crime against women.

Crime incidences are found to be concentrated in some areas. States in Gangetic belt and south India (Kerala and Tamil Nadu) showed the concentration of crime incidences on the basis of their sizes. But growth in the incidences are found higher in smaller states like Lakshadweep, Tripura, Sikkim, West Bengal, Assam, Jharkhand, Meghalaya, Haryana, Bihar and Andaman and Nicobar Islands. The share of crime types has been found changing. The shares of CAB and CAP are found more or less static over the period of 2001 to 2009 but the share of CAW to total IPC crime has gone up significantly. Although Delhi reported lowest negative growth rate for overall crimes but Delhi showed one of the highest growths for CAW.

When we see at the rate of crime per lakh population, the top 5 most crime prone states over the period 2001 to 2009 found are Chandigarh, Delhi, Kerala, Pondicherry and Madhya Pradesh have been at top, Whereas Nagaland, Uttar Pradesh, Meghalaya, Lakshadweep and West Bengal has been at bottom. Out of top five Chandigarh, Delhi, Kerala, Pondicherry are highly urbanized and have high literacy rates too. Hence one inference at least can be drawn out of this that urbanization is directly related with high crime rates. Property crime rates are found higher in economically advanced and urbanized states.

Crime concentration index is calculated in order to know that which type of crimes are concentrated where? Andhra Pradesh, Assam and Punjab are found ahead for Crime against body, whereas Delhi, Haryana and Chandigarh are at top for property crimes. Tripura, Andhra Pradesh and Orissa are found with concentrated crime against women.

When we look at NCR for district level analysis we found that maximum growth in the incidences is recorded for crime against women followed by property crimes. And when we divide NCR into two constituents- the NCT and outer NCR we see that a different pattern is emerging. On the one hand NCT recorded negative growth rate for total IPC incidences whereas outer NCR showed 33% growth. That means crimes are occurring faster in outer NCR. Property crime as is anticipated has largest share in total IPC crimes in NCR. A clear cut spatial variation can be traced in the distribution of crime in NCR e.g. Share of property crime is higher in NCT but the growth in the share of property crime is higher in outer NCR. Thus second chapter is devoted to fulfill the first and second objectives of the study.

Third chapter of the dissertation is an effort to find out the determinants and relationships between various socio-economic and deterrence variables and crimes. First of all a rationale has been given behind the selection of the variables. Variables are selected from the crime studies done by various scholars. Correlation between IPC crime rate and different socio-economic variables are calculated and it is found that variables like unemployment rate, houseless population, and share of young male population in total population, urbanization, literacy, migrant population and population density are positively related whereas dependency rate, sex ratio and Scheduled Caste population are negatively related with crime rate. But simple correlation does not tell that how much one variable determines the crime rate keeping other variable fixed hence regression analysis is done in order to know the real causes behind the crimes. It is found that three variables namely unemployment rate, non working population and SC population are significantly related with crime rate where last two are negatively related with crime rate i.e. higher the unemployment rate, higher the overall crime rate whereas higher the SC population and non working population to total population, lower the crime rate. All these three variables are found capable to explain 67% of the variation together. Crime rate against body is found significantly related with only two variables- rate of unemployment and non working population whereas crime rate against property is significantly related with only unemployment. Crime rate against women is significantly but negatively related with only one variable SC population to total population.

In the last of this chapter the effect of deterrence has been tried to find out. This study is done for NCT only. The deterrence variable selected for the study are pendency rate in police, charge sheeting rate, conviction rate, pendency in court, no of arrests, number of policemen, cases/civil policeman, unit cost per civil police (lakh), policemen/100 km² area, police/lakh population, number of motor vehicles and number of wireless equipments. When a regression analysis is run it is found that IPC crime rate is significantly related with only cases per civil policemen i.e. if burden on police is higher, crime rate will also increase (Dutta and Hussain 2009). Rate of Crime against property is found strongly related with number of police per lakh population i.e. if number of police is increasing; crime against property is also increasing. This can be explained other way

round that when property crimes are higher, the deployment of police is higher. Same result is found for crime against body whereas crime against women is related with unit cost per civil policeman and number of arrests i.e. if these two are increasing CAW is also increasing. This reveals inherent flaws in the criminal detection and corrective system. There is need for reforming the penal system to enable this system to rectify the behavioral pattern of criminals through education and the imparting of technical and vocational training, so that they can return to the mainstream after their release (Dutta and Hussain 2009).

Fourth chapter is the study of different aspects of crime with the help of content analysis of news paper. Since the data provided by 'Crime in India' does not cover the number of crime aspects, a content analysis of the most read news paper will be helpful in understanding the nature of crime in NCR. The data of 'Crime in India' do not show the place of crime i.e. whether it happened within the house premise or outside. It does not give any detail about the age of victim and offender, sex of the victim and offender. It does not give any information about the relationship between victim and offender. Moreover it does not give any clue about the motive behind the crime. It does not give the timing of the crime incidence i.e. whether it happened in the broad day light or evening or morning or late night. It does not give monthly data of crime. But data collected from news paper gives all these details at the same time. In this chapter five aspects of crime is covered- place, time, age and sex of victim and offender and relationship between victim and offender.

For covering seasonal variation, 3 months are selected for the study namely January, June and September and found that maximum numbers of crime are reported in the month of June which is in accordance with findings of earlier studies. Most of the crimes (65%) are committed outside in broad day light. Out of total offenders, 97% are found to be male offenders. This proves that women are less criminal or violent in nature and also proves that higher sex ratio will lower the crime rate. Relationship between victim and offender is very important aspect of crime to get the idea of the vulnerability and nature of crime. Although most of the offenders are unknown to the victims, but still in large number of cases, offenders are relative or known to victims (40%). Maximum cases are of murder followed by robbery and attempt to commit murder. 51% cases are crime

against body followed by CAP and CAW. One finding is noticeable that 60% of total crimes against women are committed within the house premise.

Half of the total female victims are found of age below 18 years. In case of rape, most of the rapes are committed within the house premise and all except two are committed by known offenders. The average age of the rape victims are found below 18 years whereas it is found 30 for rape offenders. This shows that women are not protected in their so called safest place 'home' even. Overall offenders are found younger than victims. When we divide the victims and offenders into male and female, a new picture emerges. Most of the male victims are concentrated in the age group of 30-60, but in case of female victims more than 70% are concentrated in the age group below 30 years.

On the basis of above findings, it is clear that all the hypotheses are proven right and most of them are significantly related with the crime.

Thus it can be concluded that crime is a complex phenomena and is determined by the interplay of various socio-economic, demographic and deterrence variables. The work presented here opens several avenues for improvement of the current work and for future undertakings.

Major findings of the study are as follows:

- Crime incidences are found to be concentrated in some areas. States in Gangetic belt and south India (Kerala and Tamil Nadu) showed the concentration of crime incidences.
- The shares of CAB and CAP were found more or less static over the period of 2001 to 2009 but the share of CAW to total IPC crime has gone up significantly.
- Crime rates are higher in urbanized and developed states like Chandigarh, Delhi, Kerala, and Pondicherry.
- In NCR, maximum growth in the incidences was recorded for crime against women.
- Outer NCR districts are experiencing higher growth rate of IPC crime in comparison with NCT.

- Unemployment rate is positively whereas non-working population and SC population are negatively but significantly related with IPC crime rate.
- Among deterrence variables, only number of cases per civil policemen is significantly related with IPC crime rate.
- IPC crime rate against property is significantly and positively related only with unemployment rate.
- Maximum numbers of crime were reported in the month of June which is in accordance with findings of earlier studies.
- Most of the crimes (65%) were committed outside in broad day light. Out of total offenders, 97% were found to be male offenders. This proves that women are less criminal or violent in nature.
- 60% of total crimes against women were committed within the house premise.
- Half of the total female victims were found of age below 18 years.
- In case of rape, most of the rapes were committed within the house premise and all except two were committed by known offenders.
- The average age of the rape victims were found below 18 years whereas it is found 30 for rape offenders. This shows that women are not protected in their so called safest place 'home' even.
- Overall offenders were found younger than victims.
- Most of the male victims are concentrated in the age group of 30-60, but in case of female victims more than 70% are concentrated in the age group below 30 years.

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REFERENCES & BIBLIOGRAPHY

BOOKS:

1. Ahuja. Ram. 1987. *Crime Against Women*. Jaipur. India: Rawat Publications
2. Bhushan. P.S (1997). *Crime, Criminology and Society*. New Delhi, Manish Publication
3. Bratingham. R. and Bratingham. P. L. (1982), 'Environmental Criminology' pp 147-165, Prospects Heights. IL: Waveland Press
4. Bursik. R. J. and Gramsik. H. 1993. *Neighbourhood and Crime*. Lexigton: lexigton books.
5. Cahill Meagan Elizabeth,(2005), 'Geographies of Urban Crime: An Intra-urban Study of Crime in Nashville, TN; Portland, OR; and Tucson, AZ' page(50-100)
6. Cavan. R. S. and Jordan. T. C. (1968), 'Delinquency and Crime: Cross Cultural Perspectives'. Philadelphia, Lippincott
7. Clinard. M. B. and Abott. D. J. (1973), 'Crime in Developing Countries'. New York: Wiley
8. Davidson. R.N. (1989), 'Micro Environment of Violence'. Pp 59-85, J.E. David and T.H. David (ed.)-*The Geography of Crime*, London, Routledge publications
9. Gupta dipankar (2000), *Mistaken Modernity: India between World*, pub. Harper Collins publisher India
10. Hallenback (1951), '*American Urban Communities*', New York: Harper & Brothers Publishers, 1951
11. Herbert T. David (1989), 'Crime and Place: an introduction' in *The geography of crime*, 1989, pp. 1-15
12. Krishna. A. (2000). 'Creating and Harnessing Social Capital' pp 71-93 in Dasgupta P. and Serageldin (eds.), *Economic Progress and the Idea of Social Capital: A Multifaceted Perspective*, World Bank Publications, Washington D.C.

13. Kumar, Amit (2006), *criminal behaviour among elite urban youth*- unpublished Dissertation submitted to The centre for the study of social systems, SSS, JNU PP 86-92
14. Mc Clintock. F. H. (1963), 'Crime and Violence'. London: MacMillan
15. Moynihan. P. Deniel, 'causes of violent crime' in *Violent Crime, Homicide, Assault, Rape, Robbery* publisher-George Braziller, New York, pp. 47-59
16. Mukhopadhyay. Doyel (1999), 'Geography of Urban Against Women: Comparative Study of Calcutta and Toronto' Unpublished Thesis Submitted to CPOD School of Internatioal Studies, Jawaharlal Nehru University, New Delhi
17. Nandini. (2006), *Social Space and Crime in Delhi*. Unpublished Dissertation submitted to Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi
18. Paul Tappan, *Crime, Justice and Correction* (New York: McGraw Hill, 1960), p. 10.
19. Schwendinger. J.R. and Schwendinger. H. (1983), *Rape and Inequality*, Beverly Hills Sage Publications
20. Sharma. O.C. (1994), *Crime Against Women*, New Delhi, Ashish Publication House
21. Shaw. C. R. and McKay. H. D. (1969), 'Juvenile Delinquency and Urban Areas'. Chicago University Press.
22. Shelley. I. Louise (1980), *Crime and modernization*, Southern Illinois University Press pp 5-11
23. Siegel, L. J. (2001). *Criminology: Theories, Patterns, and Typologies* (7th ed.). Belmont, CA: Wardsworth.
24. Sinha. S.(2000), ' Crime and Violence in India' pp 243-261 in Noble, Thakur, Mukherji and Costa (eds), *Geography and Planning Research Themes for the New Millennium* pp 243-261 New Delhi. Vikas Publications.
25. Smith. D. M. (1977), 'Human Geography: A Welfare Approach'. London: Arnold
26. Thouless Robert. H. (1960), 'General and Social Psychology', London: London University Press Ltd. 1960
27. Williams III, F. P., & McShane, M. D. (1999). *Criminological Theory* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

28. Wolfgang E. Marvin and Franco Ferracuti, *Subculture of violence: towards an integrated conceptualization*. Pp.95-269
29. Wolfgang, Marvin E. (1972). 'The Metropolitan Engima' Harvard Univ. Press, 1972

Articles and Journals:

1. Allison John P. (1972), 'Economic Factors And The Rate Of Crime' *Land Economics*, Vol. 48, No. 2 (May, 1972), pp. 193-196
2. Anderson. K. L. (1997), 'Gender, Status and Domestic Violence: An Integration of Feminist and Family Violence Approaches'. *Journal of Marriage and the Family* 59: 55-669.
3. Arthur, J.A. (1991) 'Socio-economic predictors of crime in rural Georgia'. *Criminal*
4. Athens Lonnie (1998), 'Dominance. Ghettos And Violent Crime, *The Sociological Quarterly*, vol.39, no. 4(autumn, 1998), pp. 673-691
5. Becker, G.S., (1968) 'Crime and Punishment: An Economic Approach', *Journal of Political Economy*, 76 (2): 169-217.
6. Becker, G.S., (1993) 'Nobel Lecture: The Economic Way at Looking at Behavior'. *Journal of Political Economy*, 101(3): 385-409.
7. Bennet, R.R. (1991) 'Development and crime: A cross-national, time-series analysis of competing models'. *The Sociological Quarterly*, 32(3): 343-363.
1. Bianchi Milo, Buonanno Paolo and Pinotti Paolo (2008), 'Do Immigrants Cause Crime?' Paris School of Economics Working Paper No. 2008-05 pp 1-32
8. Black Donald J. (1970), 'Production of Crime Rates' *American Sociological Review*, Vol. 35, No. 4 (Aug., 1970), pp. 733-748 Published by: American Sociological Association
9. Blau Judith R and Blau Peter M (1982), 'The Cost of Inequality: Metropolitan Structure and Violent Crime', *American Sociological Review*, Vol. 47, No. 1 (Feb., 1982), pp. 114-129 Published by: American Sociological Association

10. Boudon, R. (2003) 'Beyond rational choice theory' *Annual Review of Sociology*, 29. Retrieved April 19, 2007, from PsycINFO database.
11. Bowling. B. (1993), 'Racial Harassment and the Process of Victimization'. *British Journal of Criminology* 33: 231-250
2. Braithwaite, J. and Braithwaite V. (1980), 'The effect of income inequality and social
12. Brier, S.S. and Fienberg S.E. (1980) 'Recent Econometric Modelling of Crime and Punishment: Support for the Deterrence Hypothesis?' *Evaluation Review*, 4(2): 147-191.
13. Bursik. R. J. (1988), 'Social Disorganization and Theories of Crime and Delinquency'. *Criminology* 26: 519-551
14. Chakraborty. N. K. (2004), '*Restorative Justice and Role of Judiciary*', Paper presented in 1st International and 5th biennial Conference 18-20 Nov. 2004 Tirunelveli
15. Chakravorty Sanjoy (1995), 'Identifying Crime Clusters: The Spatial Principles'
16. Chenais. J.C. 1981. as cited in Dreze and Khera (2000), 'crime gender and society in India: : Insights from Homicide Data' *Population and Development Review*, Vol. 26, No. 2 (Jun., 2000), pp. 335-352
17. Chiricos Theodore G. (1987), 'Rates of Crime and Unemployment: An Analysis of Aggregate Research Evidence' *Social Problems*, Vol. 34, No. 2 (Apr., 1987), pp. 187-212
18. Chowdhry Prem (1997), 'Enforcing Cultural Codes: Gender and Violence in Northern India' *Economic and Political Weekly*, Vol. 32, No. 19 (May 10-16, 1997), pp. 1019-1028
19. Clark. R.V. (1980), 'Situational Crime Prevention: Theory and Practice', *British Journal of Criminology* 20: 136-147
20. Cohen. Joseph. (1941), 'The Geography of Crime' *Annals of the American Academy of Political and Social Sciences*, 217 (September, 1941): 29-37
21. Daniel Lederman, Loayza, Norman and Menendez Maria (2002), 'Violent Crime: Does Social Capital Matter?' *Economic Development and Cultural Change*, Vol. 50, No. 3 (Apr., 2002), pp. 509-539

22. Darrell J. Steffensmeier, Emilie Andersen Allan, Miles D. Harer, Cathy Streifel (1989) 'Age and the Distribution of Crime' *The American Journal of Sociology*, Vol. 94, No. 4 (Jan., 1989), pp. 803-831
23. David F. Greenberg (1985), 'Age, Crime, and Social Explanation', *The American Journal of Sociology*, Vol. 91, No. 1 (Jul., 1985), pp. 1-21 Published by: The University of Chicago Press
24. David P. Farrington (1986), 'Age and Crime' *Crime and Justice, Vol. 7 (1986)*, pp. 189-250
Democracy on homicide.' *British Journal of Criminology*, 21: 421-438.
25. Drew Humphries and Don Wallace (1980), 'Capitalist Accumulation and Urban Crime, 1950-1971' *Social Problems*, Vol. 28, No. 2 (Dec., 1980), pp. 179-193
26. Dutt, Ashok K.; Noble A.G and Singh Sitaram (1979). 'Is There a North-Central Subculture of Violence in India' *The National Geographical Journal of India* 25(1979)
27. Dutta Mousumi and Husain Zakir (2009), 'Determinants of crime rates: Crime Deterrence and Growth in post-liberalized India', MPRA Paper No. 14478 posted 05. April 2009
Economic Perspectives, 10(1): 43-67.
28. Ehrlich, I., (1996) 'Crime, Punishment, and the Market for Offenses'. *Journal of*
29. Fajnzylber Pablo, Lederman Denial and Loayza Norman (2001), 'Inequality and Violent Crime' *The Journal Of Law And Economics*, August 2001, pp 1-38
30. Fajnzylber, P., Lederman, D. and N. Loayza (2002) 'What Causes Violent Crime?' *European Economic Review*, 46 (2): 1323-1357.
31. Farral. G. (1995), 'Like Candy: Why does Repeat Victimization occur?' *The British Journal of Criminology* 39: 253-268
32. Fleisher, B., (1966) 'The Effects of Income on Delinquency', *American Economic Review*, 56 (1/2), pp. 118-137
33. Freeman, R.B., (1991) 'Crime and the Employment of Disadvantaged Youths'. NBER Working Paper no. 3875.
34. Grasmick. H.G. and Kobayashi. E. (2002), 'Workplace Deviance in Japan: Applying an Extended Model of Deterrence,' *Deviant Behaviour*. 23(1): 21-43

35. Greene, M. B. (1993) 'Chronic exposure to violence and poverty: Interventions that work for youth'. *Crime & Delinquency*, 39(1). Retrieved April 20, 2007, from Sage Criminology database.
36. Gregg Barak(2001), ' Crime And Crime Control In An Age Of Globalization: A Theoretical Dissection' *Critical Criminology* 10: 57–72, 2001
37. Grogger, J., (1995) 'The Effect of Arrest on the Employment and Earnings of Young Men'. *Quarterly Journal of Economics*, 110(1): 51-72.
38. Hartgen. C.A. (1983), 'Delinquency, Development and Social Integration in India'. *Social Problems*. 29(5): 464-473
39. Hsieh, C.C. and Pugh M.D (1993) 'Poverty, Income Inequality and Violent Crime: A Meta-analysis of Recent Aggregate Studies.' *Criminal Justice Review*, 18(2): 182-202
40. [http://en.wikipedia.org/wiki/National_Capital_Region_\(India\)](http://en.wikipedia.org/wiki/National_Capital_Region_(India))
41. Hugues Lagrange (2003), 'Crime and Socio-Economic Context' *Revue française de sociologie*, Vol. 44, Supplement: An Annual English Selection (2003), pp. 29-48
42. Hugues Lagrange (2003), 'Crime and Socio-Economic Context' *Revue française de sociologie*, Vol. 44, Supplement: An Annual English Selection (2003), pp. 29-48
43. *International Encyclopedia of the Social Science*, Vol. 3&4, (New York: The Mac Millan Company and The Free Press, 1972), p. 476.
44. Jean Dreze and Reetika Khera (2000), 'Crime, Gender, and Society in India: Insights from Homicide Data' *Population and Development Review*, Vol. 26, No. 2 (Jun., 2000), pp. 335-352
45. Jeffrey Fagan and Richard B. Freeman (1999), 'Crime and Work' *Crime and Justice*, Vol. 25 (1999), pp. 225-290
46. Jeffrey Fagan and Richard B. Freeman (1999), 'Crime and Work' *Crime and Justice*, Vol. 25 (1999), pp. 225-290 Published by: The University of Chicago Press
47. Jerry H. Ratcliffe (2005), 'Detecting Spatial Movement of Intra-Region Crime Patterns over Time' *Journal of Quantitative Criminology*, Vol. 21, No. 1, March 2005
48. John R. Hipp, Daniel J. Bauer, Curran Patrick J., Kenneth A. Bollen (2004), 'Crimes of Opportunity or Crimes of Emotion? Testing Two Explanations of Seasonal Change

- in Crime', *Social Forces*, Vol. 82, No. 4 (Jun., 2004), pp. 1333-1372 Published by: University of North Carolina Press)
- Justice Review*, 16: 29-41.
49. K. Balagopal (2001), 'A Tough Law for Other People's Crime', *Economic and Political Weekly*, Vol. 36, No. 16 (Apr. 21-27, 2001), pp. 1285-1289
50. Kelkar Govind (1985), 'Women and Structural Violence in India', *Women's Studies Quarterly*, Vol. 13, No. 3/4, Teaching about Women and Violence (Fall - Winter, 1985), pp. 16-18 Published by: The Feminist Press at the City University of New York
51. Koenig. M.A. (2006), 'Individual and Contextual Determinants of Domestic Violence in India'. *American Journal of Public Health*. 96(1): 132-168
52. Kosambi Meera (1993), 'violence against women: reports from India and Korea', *Social and Human Sciences In Asia and the Pacific RUSHSAP Series of Monographs and Occasional Papers* pp. 1-100)
53. Krohn. M. D. (1969), 'Inequality, Unemployment and Crime: A Cross National Analysis' *The Sociological Quarterly* 17(3): 303-313
54. Lawrence M. Friedman (1991), 'Crimes of Mobility' *Stanford Law Review*, Vol. 43, No. 3 (Feb., 1991), pp. 637-658
55. Lochner, L. and E. Moretti (2001) 'The effect of education on crime: evidence from prison inmates, arrests, and self-reports', NBER Working Paper no. 8605.
56. Mangoli R.N. ,Ganapati M. Tarase, 2009, 'Crime Against Women in India: A Statistical Review', *International Journal of Criminology and Sociological Theory*, Vol. 2, No. 2, December 2009, 292-302
57. Marilyn A. Brown (1982), 'Modelling the Spatial Distribution of Suburban Crime' *Economic Geography*, Vol. 58, No. 3 (Jul., 1982), pp. 247-261
58. Marvin D. Krohn (1976), 'Inequality, Unemployment and Crime: A Cross-National Analysis', *The Sociological Quarterly*, Vol. 17, No. 3 (Summer, 1976), pp. 303-313 Published by: Blackwell Publishing on behalf of the Midwest Sociological Society
59. McGahey Recharad M.(1986), 'Economic conditions, Neighborhood Organization and Urban Crime" *Crime And Justice*, Vol. 8, Communities and Crime(1986), pp. 231-270

60. *Measuring Violence Against Women: Statistical Trends 2006*, Statistics Canada – Catalogue no. 85-570 pp. 1-97)
61. Messner, S.F. (1983) 'Regional differences in the economic correlates of the urban homicide rate: Some evidence on the importance of cultural context.' *Criminology*, 21: 477-488.
62. Michael Tonry (1997), 'Ethnicity, Crime, and Immigration: Comparative and Cross - National Perspectives *Crime and Justice*, Vol. 21, (1997), pp. 1-29 Published by: The University of Chicago Press *Middle States Geographers*, 1995, 28:53-58
63. Mukherjee Chandan, Rustagi Preet, Krishnaji N. (2001), 'Crimes against Women in India: Analysis of Official Statistics', *Economic and Political Weekly*, Vol. 36, No. 43 (Oct. 27 - Nov. 2, 2001), pp. 4070-4080
64. Murray A.T. McGuffog I. Western J.S. and Patric Mullins (2001), 'Exploratory Spatial Data Analysis Techniques for Examining Urban Crime' *British Journal of Criminology* (2001) 41, 309-329
65. Natrajan. M. (2002), 'Domestic Violence among the Immigrants from India: What we need to know and what we should do', *International Journal of Comparative and Applied Criminal Justice*. 26(2): 301-321
66. Neumayer Eric (2003), 'Good Policy Can Lower Violent Crime: Evidence from a Cross-National Panel of Homicide Rates, 1980-97' *Journal of Peace Research*, Vol. 40, No. 6 (Nov., 2003), pp. 619-640
67. Neumayer Eric (2005), 'Inequality and Violent Crime: Evidence from Data on Robbery and Violent Theft' *Journal of Peace Research*, Vol. 42, No. 1 (Jan., 2005), pp. 101-112 Published by: Sage Publications, Ltd.
68. Neumayer, E. (2003) 'Good Policy Can Lower Violent Crime: Evidence from a cross-National Panel of Homicide Rates, 1980-97', *Journal of Peace Research*, 40(6): 619-640.
69. Oldenberg. P. 1992. 'Sex ratio, son preference and violence in India'. *Economic and Political Weekly*, Dec. 1992, 2657-2659
70. Patterson. E.B. (1991), 'Poverty, Income Inequality and Community Crime Rates', *Criminology* 29: 755-776

71. Pyle. G. F. (ed.) 1974, 'The Spatial Dynamics of Crime' University of Chicago, Geography Research Paper 159
72. Quetelet. A.J. (1842) A Treatise on Man. Gainesville. Scholars Facsimiles and Reprints 1969
73. Rajalakshmi. T.K. (2002), 'Crime Capital: New Delhi', *Frontline*
74. Sahu. S. (2003), 'Rape in India: Some Issues and Observations'. *Mainstream*, December 13 pp 26-29
75. Sarah L. Boggs (1965), 'Urban Crime Patterns' *American Sociological Review*, Vol. 30, No. 6 (Dec., 1965), pp. 899-908
76. Saravanan Sheela, 2000, 'Violence Against Women in India: A Literature Review', *Institute of Social Studies Trust (ISST) March 2000 pp 1-83*
77. Sen. Amartya (1985). *Social Exclusion*
78. Simpson. M. E.(1985), 'Violent Crime, Income Inequality and Regional Culture: Another Look', *Sociological Focus* 18: 199-208
79. Sivamurthy. A. (1982), 'The Spatio-Temporal Variation in the Incidences of Theft in Madras City,' *Indian Journal of Criminology* 10 (1982): 108-116
80. Smith, D. A., & Jarjoura, G. R. (1988). 'Social structure and criminal victimization' *Journal of Research in Crime and Delinquency*, 25(1). Retrieved April 20, 2007, from Sage Criminology database.
81. Smith. S.J (1984), 'Crime and Structure of Social Relations', *Transactions of the Institute of British Geographers* 9(4): 427-442
82. Stefan Dietrich Josten (2003), 'Inequality, Crime and Growth: A Classical Argument for Distributional Equality' *International Tax and Public Finance*, 10, 435-452, 2003
83. Steven F. Messner and Judith R. Blau (1987), 'Routine Leisure Activities and Rates of Crime: A Macro-Level Analysis' *Social Forces*, Vol. 65, No. 4 (Jun., 1987), pp. 1035-1052
84. Susan J. Smith (1984), 'Crime and the Structure of Social Relations', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 4 (1984), pp. 427-442
85. Tonry Michael (1997), 'Ethnicity, Crime, and Immigration' *Crime and Justice*, Vol. 21, Ethnicity, Crime and Immigration: Comparative and Cross -National Perspectives (1997), pp. 1-29

86. United Nations (2005) *Crime and Development in Africa*. Mimeo. United Nations, New York.
87. Uppal Gopal S.(1978), 'Ecological Analysis Of Urban Crime: A Methodological Refinement In The Use Of Crime Data' *State & Local Government Review*, Vol. 10, No.2 (May 1978), pp. 62-65
88. Usher, D., (1997) 'Education as Deterrent to Crime'. *Canadian Journal of Economics*, 30(2): 367-84.
89. Usman Ahmad Karofi and Jason Mwanza (2006), 'Globalisation and Crime' *Bangladesh e-Journal of Sociology*. Volume 3, Number 1, January 2006.
90. Vincent F. Sacco (1995), 'Media Constructions of Crime', *Annals of the American Academy of Political and Social Science*, Vol. 539, Reactions to Crime and Violence (May, 1995), pp. 141-154 Published by: Sage Publications,
91. Wesley G. Skogan (1977), 'The Changing Distribution of Big-City Crime: A Multi-City Time-Series Analysis', *Urban Affairs Review* 1977 pp 1-17
92. Wilcox, P., Land, K. C., and Hunt, S. A. (2003). *Criminal Circumstance: A Dynamic Multicontextual Criminal Opportunity Theory*. Aldine de Gruyter, New York.

Internet Links

93. http://en.wikipedia.org/wiki/Noida_double_murder_case 19 July, 2011
94. <http://indiatoday.intoday.in/site/story/delhi-rape-case-trail-leads-nowhere/1/121631.html>, Mail Today Bureau | New Delhi, November 30, 2010
95. http://articles.timesofindia.indiatimes.com/2011-04-08/delhi/29396040_1_crime-graph-gang-south-delhi, Friday, 8th April 2011 07:22:29 pm
96. <http://en.wikipedia.org/wiki/Multicollinearity>

Table A.1

TOTAL COGNIZABLE IPC CRIME INCIDENCES IN INDIA				
STATES	2001 INCIDENCES	2005 INCIDENCES	2009 INCIDENCES	% GROWTH
LAKSHADWEEP	36	42	134	73.1
TRIPURA	2801	3356	5486	48.9
WEST BENGAL	61563	66406	113036	45.5
SIKKIM	444	552	669	33.6
ASSAM	36877	42006	55313	33.3
JHARKHAND	25447	35175	37436	32.0
MEGHALAYA	1687	1880	2448	31.1
HARYANA	38759	42664	56229	31.1
A & N ISLANDS	658	682	941	30.1
BIHAR	88432	97850	122931	28.1
ANDHRA PRADESH	130089	157123	180441	27.9
CHHATTISGARH	38460	43633	51370	25.1
GOA	2341	2119	3005	22.1
PUNJAB	27774	27136	35545	21.9
D & N HAVELI	350	434	442	20.8
KARNATAKA	109098	117580	134042	18.6
ORISSA	46661	51685	55740	16.3
MAHARASTRA	171233	187027	199598	14.2
HIMACHAL PRADESH	11499	12345	13315	13.6
DAMAN & DIU	239	243	276	13.4
MANIPUR	2489	2913	2852	12.7
MADHYA PRADESH	181741	189172	207762	12.5
KERALA	103847	104350	118369	12.3
PONDICHERRY	4068	4575	4591	11.4
TAMIL NADU	154801	162360	174691	11.4
JAMMU & KASHMIR	19505	20115	21975	11.2
GUJRAT	103419	113414	115183	10.2
UTTARANCHAL	8073	8033	8802	8.3
RAJASTHAN	155185	140917	166565	6.8
CHANDIGARH	3397	3133	3555	4.4
ARUNACHAL PRADESH	2342	2304	2362	0.8
UTTAR PRADESH	178129	122108	172884	-3.0
DELHI	54384	56065	50251	-8.2
MIZORAM	2246	2156	2047	-9.7
NAGALAND	1234	1049	1059	-16.5
ALL INDIA	1769308	1822602	2121345	16.600

Table A.2

AVERAGE CRIME RATE(2001-2005-2009)					
STATES	CAB	STATES	CAP	STATES	CAW
PONDICHERRY	103.3	CHANDIGARH	185.8	TRIPURA	27.0
ANDHRA PRADESH	71.2	DELHI	144.8	ANDHRA PRADESH	26.2
MADHYA PRADESH	68.1	MIZORAM	131.1	ASSAM	22.9
TAMIL NADU	64.0	ARUNACHAL PRADESH	68.1	MADHYA PRADESH	22.8
ARUNACHAL PRADESH	60.9	GOA	64.8	DELHI	22.7
KERALA	60.2	PONDICHERRY	63.8	RAJASTHAN	22.2
RAJASTHAN	58.4	MAHARASTRA	63.1	KERALA	20.2
KARNATAKA	46.2	HARYANA	59.1	HARYANA	18.8
MAHARASTRA	44.3	MADHYA PRADESH	54.0	JAMMU & KASHMIR	18.5
CHHATTISGARH	43.8	DAMAN & DIU	48.2	CHHATTISGARH	17.2
ASSAM	43.2	A & N ISLANDS	44.8	ORISSA	16.9
PUNJAB	36.7	GUJRAT	44.8	CHANDIGARH	16.9
DELHI	35.1	KARNATAKA	44.5	WEST BENGAL	16.1
HIMACHAL PRADESH	34.6	CHHATTISGARH	44.0	ARUNACHAL PRADESH	14.3
MANIPUR	34.0	RAJASTHAN	42.1	HIMACHAL PRADESH	13.8
HARYANA	33.8	D & N HAVELI	40.7	MAHARASTRA	13.2
GUJRAT	33.7	ANDHRA PRADESH	37.9	MIZORAM	13.1
TRIPURA	31.8	ASSAM	35.1	TAMIL NADU	12.9
A & N ISLANDS	31.6	TAMIL NADU	33.5	GUJRAT	12.4
GOA	31.4	JAMMU & KASHMIR	32.5	A & N ISLANDS	12.3
ORISSA	29.1	KERALA	31.5	KARNATAKA	11.9
DAMAN & DIU	28.7	MEGHALAYA	31.2	PONDICHERRY	11.4
JAMMU & KASHMIR	28.6	JHARKHAND	29.9	UTTAR PRADESH	10.8
BIHAR	26.9	ORISSA	28.4	UTTARANCHAL	9.9
JHARKHAND	26.6	SIKKIM	28.2	PUNJAB	9.0
SIKKIM	25.9	NAGALAND	24.9	JHARKHAND	9.0
D & N HAVELI	24.3	UTTARANCHAL	24.7	D & N HAVELI	8.6
UTTARANCHAL	24.1	PUNJAB	24.1	GOA	8.0
UTTAR PRADESH	22.1	HIMACHAL PRADESH	23.7	BIHAR	7.5
MIZORAM	18.8	BIHAR	20.6	SIKKIM	7.3
MEGHALAYA	17.6	WEST BENGAL	19.6	DAMAN & DIU	6.2
CHANDIGARH	17.0	UTTAR PRADESH	19.5	MANIPUR	5.8
WEST BENGAL	16.5	TRIPURA	18.2	MEGHALAYA	5.8
LAKSHADWEEP	11.8	MANIPUR	17.2	NAGALAND	1.8
NAGALAND	10.4	LAKSHADWEEP	17.2	LAKSHADWEEP	0.5

Table A.3

CHANGE IN CRIME CONCENTRATION OVER THE PERIOD 2001, 2005 and 2009									
	CAB	CAB	CAB	CAP	CAP	CAP	CAW	CAW	CAW
STATES	CC	CC	CC	CC	CC	CC	CC	CC	CC
A & N ISLANDS	0.8	0.6	0.6	0.9	1.1	1.2	0.7	0.4	1.0
ANDHRA PRADESH	1.5	1.6	1.6	0.9	1.0	0.9	1.5	1.5	1.5
ARUNACHAL PRADESH	1.2	1.2	1.5	1.6	1.8	1.3	0.8	0.7	0.7
ASSAM	1.3	1.2	1.1	1.1	1.1	1.0	1.2	1.5	1.7
BIHAR	0.9	1.1	1.0	0.9	0.8	0.8	0.7	0.6	0.6
CHANDIGARH	0.2	0.2	0.2	2.6	2.4	2.7	0.4	0.7	0.4
CHHATTISGARH	0.9	0.7	1.2	1.1	1.1	1.0	1.5	1.1	0.9
D & N HAVELI	0.5	0.7	0.7	1.1	1.1	1.3	0.7	0.5	0.3
DAMAN & DIU	0.7	0.9	1.0	1.6	1.8	1.3	0.3	0.4	0.4
DELHI	0.4	0.4	0.6	2.0	1.7	2.3	0.3	0.8	0.6
GOA	0.8	0.9	0.8	1.9	1.7	1.9	0.3	0.5	0.5
GUJRAT	0.8	0.6	0.7	1.0	1.0	1.1	0.7	0.7	0.7
HARYANA	0.8	0.7	0.6	1.2	1.4	1.5	1.2	1.2	1.0
HIMACHAL PRADESH	0.8	0.7	0.7	0.6	0.5	0.6	1.0	0.8	0.8
JAMMU & KASHMIR	0.8	0.7	0.5	0.8	0.8	0.9	0.9	1.1	1.0
JHARKHAND	0.9	1.0	1.1	1.2	1.2	1.3	0.9	0.8	0.7
KARNATAKA	1.0	0.9	0.8	0.9	1.0	1.1	0.6	0.5	0.6
KERALA	0.9	0.8	0.7	0.5	0.5	0.4	0.8	0.9	0.8
LAKSHADWEEP	0.5	0.5	0.5	1.4	1.0	0.5	0.0	0.0	0.1
MADHYA PRADESH	0.9	1.0	1.1	0.9	0.8	0.8	1.2	1.0	0.9
MAHARASTRA	1.1	1.0	1.0	1.6	1.6	1.7	1.0	0.9	0.9
MANIPUR	1.1	1.3	1.6	0.6	0.5	1.1	0.3	0.3	0.4
MEGHALAYA	0.9	0.9	0.9	1.8	2.0	1.6	0.5	0.8	1.1
MIZORAM	0.3	0.3	0.5	2.7	2.7	2.7	0.8	0.6	0.9
NAGALAND	0.8	0.9	0.9	2.1	2.1	2.4	0.3	0.3	0.4
ORISSA	0.8	1.0	1.1	1.0	1.0	1.0	1.5	1.4	1.4
PONDICHERRY	0.9	1.1	1.2	0.7	0.6	0.8	0.3	0.3	0.2
PUNJAB	1.2	1.4	1.4	0.9	0.9	1.1	1.1	0.8	0.7
RAJASTHAN	1.0	1.0	0.9	0.8	0.8	0.8	1.0	1.0	1.1
SIKKIM	0.8	1.4	1.2	1.6	1.5	1.1	0.8	1.6	0.6
TAMIL NADU	1.2	1.2	0.9	0.7	0.6	0.6	0.4	0.4	0.3
TRIPURA	1.2	1.1	1.3	0.9	0.8	0.6	2.2	3.4	3.3
UTTAR PRADESH	1.1	1.2	1.0	1.0	1.1	1.0	1.5	1.4	1.3
UTTARANCHAL	1.1	1.0	1.3	1.3	1.4	1.2	1.2	1.2	1.3
WEST BENGAL	0.6	0.7	0.9	1.2	1.0	0.8	1.4	2.3	2.3

Table A.4

NCR DISTRICTS	CAB	CAB	CAB	% GROWTH
CENTRAL	334	297	269	19
EAST	835	538	570	32
NEW DELHI	155	174	201	-30
NORTH	352	248	330	6
NORTH EAST	966	768	591	39
NORTH WEST	497	1193	1223	-146
SOUTH	1250	615	843	33
SOUTH WEST	487	527	629	-29
WEST	676	612	540	20
TOTAL	6325	5024	5190	18
FARIDABAD	933	587	513	45
GURGAON	537	530	403	25
JHAJJAR	446	352	408	9
PANIPAT	589	449	426	28
REWARI	266	228	180	32
ROHTAK	535	449	431	19
SONIPAT	738	652	630	15
BAGPAT	338	411	310	8
BULANDSHAHER	671	954	827	-23
G.B. NAGAR	541	464	488	10
GAZIABAD	1562	912	1013	35
MEERUT	963	832	998	-4
ALWAR	3467	2571	2527	27
TOTAL	11586	9391	9154	21

Table A.5

INCIDENCES	2009	2005	2001	
NCR DISTRICTS	TOTAL IPC	TOTAL IPC	TOTAL IPC	% GROWTH
CENTRAL	2833	3529	3750	-32
EAST	6379	5453	4447	30
NEW DELHI	1492	2295	2660	-78
NORTH	2908	3306	3998	-37
NORTH EAST	4720	4849	3449	27
NORTH WEST	4676	11019	10001	-114
SOUTH	11620	10529	10745	8
SOUTH WEST	3610	5762	6004	-66
WEST	5111	7217	7690	-50
TOTAL	50251	56065	54384	-8
FARIDABAD	6746	5051	5808	14
GURGAON	7944	5536	3502	56
JHAJJAR	1797	1343	1501	16
PANIPAT	2812	2138	1895	33
REWARI	2125	1753	1214	43
ROHTAK	2838	2003	1856	35
SONIPAT	3429	2413	1944	43
BAGPAT	1438	1002	1355	6
BULANDSHAHER	2595	2723	3972	-53
G.B. NAGAR	4707	2169	2443	48
GAZIABAD	11821	4256	5079	57
MEERUT	5375	4347	5377	0
ALWAR	10092	6921	7023	30
TOTAL	63719	41655	42969	33

Table A.6

GROWTH IN THE SHARE OF CAB, CAP & CAW TO TOTAL IPC CRIMES				
NCR DISTRICTS	CAB	CAB	CAB	% growth
CENTRAL	11.8	8.4	7.2	39.2
EAST	13.1	9.9	12.8	2.1
NEW DELHI	10.4	7.6	7.6	27.3
NORTH	12.1	7.5	8.3	31.8
NORTH EAST	20.5	15.8	17.1	16.3
NORTH WEST	10.6	10.8	12.2	-14.8
SOUTH	10.8	5.8	7.8	27.1
SOUTH WEST	13.5	9.1	10.5	22.3
WEST	13.2	8.5	7.0	46.9
TOTAL	12.6	9.0	9.5	24.2
FARIDABAD	13.8	11.6	8.8	36.1
GURGAON	6.8	9.6	11.5	-70.2
JHAJJAR	24.8	26.2	27.2	-9.5
PANIPAT	20.9	21.0	22.5	-7.3
REWARI	12.5	13.0	14.8	-18.4
ROHTAK	18.9	22.4	23.2	-23.2
SONIPAT	21.5	27.0	32.4	-50.6
BAGPAT	23.5	41.0	22.9	2.7
BULANDSHAHER	25.9	35.0	20.8	19.5
G.B. NAGAR	11.5	21.4	20.0	-73.8
GAZIABAD	13.2	21.4	19.9	-50.9
MEERUT	17.9	19.1	18.6	-3.6
ALWAR	34.4	37.1	36.0	-4.7
TOTAL	18.2	22.5	21.3	-17.2

Table A.7

TOTAL COGNIZABLE IPC CRIME RATES & GROWTH IN CRIME RATES				
STATES	2001 RATE	2005 RATE	2009 RATE	% GROWTH
LAKSHADWEEP	59	64.6	188.7	68.7
TRIPURA	88	99	153.8	42.8
WEST BENGAL	77	78.1	126.7	39.2
SIKKIM	82	96	110.8	26.0
ASSAM	138	146.4	181.2	23.8
MEGHALAYA	73	76.7	95	23.2
JHARKHAND	95	121.8	122.6	22.5
HARYANA	184	187.2	231.9	20.7
ANDHRA PRADESH	172	196.9	216.6	20.6
A & N ISLANDS	185	175.8	222.5	16.9
BIHAR	107	108.9	128.4	16.7
PUNJAB	114	105.3	131.7	13.4
CHHATTISGARH	185	193.2	212.6	13.0
KARNATAKA	207	211.1	230.3	10.1
ORISSA	127	133.4	137.9	7.9
HIMACHAL PRADESH	189	193.5	200.9	5.9
KERALA	326	313	341.5	4.5
TAMIL NADU	249	250.3	260.3	4.3
MAHARASTRA	177	181.3	183.6	3.6
MANIPUR	104	114.7	106.8	2.6
GOA	174	140.6	177.7	2.1
D & N HAVELI	159	177.9	160.7	1.1
PONDICHERRY	418	443.3	418.5	0.1
GUJRAT	204	209	200.5	-1.7
MADHYA PRADESH	301	286.8	293	-2.7
DAMAN & DIU	151	138.9	142.3	-6.1
UTTAR PRADESH	95	67.3	88.4	-7.5
RAJASTHAN	275	228.5	252.2	-9.0
ARUNACHAL PRADESH	215	198.8	193.6	-11.1
JAMMU & KASHMIR	194	176.9	170.2	-14.0
CHANDIGARH	377	313.9	324.1	-16.3
UTTARANCHAL	107	88.1	90.9	-17.7
MIZORAM	252	227.7	205.5	-22.6
NAGALAND	62	49.6	47.6	-30.3
DELHI	395	356.1	282.6	-39.8

Table A.8 Rate of Different crime categories 2009

NCR DISTRICTS	RATE_CAB	NCR DISTRICTS	RATE_CAP	NCR DISTRICTS	RATE_CAW	NCR DISTRICTS	RATE_IPC
NEW DELHI	112.2	NEW DELHI	746.5	JHAJJAR	23.52	NEW DELHI	1485
ALWAR	84.4	CENTRAL	277.5	NEW DELHI	20.66	CENTRAL	580
SONIPAT	49.3	SOUTH	227.8	FARIDABAD	20.65	NORTH	512
JHAJJAR	46.4	NORTH	204.7	BULANDSHAHER	20.36	SOUTH	474
ROHTAK	45.9	EAST	135.9	PANIPAT	17.37	WEST	361
PANIPAT	44.1	SOUTH WEST	132.1	MEERUT	16.01	NORTH WEST	350
NORTH WEST	42.7	NORTH WEST	126.3	ALWAR	14.57	SOUTH WEST	342
NORTH	42.2	WEST	122.2	ROHTAK	14.04	EAST	304
CENTRAL	41.6	TOTAL NCR	87.9	G.B. NAGAR	13.81	FARIDABAD	265
G.B. NAGAR	40.6	G.B. NAGAR	70.2	GURGAON	13.67	TOTAL NCR	258
EAST	38.9	GURGAON	69.8	TOTAL NCR	12.90	ALWAR	235
TOTAL NCR	38.7	PANIPAT	69.5	GAZIABAD	12.03	GURGAON	211
SOUTH	37.2	NORTH EAST	68.0	BAGPAT	11.08	G.B. NAGAR	203
SOUTH WEST	35.8	ROHTAK	67.2	CENTRAL	10.98	ROHTAK	197
NORTH EAST	33.4	MEERUT	57.2	SOUTH	9.79	PANIPAT	196
MEERUT	33.3	GAZIABAD	52.1	SOUTH WEST	9.46	NORTH EAST	195
GAZIABAD	30.8	FARIDABAD	44.7	NORTH WEST	9.44	MEERUT	179
BULANDSHAHER	28.4	ALWAR	43.6	SONIPAT	9.38	JHAJJAR	171
BAGPAT	26.6	SONIPAT	40.4	NORTH	9.34	REWARI	159
WEST	25.4	JHAJJAR	35.0	EAST	8.88	GAZIABAD	154
GURGAON	24.3	REWARI	32.7	WEST	7.14	SONIPAT	152
REWARI	23.5	BAGPAT	28.7	REWARI	7.06	BULANDSHAHER	136
FARIDABAD	23.4	BULANDSHAHER	19.2	NORTH EAST	5.60	BAGPAT	116

Figure A.1 share of crime types to total IPC crimes in NCT

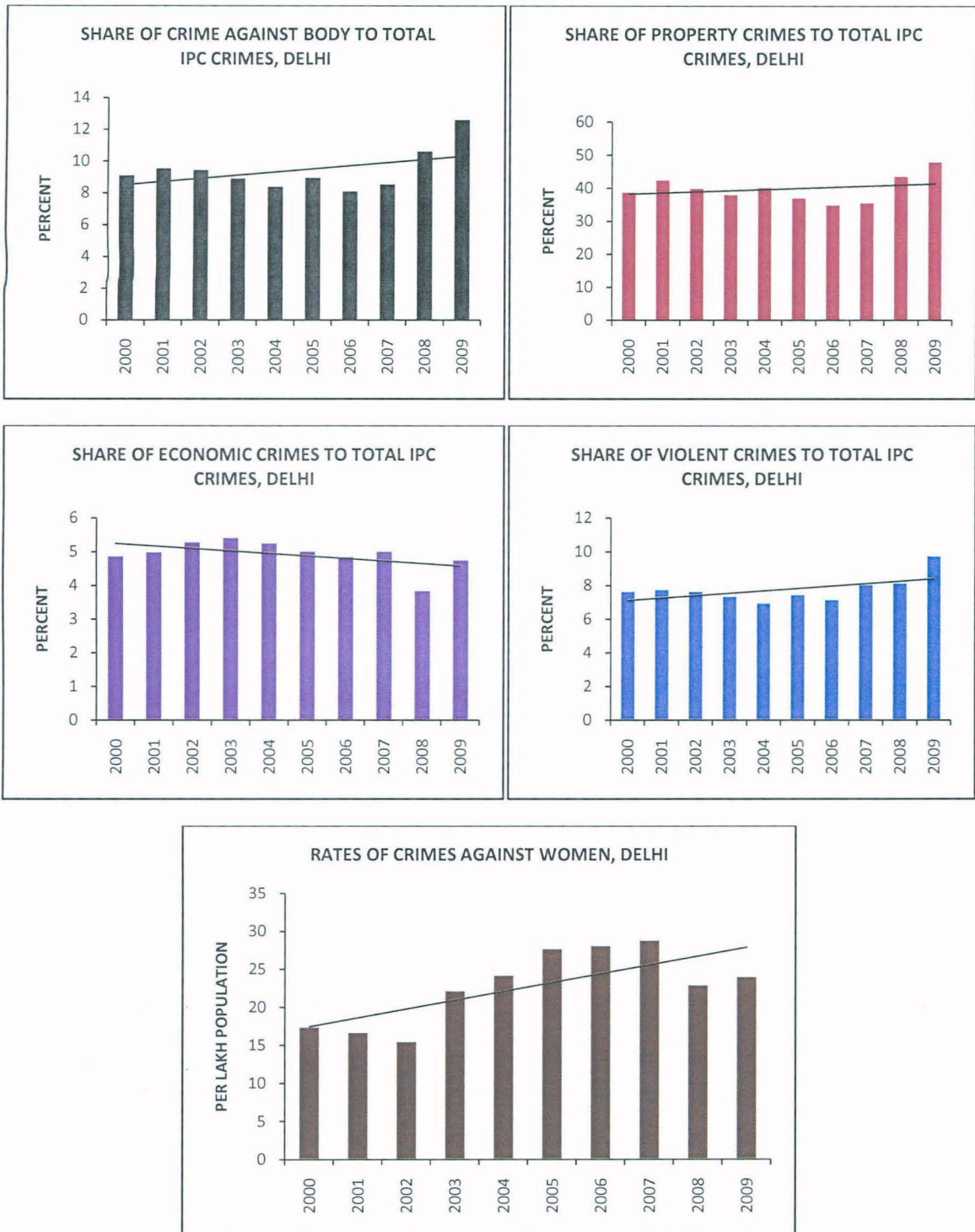


Table A .9 Correlation between IPC Crime Rates and Socio-Economic Variables

CORRELATIONS													
	RATE_IPC	Density	SR	UP	SC	Literacy	HLP	WPR	MIG	UNEMPL	NONWRK	DEPEND	YOUNGP
RATE_IPC	1												
Density	0.102	1											
SR	-0.346	-0.131	1										
UP	0.371	.731**	-.613**	1									
SC	-0.29	0.096	-0.132	0.248	1								
Literacy	0.366	.594**	-.570**	.802**	0.386	1							
HLP	.484*	-0.137	0.137	-0.122	-0.012	0.178	1						
WPR	0.043	-.474*	0.281	-.577**	-0.03	-0.155	0.405	1					
MIG	0.347	0.139	-.723**	.508*	0.29	.629**	0.065	-0.153	1				
UNEMPL	.607**	0.319	-.607**	.744**	0.095	.590**	0.174	-.518*	.468*	1			
NONWRK	-0.045	.474*	-0.28	.575**	0.029	0.153	-0.406	-1.000**	0.152	.516*	1		
DEPEND	-.512*	-.564**	.714**	-.913**	-0.265	-.911**	-0.126	0.285	-.651**	-.753**	-0.283	1	
YOUNGP	0.41	.464*	-.847**	.833**	0.224	.843**	0.067	-0.283	.641**	.713**	0.281	-.941**	1

Table A. 10 Correlations between Crime Rate Against Property and Socio-Economic Variables

CORRELATIONS													
	RATE_CAP	Density	SR	UP	SC	Literacy	HLP	WPR	MIG	UNEMPL	NONWRK	DEPEND	YOUNGP
RATE_CAP	1												
Density	0.279	1											
SR	-.433 [*]	-.131	1										
UP	.539 ^{**}	.731 ^{**}	-.613 ^{**}	1									
SC	-.215	0.096	-.132	0.248	1								
Literacy	.447 [*]	.594 ^{**}	-.570 ^{**}	.802 ^{**}	0.386	1							
HLP	0.388	-.137	0.137	-.122	-.012	0.178	1						
WPR	-.18	-.474 [*]	0.281	-.577 ^{**}	-.03	-.155	0.405	1					
MIG	0.389	0.139	-.723 ^{**}	.508 [*]	0.29	.629 ^{**}	0.065	-.153	1				
UNEMPL	.678 ^{**}	0.319	-.607 ^{**}	.744 ^{**}	0.095	.590 ^{**}	0.174	-.518 [*]	.468 [*]	1			
NONWRK	0.177	.474 [*]	-.28	.575 ^{**}	0.029	0.153	-.406	-1.000 ^{**}	0.152	.516 [*]	1		
DEPEND	-.623 ^{**}	-.564 ^{**}	.714 ^{**}	-.913 ^{**}	-.265	-.911 ^{**}	-.126	0.285	-.651 ^{**}	-.753 ^{**}	-.283	1	
YOUNGP	.528 [*]	.464 [*]	-.847 ^{**}	.833 ^{**}	0.224	.843 ^{**}	0.067	-.283	.641 ^{**}	.713 ^{**}	0.281	-.941 ^{**}	1

Table A. 11 Correlations between Crime Rate Against Body and Socio-Economic Variables

CORRELATIONS													
	RATEA_CAB	Density	SR	UP	SC	Literacy	HLP	WPR	MIG	UNEMPL	NONWRK	DEPEND	YOUNGP
RATEA_CAB	1												
Density	-0.027	1											
SR	-0.05	-0.131	1										
UP	-0.026	.731**	-.613**	1									
SC	-0.199	0.096	-0.132	0.248	1								
Literacy	0.201	.594**	-.570**	.802**	0.386	1							
HLP	0.344	-0.137	0.137	-0.122	-0.012	0.178	1						
WPR	.475*	-.474*	0.281	-.577**	-0.03	-0.155	0.405	1					
MIG	0.039	0.139	-.723**	.508*	0.29	.629**	0.065	-0.153	1				
UNEMPL	0.141	0.319	-.607**	.744**	0.095	.590**	0.174	-.518*	.468*	1			
NONWRK	-.476*	.474*	-0.28	.575**	0.029	0.153	-0.406	-1.000**	0.152	.516*	1		
DEPEND	-0.116	-.564**	.714**	-.913**	-0.265	-.911**	-0.126	0.285	-.651**	-.753**	-0.283	1	
YOUNGP	0.072	.464*	-.847**	.833**	0.224	.843**	0.067	-0.283	.641**	.713**	0.281	-.941**	1

Table A. 12 Correlations between Crime Rate Against Women and Socio-Economic Variables

CORRELATIONS													
	RATE_CAW	Density	SR	UP	SC	Literacy	HLP	WPR	MIG	UNEMPL	NONWRK	DEPEND	YOUNGP
RATE_CAW	1												
Density	-0.231	1											
SR	0.212	-0.131	1										
UP	-0.225	.731**	-.613**	1									
SC	-.434*	0.096	-0.132	0.248	1								
Literacy	-0.184	.594**	-.570**	.802**	0.386	1							
HLP	0.337	-0.137	0.137	-0.122	-0.012	0.178	1						
WPR	0.286	-.474*	0.281	-.577**	-0.03	-0.155	0.405	1					
MIG	-0.218	0.139	-.723**	.508*	0.29	.629**	0.065	-0.153	1				
UNEMPL	0.077	0.319	-.607**	.744**	0.095	.590**	0.174	-.518*	.468*	1			
NONWRK	-0.286	.474*	-0.28	.575**	0.029	0.153	-0.406	-1.000**	0.152	.516*	1		
DEPEND	0.154	-.564**	.714**	-.913**	-0.265	-.911**	-0.126	0.285	-.651**	-.753**	-0.283	1	
YOUNGP	-0.19	.464*	-.847**	.833**	0.224	.843**	0.067	-0.283	.641**	.713**	0.281	-.941**	1

Table A. 13 Regression between IPC Crime rate and Socio-Economic Variables

	coefficient						
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7265.623	4754.707		1.528	0.157		
DENSITY	0.002	0.004	0.115	0.344	0.738	0.166	6.031
SEX_RATIO	-3.229	2.774	-0.613	-1.164	0.271	0.066	15.052
URBAN_POPULATION	1.825	4.642	0.391	0.393	0.702	0.019	53.509
SC_POPULATION	-14.884	6.874	-0.366	-2.165	0.056	0.647	1.547
LITERACY	-4.418	9.212	-0.213	-0.48	0.642	0.094	10.663
HOUSELESS_POP	473.802	287.289	0.377	1.649	0.13	0.354	2.827
MIGRATED_POP	0.208	5.333	0.011	0.039	0.97	0.218	4.59
UNEMPLOYMENT RATE	84.443	53.917	0.508	1.566	0.148	0.175	5.699
NONWORK_POP	-12.745	9.944	-0.44	-1.282	0.229	0.157	6.379
DEPENDENT_POP	-39.64	60.17	-0.861	-0.659	0.525	0.011	92.706
YOUNG_POP	-62.396	39.491	-1.308	-1.58	0.145	0.027	37.168

Dependent Variable: Total IPC crime rate

Table A. 14 Step wise Regression between IPC Crime rate and Socio-Economic Variables

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-52.843	97.625		-.541	.594		
	UNEMPLOYMENT	100.887	29.561	.607	3.413	.003	1.000	1.000
2	(Constant)	719.830	298.965		2.408	.026		
	UNEMPLOYMENT	142.801	30.115	.859	4.742	.000	.734	1.363
	NONWORK_POP	-14.156	5.250	-.488	-2.696	.014	.734	1.363
3	(Constant)	974.952	277.461		3.514	.002		
	UNEMPLOYMENT	149.360	26.338	.898	5.671	.000	.727	1.375
	NONWORK_POP	-14.442	4.573	-.498	-3.158	.005	.733	1.364
	SC_POP	-14.675	5.523	-.361	-2.657	.016	.990	1.010

a. Dependent Variable: RATE_IPC

Table A. 15 Regression between IPC Crime rate and Socio-Economic Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820 ^a	.672	.617	96.4242195

a. Predictors: (Constant), NONWORK_POP, SC_POP, UNEMPLOYMENT

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	974.952	277.461		3.514	.002		
	SC_POP	-14.675	5.523	-.361	-2.657	.016	.990	1.010
	UNEMPLOYMENT	149.360	26.338	.898	5.671	.000	.727	1.375
	NONWORK_POP	-14.442	4.573	-.498	-3.158	.005	.733	1.364

a. Dependent Variable: RATE_IPC

Table A. 16 Regression between Crime against Body and Socio-Economic Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656 ^a	.431	.371	15.6896

a. Predictors: (Constant), NONWORK_POP, UNEMPLOYMENT

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	180.725	42.357		4.267	.000		
	UNEMPLOYMENT	11.127	4.267	.527	2.608	.017	.734	1.363
	NONWORK_POP	-2.755	.744	-.748	-3.703	.002	.734	1.363

a. Dependent Variable: RATE_CAB

Table A. 17 Regression between Crime against Property and Socio-Economic Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.678 ^a	.459	.432	60.1172

a. Predictors: (Constant), UNEMPLOYMENT

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-74.163	46.243		-1.604	.124		
	UNEMPLOYMENT	57.721	14.002	.678	4.122	.001	1.000	1.000

a. Dependent Variable: RATE_CAP

Table A. 18 Regression between Crime against Women and Socio-Economic Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.434 ^a	.188	.148	4.4645

a. Predictors: (Constant), SC_POP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	25.167	4.568		5.510	.000		
	SC_POP	-.548	.254	-.434	-2.154	.044	1.000	1.000

a. Dependent Variable: RATE_CAW

Table A. 19 Regression between IPC Crime rate and Various Deterrence Variables

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.868 ^a	.754	.723	20.592	2.387

a. Predictors: (Constant), cases per civil policeman

b. Dependent Variable: IPC crime rate

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	143.803	40.667		3.536	.008		
	Cases/civil policeman	87.844	17.762	.868	4.946	.001	1.000	1.000

a. Dependent Variable: IPC crime rate

Table A. 20 Regression between Crime Against Property and Various Deterrence Variables

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.819 ^a	.670	.629	8.741	1.844

a. Predictors: (Constant), policemen/lakh pop

b. Dependent Variable: Crime Against Property

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-77.020	52.590		-1.465	.181		
	Police/lakh population	.579	.144	.819	4.031	.004	1.000	1.000

a. Dependent Variable: Crime Against Property

Table A. 21 Regression between Crime against Body and Various Deterrence Variables

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.681 ^a	.464	.397	2.432	1.381

a. Predictors: (Constant), police per lakh pop

b. Dependent Variable: Crime Against Body

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.755	14.631		-.462	.657		
	Police/lakh population	.105	.040	.681	2.630	.030	1.000	1.000

a. Dependent Variable: Crime Against Body

Table A. 22 Regression between Crime against Women and Various Deterrence Variables

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.950 ^a	.902	.875	1.717	2.346

a. Predictors: (Constant), unit cost/civil policeman in lakh rupees, arrests

b. Dependent Variable: Crime Against Women

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-11.868	5.231		-2.269	.058		
	arrests	.000	.000	.319	2.696	.031	.999	1.001
	unitcost	10.796	1.445	.883	7.472	.000	.999	1.001

a. Dependent Variable: Crime Against Women

